

DEVELOPMENT OF A METACOGNITIVE
STRATEGIES FRAMEWORK THROUGH EDUCATION
4.0 TO ENHANCE HEI LEARNING SUSTAINABILITY
AND GRADUATE EMPLOYABILITY

BY

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ABSTRACT

The main goal of entering higher education institutions (HEI) is employability. In response to the 4th Industrial Revolution (IR), Education 4.0 enables new potentials and promises through technology. Despite the benefits of Education 4.0, there are challenges present in the system. The objectives of this study were to identify the metacognitive strategies and how Education 4.0 enhance learning sustainability and graduate employability. The third objective was to propose a valid instrument to evaluate the effectiveness of metacognitive framework for learning sustainability and employability through Education 4.0. Mixed methods were used in data collection using exploratory sequential design. Semi-structured interviews were conducted with participants from three categories of university alumni, lecturers, and experts from the industries. From the findings of the interviews, an instrument was developed and distributed to experts in higher education and experts who are involved with the process of hiring new employees. Two rounds of the Fuzzy Delphi Method (FDM) were applied to analyse the data from the quantitative method. Seven metacognitive strategies that enhance graduate employability and learning sustainability were found, which are Showcase self, Self-improvement, Exposure, Self-study and study group, Career development and training, Reflection of learning, and Teaching approaches. There are two themes generated to answer how Education 4.0 enhances learners' learning sustainability and employability which are Purpose and Advantages. A framework has been developed, integrating both metacognitive strategies and Education 4.0. This framework would be significant for graduates to prepare themselves with the skillsets needed to become more visible to employers and increase their employability and learning sustainability in the future.

ملخص البحث

إن الهدف الرئيسي من الالتحاق بمؤسسات التعليم العالي هو التوظيف. واستجابة للثورة الصناعية الرابعة، يتيح نظام التعليم (4.0) إمكانيات ووعودًا جديدة من خلال التكنولوجيا. وعلى الرغم من فوائد نظام التعليم (4.0)، فإن هناك تحديات موجودة في هذا النظام تهدف هذه الدراسة أولاً، إلى تحديد إستراتيجيات ما وراء المعرفة، وثانياً، كيف يعزز نظام التعليم (4.0) استدامة عملية التعلم، وقابلية توظيف الخريجين. وكان الهدف الثالث فحص مدى فعالية إطار إستراتيجيات ما وراء المعرفة في عملية التعلم المستدام، وقابلية التوظيف من خلال نظام التعليم (4.0). استخدمت هذه الدراسة المنهج المختلط في جمع البيانات، حيث وظّفت التصميم المتسلسل الاستكشافي. تم إجراء مقابلات شبه منظمة مع مشاركين من ثلاث فئات، من خريجي الجامعات، والمحاضرين، وخبراء من مجالات مختلفة. وبناءً على نتائج المقابلات، تم تطوير أداة، وتم توزيعها على خبراء التعليم العالي، والخبراء المشاركين في عملية تعيين موظفين جدد. تم تطبيق جولتين من طريقة "دلفي" لتحليل البيانات الكمية. وقد تم العثور على سبع إستراتيجيات ما وراء معرفية تعزز قابلية توظيف الخريجين، واستدامة التعلم، وهي: عرض الذات، وتحسين الذات، والتعرض، والدراسة الذاتية ومجموعة الدراسة، والتطوير الوظيفي والتدريب، وانعكاس التعلم، وأساليب التدريس. كما تم استنباط اثنتين موضوعين من تحليل البيانات للإجابة على كيفية تعزيز نظام التعليم (4.0) لاستدامة تعلم المتعلمين، وقابليتهم للتوظيف، وهي: الغرض والمزايا. وقد تم تطوير إطار عمل يدمج كلاً من إستراتيجيات ما وراء المعرفة، ونظام التعليم (4.0). وسيكون هذا الإطار مهماً للخريجين من أجل تزويد أنفسهم بالمهارات اللازمة ليصبحوا أكثر وضوحاً لأصحاب العمل، ومن ثم، زيادة مستوى قابليتهم للتوظيف، واستدامة التعلم في المستقبل.

APPROVAL PAGE

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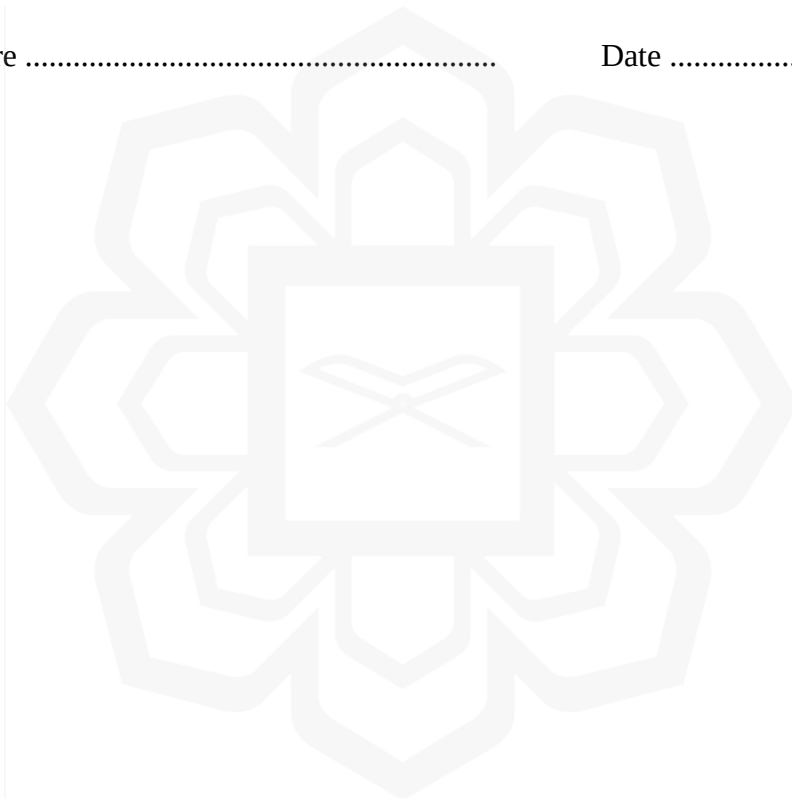
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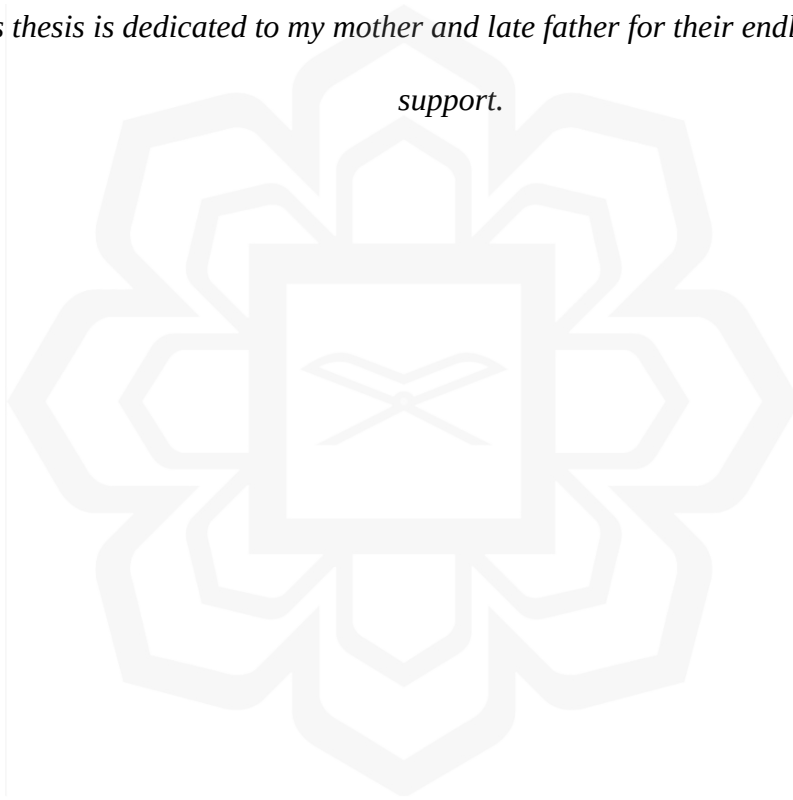
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This thesis is dedicated to my mother and late father for their endless love and support.



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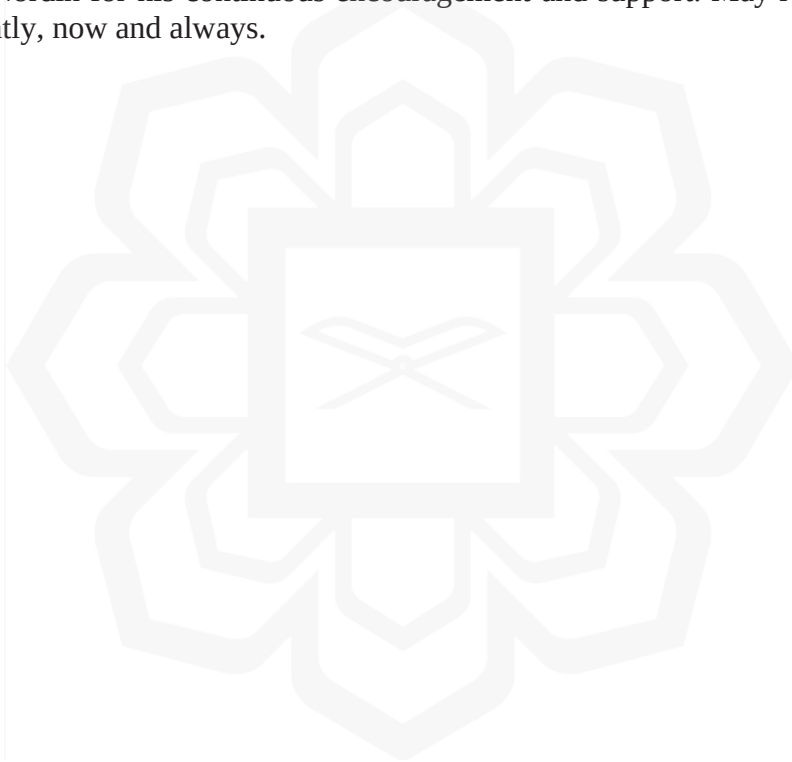


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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

In response to the 4th Industrial Revolution (IR), Education 4.0 enables new potentials and promises through technology (Aziz Hussin, 2018). Fisk (2017) highlighted a few visions of Education 4.0 which include learners identifying knowledge sources, learning being accessible anytime anywhere, and the ability to track learning performance through technology. Furthermore, peer learning is crucial in Education 4.0 and instead of teacher-centred lessons, the teachers act as the facilitators.

In Malaysian higher education institutions (HEI), the education system has been redesigned to be in line with the needs of Education 4.0 (Lawrence et al., 2019). A framework titled Malaysia Higher Education 4.0 Framework has been developed by the Ministry of Higher Education to future-proof graduates with the skill sets needed to excel in their careers after they graduate (Ministry of Higher Education, 2018). The framework focuses on four themes namely Future Ready Curriculum, Agile Governance, Talent Planning and, Research and Innovation. There are four principle aspects addressed which are: 1. Redesigning higher education initiatives, 2. Applying a fluid and organic curriculum, 3. Transforming learning and teaching; and 4. Providing alternative assessments (Ministry of Higher Education, 2018).

Upon graduation, graduates will face an important phase of their career; the main goal of entering HEI in the first place is employability. Remarkable degrees and results are inadequate to guarantee one's employability (Abd Majid et al., 2020). Besides certifications and practical skills, graduates are expected to possess soft skills to be more visible to their potential employers (Ang, 2015). The mentioned skills are mostly enhanced during students' involvement outside of the classroom like extra-curricular programmes and collaborations with the industries (Ma'dan et al., 2020). Some of the soft skills highlighted are teamwork, communication, critical thinking and problem-solving (Ang, 2015; Mohd Tahir et al., 2018; Nadarajah, 2021; O'Leary, 2016; Tran, 2019). The mentioned skills make up the skill sets advised by the Ministry

of Education for graduates to learn and practice (Ministry of Higher Education, 2018, p. 110). These skill sets are also parallel with graduate attributes outlined in Malaysia Education Blueprint 2015-2025 (Ministry of Education, 2015, pp. 14-15).

Besides producing graduates with future-proof skill sets, Education 4.0 benefits 21st century instructors by equipping themselves with digital skills and fulfilling the needs of learners from different generations (Lawrence et al., 2019).

1.2 STATEMENT OF PROBLEM

1.2.1 Education 4.0 and COVID-19

Despite the benefits of Education 4.0 stated, there are challenges present in the system. Similar to how changes are accepted in other areas, there were issues of lacking enthusiasm and resistance to changes, particularly among instructors who are traditionalists (Lawrence et al., 2019). However, since the emergence of the COVID-19 pandemic, Education 4.0 has been accepted and adapted according to the needs of learners in the community (Darma et al., 2020). COVID-19 has changed the traditional perspective of learning being constricted to the four-wall classrooms. This is due to the characteristics of Education 4.0 which allows learning to be accessible anytime anywhere, learners are able to identify knowledge sources, and the ability to track learning performance through technology (Fisk, 2017). During the first stage of COVID-19, there was a worldwide quarantine whereby face-to-face interaction was not permitted. All industries had to either pause operations or operate completely online which also includes the education system in Malaysia. Home-based learning and teaching (PdPR) was first introduced in March 2020. Nambiar (2021) reported that when PdPR was introduced, everything was 100 percent online. This created issues for the parents in managing their children and for teachers especially in terms of access to gadgets and Internet connection as not all families are privileged enough to provide adequate online learning (Nambiar, 2021). Then, the system was improvised to suit parents' working schedules as well as children's class timetables. Instead of online learning sessions multiple times daily, the online session was conducted once a week and students were given ample time (3 weeks) to complete the tasks/assignments

given. Some schools were given the freedom to adapt for cases where the students cannot afford to access gadgets or Internet connection. An example was to distribute offline modules and worksheets for parents to collect for their children to complete at home and return them to the teachers (Nambiar, 2021).

1.2.2 Challenges of Education 4.0 and COVID-19

Despite the advantages that Education 4.0 brought in helping to bridge the gaps that existed during the pandemic, some disadvantages came with it. Excessive access to technology is devoid of human touch which in return, deeply impacts students' mental health and acceptance to learn online (Mat Nor et al., 2021). Teachers reported less participation from the students during online learning compared to face-to-face lessons done prior to COVID-19 (Mahalingam & Jamaludin, 2021). 40 percent of Malaysian students have experienced learning loss for not being able to join PdPR and in Kuala Terengganu alone, more than 7000 students faced this issue (Amar-Singh et al., 2022; Zolkiply & Bakar, 2021). Dervojeda (2021), the head of the Innovation Research Centre at PwC, Netherlands spoke on the importance of humanising technology through Education 5.0 which is lacking in Education 4.0. According to her, Education 5.0 focuses on humans and it is about making ethical choices and considerations in incorporating technology in education rather than focusing on the technological tools only.

1.2.3 Lacking of Learners' Visibility and 21st-century skills

Aside from the issues mentioned, the COVID-19 pandemic also affected graduate employability. Due to several Movement Control Orders (MCO) in Malaysia, the unemployment rate in 2020 increased by 4.4% compared to 2019 (Mahidin, 2021). Fortunately, the percentage decreased to 4.1% in 2021 after business operations slowly returned to normal in the endemic phase (Department of Statistics Malaysia, 2022). There are many factors behind this phenomenon and learners' visibility is one of them (Jones, 2013). Learners' visibility to the stakeholders and future employers is crucial in determining learners' employability. In order to increase learners' visibility,

they should start to be independent lifelong learners and sustain their learning (Jones, 2013). Besides visibility, employers reported another issue among graduates which they lack 21st-century skills like critical thinking, communication skills and English language proficiency (Ministry of Education, 2015). Mismatch of skills between industries and graduates is also a contributing factor to employability (Ang, 2015). According to Ang (2015), six mismatches of skills were ranked at 1. Commercial awareness about the business, 2. Self-management, 3. Computer literacy, 4. Information retrieval, 5. Planning, and, 6. Resolving conflict. In terms of gender comparison, female graduates are more clear in terms of employers' expectations of graduates' employability skills compared to male graduates. Another factor affecting employability is the employability gap among graduates and the competencies required in job markets (Nadarajah, 2021). Problem-solving, communication and analytical skills were noted as the top three skills that employers are looking for among graduates. Unfortunately, most graduates still have a lot to learn to improve the skills mentioned (Ang, 2015; Mohd Tahir et al., 2018; Nadarajah, 2021; O'Leary, 2016; Tran, 2019).

1.2.4 Metacognitive Strategies Practices in Malaysian Higher Education

Several studies have been conducted investigating metacognitive strategies practices in Malaysia. Metacognitive strategies were assessed among university students and the findings indicated a high level of self-regulation, particularly through awareness of learning weaknesses (Philip, 2018); a significant positive relationship between metacognitive strategies and learning achievement (Abd Latip et al., 2020); as well as facilitated independent learning and self-evaluation (Anthonysamy, 2021).

Previous studies highlighted the positive effects of metacognitive strategies particularly on learning sustainability, performance, self-regulation and self-confidence (Abd Latip et al., 2020; Anthonysamy, 2021; Philip, 2018; Yildiz, 2020). Metacognitive strategies are crucial in addressing the issues mentioned earlier as graduates are expected to have critical thinking and problem-solving skills upon entering the workforce. These skills could be nurtured through metacognitive strategies (Abd Latip et al., 2020; Anthonysamy, 2021; Philip, 2018; Yildiz, 2020).

Therefore, this study intended to develop a metacognitive strategies framework through the use of Education 4.0 tools in enhancing learners' employability to address the problems stated earlier.

1.3 PURPOSE OF THE STUDY

This study was conducted with the purpose of analysing, designing and developing a framework for metacognitive strategies to enhance learning sustainability and employability through Education 4.0.

1.4 RESEARCH OBJECTIVES

The three objectives of the study are 1) to investigate the required metacognitive strategies in enhancing learners' learning sustainability and employability through Education 4.0; 2) to propose a metacognitive strategies framework for learning sustainability and employability through Education 4.0, and 3) to propose a valid instrument to evaluate the effectiveness of metacognitive framework for learning sustainability and employability through Education 4.0.

1.5 RESEARCH QUESTIONS

This study has answered these research questions:

1. What are the required metacognitive strategies to enhance learners' employability and learning sustainability through Education 4.0 from the perspective of experts, lecturers and alumni?
2. How does Education 4.0 enhance learners' learning sustainability and employability from the perspective of experts, lecturers and alumni?

3. What are the attributes of a valid instrument to evaluate the effectiveness of a metacognitive strategy framework for learning sustainability and graduate employability through Education 4.0?

1.6 SIGNIFICANCE OF THE STUDY

The findings of this study led to the development of a framework of metacognitive strategies which will be new knowledge for graduates to prepare themselves with future-proof skill sets that will be valuable for their careers. Stakeholders in education particularly lecturers and curriculum developers could benefit from the new knowledge of how learners take ownership and sustain their learning. It is expected that the findings will expand the Malaysia Higher Education 4.0 Framework developed by the Ministry of Higher Education in 2018. Moreover, this study will benefit employers and HEIs to collaborate in bridging the gap of skills mismatch that is currently happening nationwide. Last but not least, the outcome is significant to policymakers as it will fulfil the 3rd Shift of Malaysian Education Blueprint 2015 - 2025, Nation of Lifelong Learners which will lead to an increase in learners' visibility and employability (Ministry of Education, 2015).

1.7 DELIMITATIONS OF THE STUDY

One of the delimitations of the study comes from the location which is focused in Malaysia. Thus, the findings could not be generalised to other countries. Due to the limitation in the research time frame, the population was limited to only selected HEIs that fit the research criteria based on the purposive sampling method utilised. Another delimitation was the analysis technique that was used after data collection. Fuzzy Delphi Analysis relies on experts' opinions and consensus (Manakandan et al., 2017). This means that there are no definite and correct answers compared to other techniques. In this study, Fuzzy Delphi Method was chosen as it helps the researcher to answer the research questions.

1.8 DEFINITION OF TERMS

1.8.1 Education 4.0

Joshi (2022) defined Education 4.0 as “a technique of learning that is connected with the fourth industrial revolution and focuses on transforming the future of education through advanced technology and automation” (p. 2). In this study, Education 4.0 means any teaching and learning method that focuses on transforming education with the usage of technology. The characteristics of Education 4.0 include learners identifying knowledge sources, learning being accessible anytime anywhere, and the ability to track learning performance through technology (Fisk, 2017).

1.8.2 Employability

Employability is defined as “a set of achievements – skills, understandings and personal attributes – that makes graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy” (Yorke, 2005, p.8). In this study, employability is defined as the qualities and skills that learners possess which make them visible to future employers. Some of the skills and qualities highlighted are teamwork, communication, critical thinking and problem-solving (Ang, 2015; Mohd Tahir et al., 2018; Nadarajah, 2021; O’Leary, 2016; Tran, 2019).

1.8.3 Visibility

Visibility is defined as graduates’ ability to be unique, visible and noticed by employers in the industry (Jones, 2013). This study defines visibility as the learners’ capability to stand out and be noticeable to future employers.

1.8.4 Metacognitive strategies

According to Schoenfeld (2013), metacognition can either be defined as the science of one's thought process or the self-regulation that one does when solving a problem. The mental processes involved include problem-solving, gaining knowledge, thinking and comprehending. Metacognition also allows learners to be self-directed learners and achieve learning sustainability. To achieve it, learners will need to practice skills gained from metacognitive strategies (Schoenfeld, 2013). This study defines metacognitive strategies as strategies or techniques used by learners in mental processes involved during learning.

1.8.5 Learning sustainability

Woolis (2021) defines 'learning sustainability' as a paradigm of educational methods that support a healthy learning ecosystem (Woolis, 2021). This study defines learning sustainability as a healthy, effective and continuous lifelong process that learners use in acquiring knowledge.

1.9 SUMMARY

This chapter discussed the study background and problem statement. It was followed by a discussion of the research purpose, objectives and questions. The significance and limitations of the study were noted. Lastly, frequently used terms were defined within the research context.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 EDUCATION 4.0

In the 18th century, the first industrial revolution transformed lives and the economy, transforming agriculture and handicrafts through industry and machine production powered by steam. With the second industrial revolution during the 19th century, mass production was made possible by oil and electricity. In the advent of the 20th century, information technology was utilised to automate production (Xu et al., 2018). The World Economic Forum's founder and executive chairman, Klaus Schwab, invented the term "fourth industrial revolution" to describe a society in which individuals utilise connected technology, IoT (Internet of Things), cloud, and big data that allow and manage lives as people transit between online and offline domains (Xu et al., 2018).

In response to the 4th Industrial Revolution (IR), Education 4.0 enables new potentials and promises through technology (Aziz Hussin, 2018). Joshi (2022) defined Education 4.0 as “a technique of learning that is connected with the fourth industrial revolution and focuses on transforming the future of education through advanced technology and automation” (p. 2). Fisk (2017) highlighted a few visions of Education 4.0 which include learners identifying knowledge sources, learning being accessible anytime anywhere and the ability to track learning performance through technology. According to him, peer learning is crucial in Education 4.0 and instead of teacher-centred lessons, the teachers act as the facilitators.

2.1.1 Trends of Education 4.0

Fisk (2017) noted nine trends connected to Education 4.0. Firstly, learning is accessible anytime anywhere due to the increase of online and self-paced learning through e-learning tools. A flipped classroom has a significant impact because it enables learners to spend more time learning interactively in class as they have received theoretical education outside of the classroom.

Secondly, instructions are tailored to each learner. Delivery will be conducted stage by stage from the Beginner stage to the Advanced stage once the learners mastered the basics. Teachers will offer more practice if there is a need. Positive reinforcement is the norm to foster a positive learning environment and increase learners' self-confidence in their learning journey.

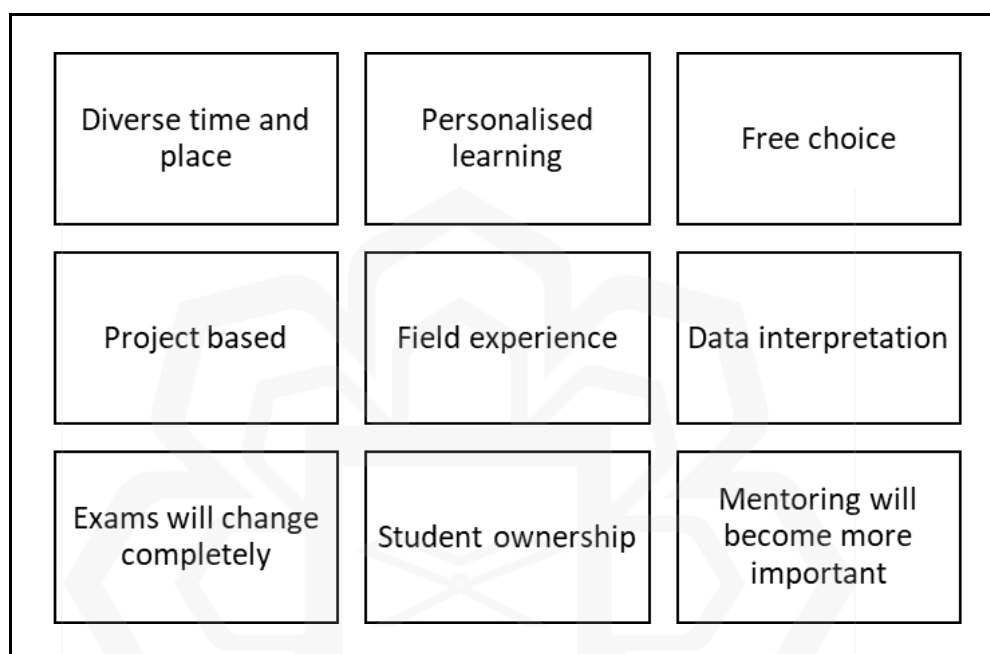


Figure 2.1 Nine Trends of Education 4.0 (Fisk, 2017)

Thirdly, learners have the freedom to choose their learning preferences. Learning outcomes are determined by the institutions and curriculum developers but learning tools or strategies are customisable based on learners' preferences. Some strategies applied such as blended learning, flipped classroom, and BYOD (Bring Your Own Device) approach will encourage learners to be creative and critical thinkers.

Fourth, instead of exam-oriented goals, more project-based learning will be made available to learners. Learners will be given quick projects that students must complete in stages using their knowledge and skills. These projects encourage the development of organisational, teamwork, and time management skills that will be helpful for graduate employability.

Fifth, more hands-on experiences will be achieved by learners through internships, mentorships, and team projects. The development of technology has made it possible to learn certain subjects effectively, opening up more opportunities to develop abilities that require human understanding and face-to-face communication.

Sixth, learners will learn about data interpretation, where they must apply their theoretical understanding to numerical data and use critical thinking to draw conclusions based on logic and trends from the data. Manual components of mathematical literacy will be obsolete as computers will do statistical analysis and forecast future trends.

Seventh, learners will be assessed differently, and the traditional methods of assessment may no longer be relevant. Theoretical knowledge will be assessed during the learning process and applied knowledge will be assessed during the learners' project phases.

Eighth, the curriculum will be designed and updated with the learners' input. Their suggestions will support the curriculum developers in keeping the learning outcomes, materials and assessments relevant to the needs of 21st-century education.

Last but not least, as learners grow to be self-directed and lifelong learners, instructors will take on a new role as facilitators. Teacher-centred learning will no longer be the norm as instructors are the ones who will lead learners through their learning process.

The nine trends of Education 4.0 transfer the majority of learning-related duties from instructors to learners. These changes should be supported by instructors, who should never see them as threats to the traditional teaching profession (Aziz Hussin, 2018; Fisk, 2017).

2.1.2 Education 4.0 in Malaysia

In Malaysia, the higher education system has been redesigned to be in line with the needs of Education 4.0 (Lawrence et al., 2019). A framework has been developed by the Ministry of Higher Education which focuses on four themes namely Future Ready Curriculum, Agile Governance, Talent Planning and, Research and Innovation. There are four principal aspects addressed which are: 1. Redesigning higher education initiatives, 2. Applying a fluid and organic curriculum, 3. Transforming learning and teaching; and 4. Providing alternative assessments.

The framework can be seen in the figure below:

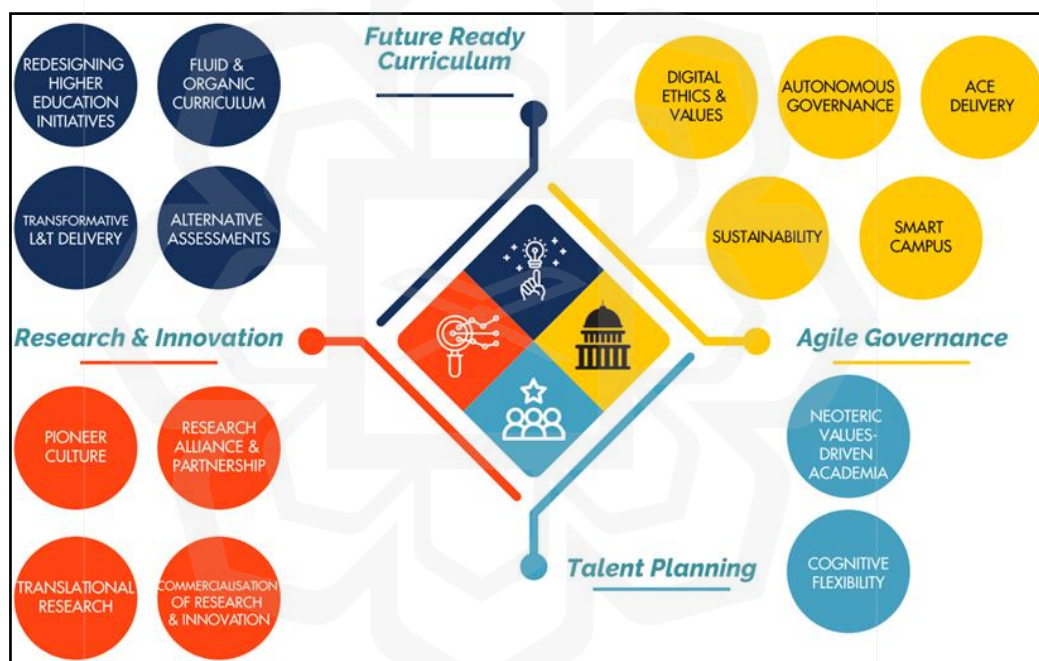


Figure 2.2 Malaysia Higher Education 4.0 Framework (Ministry of Higher Education, 2018, p.71)

1. Redesigning higher education initiatives

Several initiatives like industry exposure (2u2i), Massive Open Online Course (Malaysia MOOCs ¹⁵) and digital CV (MyE-Portfolio) have been taken to realise the first aspect. Industry exposure helps learners to be entrepreneurial, MOOCs encourage them to be lifelong learners and ePortfolio helps graduates to be visible to employers. The objectives of these programmes are aligned with the 1st, 3rd, 7th and 9th Shifts of

Malaysia Education Blueprint 2015-2025 (Ministry of Education, 2015; Ministry of Higher Education, 2018).

2. Applying a fluid and organic curriculum

A fluid and organic curriculum is developed to be future-ready to fulfil the needs of graduates in facing 21st-century careers and technology. It is flexible and non-conventional as it allows learners to learn anytime anywhere. The curriculum is interdisciplinary in nature and it focuses on university collaboration in embracing learners' mobility.

3. Transforming learning and teaching

Learning and teaching are transformed through 21st-century pedagogies. It is technology-driven and it promotes immersive experiential learning. Student-centred lessons, peer learning and co-creation are a few key elements included in 21st-century pedagogies. An immersive learning experience like AR/VR (Augmented Reality/Virtual Reality) in medical courses brings down the barrier that previously existed in traditional learning and teaching.

4. Providing alternative assessments

Several types of assessments like authentic, performance-based and personalised assessments are preferred in this context compared to traditional assessments that have been practised before. The reason behind this is to achieve the aspiration of Malaysia Education Blueprint 2015-2025 which is to produce balanced and holistic graduates (Ministry of Education, 2015, pp.14-15).

It can be seen clearly that all the above aspects highlighted in the framework have one thing in common which is to future-proof graduates with the skill sets needed to excel in their careers after they graduate (Ministry of Higher Education, 2018).

Upon graduation, graduates will face an important phase of their career; the main goal of entering higher education institutions in the first place, which is employability. Remarkable degrees and results are inadequate to guarantee one's employability (Abd Majid et al., 2020). Besides certifications and practical skills, graduates are expected to possess soft skills to be more visible to their potential employers (Ang, 2015). The mentioned skills are mostly enhanced during students' involvement outside of the classroom like extra-curricular programmes and collaborations with the industries (Ma'dan et al., 2020). Some of the soft skills highlighted are teamwork, communication, critical thinking and problem-solving (Ang, 2015; Mohd Tahir et al., 2018; Nadarajah, 2021; O'Leary, 2016; Tran, 2019).

2.1.3 Benefits of Education 4.0

Communication

Studies have shown that by incorporating Education 4.0 tools and practices, stakeholders like learners, educators, institutions and industries are able to enjoy a lot of benefits. Better communication is achieved through the use of Education 4.0 tools (Choi et al., 2020; Panagiotopolos & Karanikola, 2020). Choi et al. (2020) investigated students' perceptions and experience of visual thinking strategies (VTS) integrated into online sessions during the pandemic.

In VTS, the instructors chose photos as visual aids to be presented as prompts for the students to start discussions. Students were instructed to observe the photos, express their observations, and discuss them with their peers. These were done through verbal sharing or real-time chat in the online learning session. The instructors act as facilitators by moderating the discussion, providing feedback on the students' sharings and fostering reflection (Choi et al., 2020).

During the sessions, students actively engaged and communicated with their peers. It was also reported that they valued the chance to hear others' perspectives and viewed the sessions as collaborative learning experiences similar to what they had experienced on campus (Choi et al., 2020). Besides communication benefits among peers, the integration of technology also enhances instructors' communication with students, parents, and colleagues (Panagiotopolos and Karanikola, 2020).

Learner-centredness

Education 4.0 implementation promotes learner-centredness as discussed by previous studies (Choi et al., 2020; Kunnari et al., 2021). During the pandemic, teaching and learning were conducted online and instructors adapted the lessons to be suitable for an online environment. They are able to develop new skills to apply technology and promote active learning activities rather than relying on traditional lectures. With this adjustment, they observe the benefits of student-centred approaches (Choi et al., 2020). Educators have started to transform their teaching from theoretical to practical where students are encouraged to discuss, collaborate and create (Kunnari et al., 2021). Self-study outside of classroom sessions was also encouraged and guidance was given by instructors to foster learners' autonomy (Kunnari et al., 2021).

Employability Skills Development

With Education 4.0 integration, students have developed skills that will benefit their employability. A case study was conducted to investigate the COVID-19 experiences from the perspective of the students, instructors and institutions in Vietnam (Kunnari et al., 2021). It was highlighted that students have developed technological skills from the online learning sessions (Kunnari et al., 2021). Another study was conducted to investigate the use of digital tools in higher education and it was found that students have learned to be independent and analytical (Porubčinová et al., 2020).

Similarly, a study investigating the integration of Challenge-based Learning (CBL) for working skill development was conducted and the findings indicate that the CBL integrated has helped undergraduate students to acquire working skills which include technological skills, problem-solving skills, critical skills, soft skills and research skills (Vilalta-Perdomo et al., 2022).

Increased Engagement and Motivation

Education 4.0 has been reported to increase engagement and motivation among students. Choi et al. (2020) found that activities applying visual thinking strategies increase students' engagement. The study indicates that the activities also motivate some students to apply what they learned during discussion. The same finding was reported in another study claiming that online learning motivates students with interesting learning activities and materials (Kunnari et al., 2021).

In addition, learning outcomes are improved which results in interesting and engaging lessons (Panagiotopolos & Karanikola, 2020). As a result, learning satisfaction is predicted which will lead to academic success in the future (Adewale & Tahir, 2022).

Freedom and Flexibility

Education 4.0 offers freedom and flexibility which might not be achieved through traditional learning. With Education 4.0 integration, teaching and learning can be conducted online anytime anywhere with the usage of tools and resources readily available on the Internet (Kunnari et al., 2021; Panagiotopolos & Karanikola, 2020). The tools used can be adapted suitable with the students' needs (Panagiotopolos & Karanikola, 2020).

Additionally, Education 4.0 promotes active learning and findings have shown with active learning, students have the freedom to discuss and talk with their peers because there is less pressure for them to provide correct answers (Choi et al., 2020).

Based on the findings by Vilalta-Perdomo et al. (2022), CBL provides freedom and encourages students to be creative and innovative in finding solutions which result in a higher level of knowledge inquiry.

Improved Teaching Practice

Studies revealed that teaching practice has been improved following the integration of Education 4.0 tools and practices. Instructors have transformed their teaching methods from traditional and theoretical to digital pedagogy and learner-centred practices (Kunnari et al., 2021). It was noted that instructors have learned how to conduct different teaching approaches that are learner-centred like project-based learning, blended learning, experiential learning, and flipped learning to name a few

The teaching and learning process is organised better with the use of digital tools (Kunnari et al., 2021; Porubčinová et al., 2020). Porubčinová et al. (2020) investigated the adoption of digital learning tools in the Faculty of Materials Science and Technology and the Faculty of Civil Engineering of Slovak University of Technology. The study indicates that the teaching process has been organised and improved extensively with the use of a database system (Porubčinová et al., 2020).

Improved Assessment

Apart from improving teaching practice, assessment has also improved thanks to Education 4.0 integration. Some of the improvements include peer and self-assessment as well as e-portfolios which are a step further than the previous assessment methods that relied heavily on examination (Kunnari et al., 2021). Students gain experiences from project-based learning and activities outside of the classroom which plays a role in transforming and improving assessment methods (Kunnari et al., 2021).

Co-creation and collaboration

Co-creation and collaboration are highlighted as one of the benefits of Education 4.0 integration (Kunnari et al., 2021). During the pandemic, instructors have stepped out of their comfort zone to adapt teaching and learning and this has led to collaboration and co-creation. Instructors collaborate to develop materials and tools for their lessons. Then, these newly developed skills are shared through training, workshops and webinars with the other instructors as well as other institutions (Kunnari et al., 2021).

Cost saving

Institutions are able to save costs when Education 4.0 tools and practices are implemented. Online learning practices are found to be affordable and feasible, particularly during the pandemic that limits on-campus classes (Choi et al., 2020). The cost of learning materials is also saved with the inclusion of digital pedagogy (Panagiotopolos & Karanikola, 2020).

Industry-Institution Collaboration

Industry-institution collaboration has increased through technology integration in education. Kunnari et al. (2021) found that the industries were facing the challenge of maintaining their business activities during the pandemic. Thankfully, with the rise of Education 4.0, business activities could be maintained as they were able to collaborate with several institutions. Some of the collaboration projects include giving training aimed at bridging the knowledge gap between institutions and industries, facilitating internships and job opportunities, arranging academic competitions, and offering scholarships Kunnari et al. (2021).

Besides that, the collaboration offers expert advice from the institutions (Porubčinová et al., 2020). New findings and trends are introduced to address some of the challenges faced in the industries (Porubčinová et al., 2020).

The table below shows the benefits of Education 4.0 for the stakeholders.

Table 2.1 Benefits of Education 4.0 for Stakeholders

Stakeholders	Benefits
Learners	Communication Learner-centredness Employability skills development Increased Engagement and Motivation Freedom and flexibility
Educators	Improved teaching practice Improved assessment Co-creation and collaboration Communication
Institutions	Co-creation and collaboration Cost saving
Industries	Industry-Institution Collaboration

The table below summarises the studies on the benefits of Education 4.0.

Table 2.2 Characteristics of Included Studies for Benefits of Education 4.0

Authors	Year	Setting	Type of Research	Method	Sample/Tools
Adewale & Tahir	2022	Nigeria	Research	Survey	270 students in higher education institutions
Choi et al.	2020	Korea	Research	Mixed method	60 second-year undergraduate nursing students
Kunnari et al.	2021	Vietnam	Research	Qualitative case study	6 partner institutions 35 teachers
Panagiotopolos & Karanikola	2020	Greece	Research	Survey	233 primary education teachers
Porubčinová et al.	2020	Slovakia	Research	Literature review and qualitative interview	15 education professionals at the Faculty of Civil Engineering of STU
Vilalta-Perdomo et al.	2022	United Kingdom	Research	Qualitative document analysis	302 undergraduate business students

2.2 CHALLENGES IN EMPLOYABILITY

Lack Employability Skills

One of the challenges faced by graduates regarding their employability is their lack of employability skills. Albina and Sumagaysay (2020) surveyed 177 IT and Computer Science graduates in the Philippines. They discovered low percentages of employability skills like entrepreneurial, critical thinking, and problem-solving skills among the graduates.

Another study found the same result which indicates the lack of employability skills among graduates. Aloui and Shams Eldin (2020) investigated the factors of unemployment rates among graduates of a university in Saudi Arabia and it was found that the graduates' low employability skills are one of the factors of their unemployment. In relation to this, according to Bikse et al. (2022), a significant deficiency in digital skills is the biggest challenge that graduates are facing, particularly in the private sector.

Similarly, Chan et al. (2021) studied the competencies of students after their study completion in Hong Kong and it was reported that their scores were lower for skills like problem-solving, critical thinking, leadership skills, communication and interpersonal effectiveness. Besides these skills, other skills that graduates are lacking include active listening, interpretation and empathy as found in a mixed method study by Mohamed Khodeir and Nessim (2020).

Skill Gap

Apart from having low employability skills, there is a gap between the skills that the graduates possess with the skills expected by the industries. Pappas et al. (2018) investigated women entrepreneurship in Greece and they found a notable mismatch between the availability and demand for ICT skills. 1/3 of the participants rated their ICT skills as advanced which do not meet the needs of the industries.

Another study found a similar result indicating a skill gap or mismatch between students' and employers' perceptions. Graham (2017) conducted a review and found that students prioritise IT skills whereas employers value soft skills like communication and interpersonal skills over “hard” teachable skills.

Pheko and Molefhe (2017) conducted a qualitative study among 83 students in two Psychology courses in Botswana. Their research indicates a skill gap as the students lack crucial fundamental skills sought by employers. The top three employability skills identified by employers are numeracy, literacy, and communication skills which were not acknowledged as significant by the students. The researchers reported that this is due to a lack of awareness regarding essential employability skills. Another study highlighted that employers view business and technical skills as vital skills for decision-making, problem-solving, and information analysis which graduates are unable to meet this expectation (Islam, 2022).

The skill gap that is occurring leads to a competitive job market. Based on the survey by Albina and Sumagaysay (2020), roughly 21.47% of the participants were unemployed. Having a Diploma is not a guarantee for employment. It was stated that this is due to the competitive job market and limited employment opportunities. The study suggested students equip themselves with employability skills in facing this challenge.

Lack of Work Experience Connection

Gilbert et al. (2022) conducted a mixed-method study among 94 students taking a Project Management course in Australia. It was found that the students do not link their past work experience to future employability. The study added that students lack the understanding of the knowledge and skills required for their future employability and, therefore were unable to connect their experience with their planning. The researchers highlighted that when students understand the required knowledge and skills for their employability, they will be able to develop the necessary skills as well as connect the skills they gained from previous work experience to enhance their employability.

Gender Barriers

Apart from the lack of work experience connection, gender barriers are one of the challenges faced by graduates in terms of their employability. In the same study, Gilbert et al. (2022) reported a female participant's perception of gender barriers that exist in the project management industry which is dominated by males. It is more challenging for females to manage projects and become leaders as compared to males. The study also added that the male participants did not view this as a challenge. This influences the female participants to explore other industries that are not dominated by males.

Besides the project management industry, gender barriers exist in the ICT industry. According to Pappas et al. (2018), female participants notice significant gaps between the supply and demand for ICT professionals and a shortage of female entrepreneurs in sectors requiring ICT skills. In addition, they feel that they are not adequately represented in ICT fields, including traditional IT roles and communication technology professions. Gender disparities also exist in entrepreneurship, with men outnumbering women as business owners. Societal norms, stereotypes, and a lack of female role models hinder women from reaching their full potential, leading to less interest in entrepreneurial careers and lower confidence in their entrepreneurial abilities.

Disability Barriers

People with disabilities face some challenges in their employability (Moriña & Biagiotti, 2022). It was reported that graduates with disability issues face negative treatment and prejudice which lower their self-efficacy and self-esteem. These affect their employability. It was added that people with visual or hearing impairments face the challenge of internship placement as not all companies are able to fulfil the needs required by disabled people (Moriña & Biagiotti, 2022).

Ritchie et al. (2022) investigated the effects of dementia on employability among 38 key informants diagnosed with dementia. The study indicates that the misunderstanding and stigma of dementia have impacted their employability. This is due to employers' inability to adjust and provide support needed for continuous employment as well as doctors' advice for the individuals to retire and leave work.

Outdated Curriculum

Outdated curriculum in higher education institutions plays a role in graduate employability. Based on Bhatt and Smita's (2021) review, the curriculum in some institutions is outdated with a heavy emphasis on theories and not so much on practical practices that are needed for the graduates to perform in the industry later. The reason for the outdated curriculum is because of minimal collaboration between the institution and industrial experts (Bhatt & Smita, 2021). A study conducted by Chan et al. (2021) revealed that some institutions are still adopting traditional curricula with teaching methods that focus on rote learning, teacher-centred lectures and memorisation. This curriculum is outdated as it emphasises exam-oriented teaching and learning instead of practical experiences. Similarly, Manan et al. (2021) believe that a teacher-centred curriculum leads to rote learning and memorisation as well as hinders the development of critical thinking and problem-solving skills among the students.

In another study, 335 university students from Education faculty in South Africa claimed that they expect to apply the knowledge learned and skills developed when they enter the workforce (Chigbu & Nekhwevha, 2022). However, due to the outdated curriculum, they received minimal support from the faculty in terms of their employability skills.

In addition, a study found that students enrolled in a project management course have yet to make any decision on which industry to venture into (Gilbert et al., 2022). There was weak communication by the faculty in terms of the students' future journeys that could assist them in preparing for their future employability. It was

suggested that the curriculum be updated and the student's future journey should be better communicated for improved employability (Gilbert et al., 2022).

Kenayathulla et al. (2019) studied the employability skills gained by 841 hospitality students and found low skills gained among culinary and bakery students. The students claimed that they were not given enough exposure by the faculty to develop the skills needed for future employability.

Soft skills were highlighted as crucial skills for graduates to have but unfortunately were not adequately exposed (Manan et al., 2021; Mohamed Khodeir & Nessim, 2020). According to the student's perspective, the soft skills that require more exposure include communication, active listening and time management skills (Mohamed Khodeir & Nessim, 2020). Studies suggest an improvement in curriculum design, teaching methods and classroom environment to help graduates with soft skills development (Manan et al., 2021; Mohamed Khodeir & Nessim, 2020; Gilbert et al., 2022; Kenayathulla et al., 2019).

Poor Management

Studies have revealed that poor management in institutions or industries is a part of the challenges in employability. In India, it was reported that senior positions in education are limited (Bhatt & Smita, 2021). Educators are overworked with less competitive salaries and urged to pass students who are ineligible. These lead to poor job application in the education industry (Bhatt & Smita, 2021).

Lack of communication between institutions and industries also affects graduate employability (Moriña & Biagiotti, 2022). The lack of communication affects the graduates' internship placement and they face difficulties in finding potential companies, particularly among graduates with disability barriers (Moriña & Biagiotti, 2022).

Missing Government Policy

According to Cheng et al. (2022), there is a gap between the UK government's objective for graduate employability with what is expected by employers (Cheng et al., 2022). Employers value graduates with soft skills like critical thinking and problem-solving whereas the government mainly focuses on knowledge accreditation and vocational skills development (Cheng et al., 2022).

Meanwhile, in Pakistan, there is a no policy for solving the issue of slow economic growth there (Manan et al., 2021). There is also a decreasing labour demand in Botswana (Pheko & Molefhe, 2017). It is suggested that the government diversify the economy to bring out more job opportunities for graduates (Manan et al., 2021; Pheko & Molefhe, 2017).

The table below shows the issues in employability based on the stakeholders.

Table 2.3 Issues in Employability Based on Stakeholders

Stakeholders	Issues
Graduates	Lack of employability skills Skill gap Lack of work experience Gender barriers Disability barriers
Institutions	Outdated curriculum
Industries	Skill gap Poor management
Government	Missing government policy

The table below summarises the included studies for Challenges in Employability.

Table 2.4 Characteristics of Included Studies for Challenges in Employability

Authors	Year	Setting	Type of Research	Method	Sample/Tools
Albina & Sumagaysay	2020	Philippines	Research	Quantitative	177 graduates in IT and Computer Science
Aloui & Shams Eldin	2020	Saudi Arabia	Research	Quantitative	102 graduates at the Tathleeth Faculty of Arts and Science at the University of Bisha
Bhatt & Smita	2021		Review		
Bikse et al.	2022		Review		
Chan et al.	2021	China	Research	Quantitative	4,424 students from Hong Kong Polytechnic University
Cheng et al.	2022		Review		
Chigbu & Nekhwevha	2022	South Africa	Research	Quantitative	335 university students
Gilbert et al.	2022	Australia	Research	Mixed method	94 students in Project Management
Graham	2017		Review	Content analysis	
Islam	2022	Bangladesh	Research	Quantitative	361 undergraduate and graduate-level students
Kenayathulla et al.	2019	Malaysia	Research	Quantitative	841 hospitality students
Manan et al.	2021	Pakistan	Research	Mixed method	426 students in a survey 25 students in interviews
Mohamed Khodeir & Nessim	2020	Egypt	Research	Mixed method	100 fresh graduates and senior students 15 professionals and academicians
Moriña & Biagiotti	2022		Review		
Pappas et al.	2018	Greece	Research	Mixed method	1035 women
Pheko & Molefhe	2017	Botswana	Research	Qualitative	83 students enrolled in two Psychology courses
Ritchie et al.	2022	United Kingdom	Research	Secondary qualitative analysis	38 informants

2.2.1 Models of Employability

Knight and Yorke (2003) proposed a model called the USEM Model of Employability. The USEM model focuses on these aspects:

- i. **Understanding** (of subject matter and how organisations work);
- ii. **Skillful practices** (academic, employment, and life);
- iii. **Efficacy beliefs** (reflect the learner's notion of self, their self-belief, and the possibility for self-improvement); and
- iv. **Metacognition** (which complements efficacy, embraces self-awareness, and how to learn and do reflection. It encompasses knowledge of strategies for learning, thinking and problem-solving, and promotes lifelong learning).

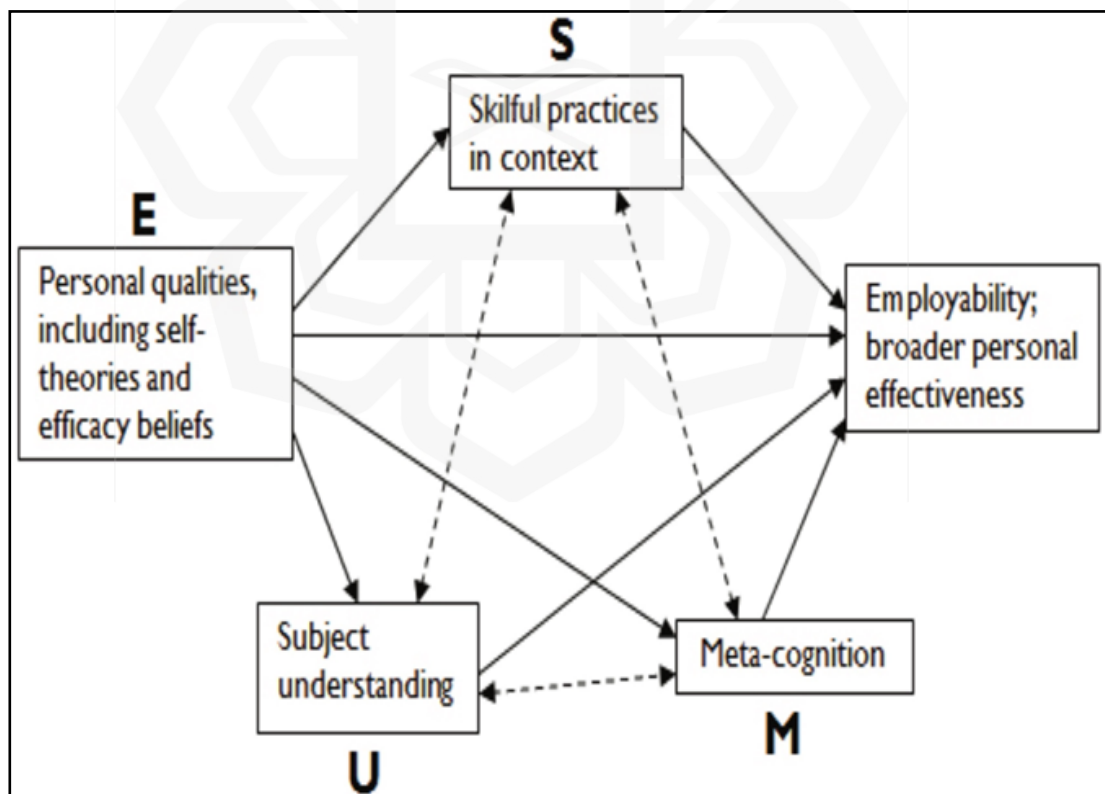


Figure 2.3 USEM Model (Knight & Yorke, 2003)

A different model was proposed by Dacre Pool and Sewell (2007) as they believe that USEM did not explain employability well, especially to those who are not experts in this field. The model is called the CareerEDGE Model of Graduate Employability. The model addresses five career aspects:

- i. **Career** development learning;
- ii. **E**xperience from work and life;
- iii. **D**egree (subject knowledge, understanding and skills);
- iv. **G**eneric skills;
- v. **E**mootional intelligence.

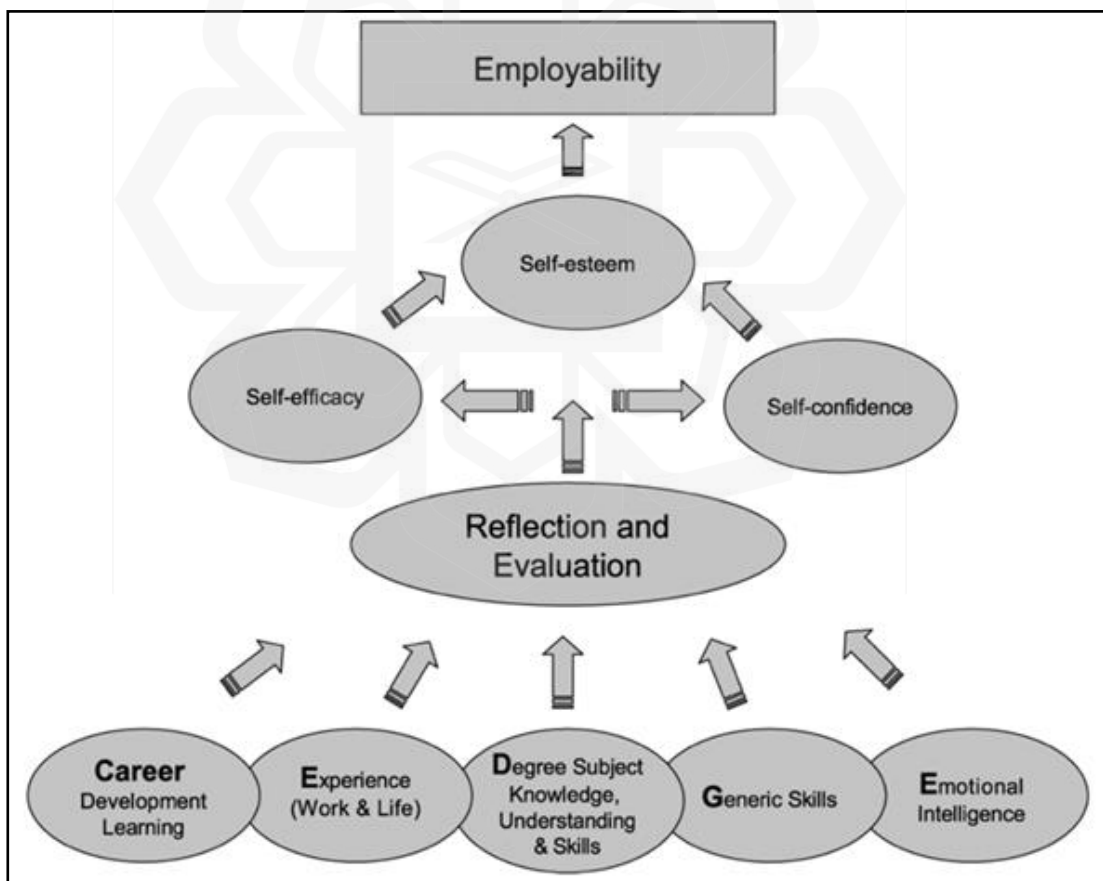


Figure 2.4 CareerEDGE Model of Graduate Employability (Dacre Pool & Sewell, 2007)

Bridgstock (2009) proposed a model that focuses on career management skills. She has a different view of graduate attributes for employability. According to her, the combination of career management skills and learners' knowledge will determine "which, to what extent, in what manner, when and where generic and discipline-specific skills are learned, displayed (e.g. in applying for a job) and used." (p. 36).

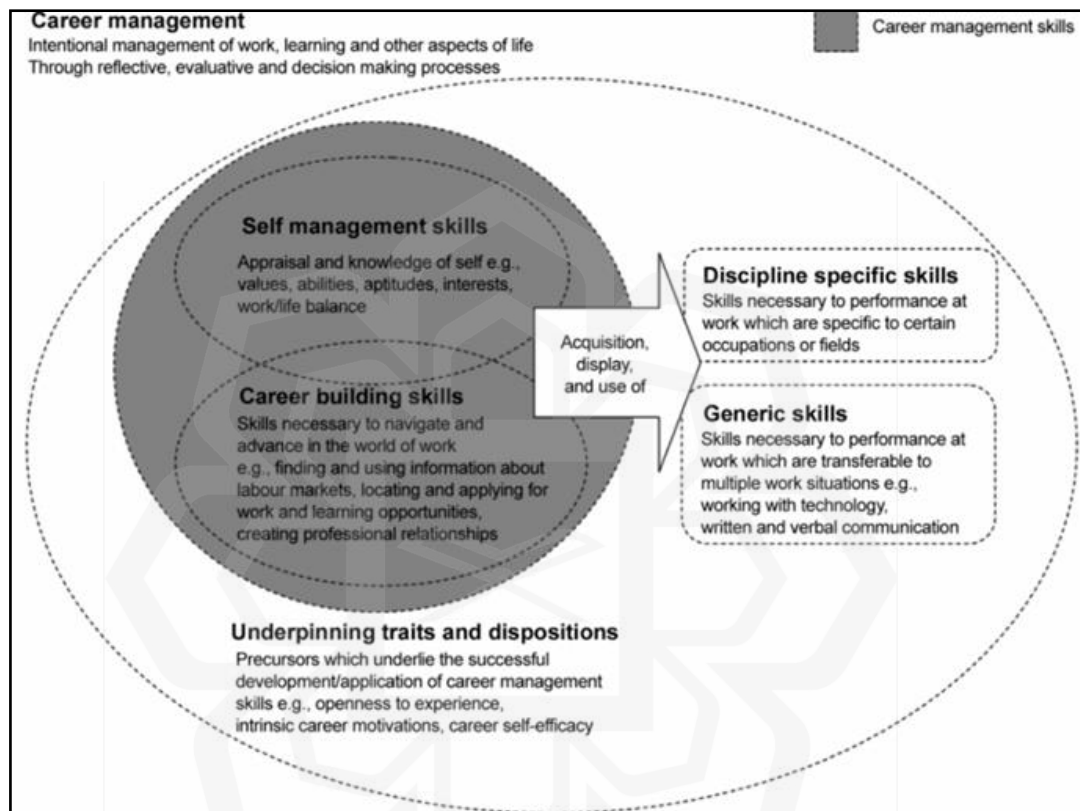


Figure 2.5 Bridgstock's Employability Model (2009)

In comparison, the Confederation of British Industry and the National Union of Students (CBI & NUS, 2011) discussed the significance of owning one's employability development as early as university level. The model looks at employability relevance and suggests practical strategies that learners could follow to improve employment chances. A few key aspects of employability are illustrated in the figure below:

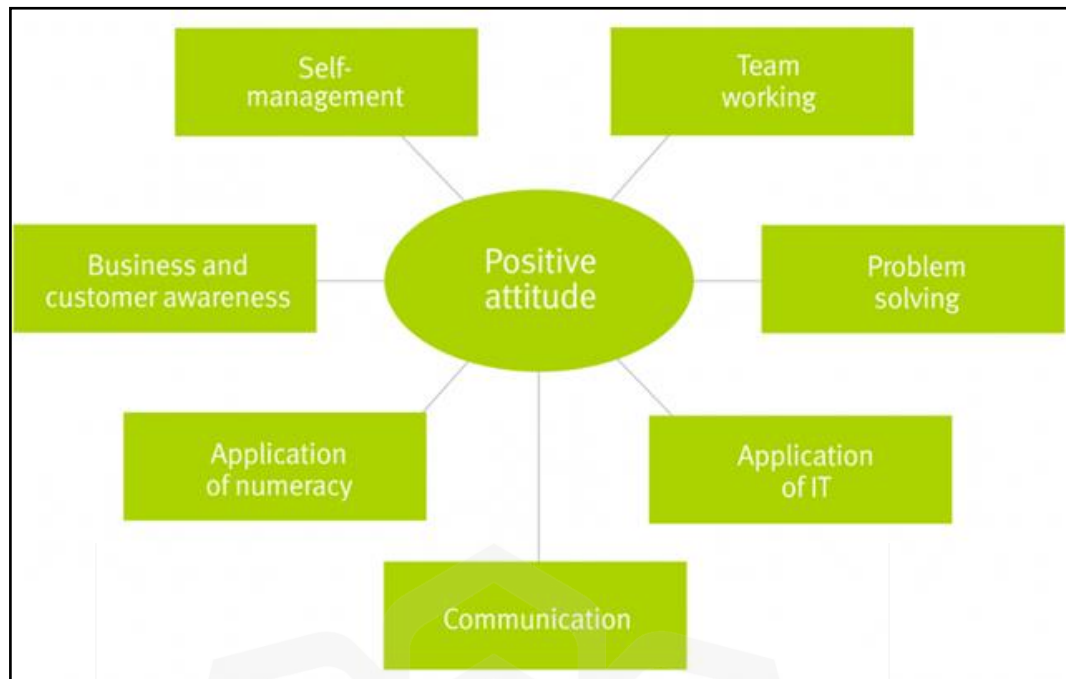


Figure 2.6 CBI & NUS' Employability Model (2011)

To a certain extent, all of the discussed employability models share one similarity. The similarity is in the importance of metacognition for learning sustainability and the need for graduates to acquire metacognitive strategies to allow them to take ownership of their learning sustainability which will later affect their employability.

2.3 APPLICATION OF METACOGNITIVE STRATEGIES

Planning

Studies reviewed have discussed the application of metacognitive strategies which occur in three stages (Ali & Yasmeen, 2019; Çakici, 2017; Khellab et al., 2022) The first stage is to do some planning before starting a teaching and learning process. Ali and Yasmeen (2019) investigated how teachers use metacognitive strategies in different learning phases. During the planning stage, the teachers spend some time creating concept maps or outlines before teaching sessions. At the same time, they

determine the learning objectives and learning resources that are suitable for the student's level.

In comparison, another study by Cer (2019) focuses on how metacognitive strategies in writing activities. The study shows that before writing, the students plan their writing by focusing on ideas and messages they want to convey. Then, students wrote a first draft of their essay.

Several studies emphasise the explicit teaching of how to apply metacognitive strategies in reading comprehension (Khellab et al., 2022; Rajasagaran & Ismail, 2022). During the planning stage, readers are encouraged to choose metacognitive reading strategies that work best for them (Çakici, 2017).

Cervin-Ellqvist et al. (2021) studied metacognitive awareness of learning strategies among engineering students. The findings indicate that students commonly review past exams as a metacognitive planning strategy to identify tasks and set goals before they start learning.

Meanwhile, Ghasemi et al. (2019) investigated the effects of metacognitive strategies on students' vocabulary acquisition. It was found that the participants were guided by teachers to set specific goals for mastering vocabulary from textbook units.

Studies have shown that metacognitive strategies are applied in problem-based learning (Heuzeroth & Budke, 2021; Lobczowski et al., 2021; Rivas et al., 2022). Heuzeroth and Budke (2021) examined metacognitive strategies' application in geography subject. Students were given a scenario with a geographical issue to solve. For the planning stage, the students develop an action plan aimed at activating their prior knowledge and comprehending the problem further. In another study, students were given real-world pharmacy problems and the students engaged in group discussions to identify, define and propose viable solutions.

Monitoring

The next stage is monitoring the learning progress through an ongoing evaluation of the learning strategy (Rivas et al., 2022). During this stage, teachers monitor students' learning process, provide feedback and remind them about timelines (Ali & Yasmeen, 2019).

In Cer's (2019) study, after writing the first draft, the students were taught to fully grasp the text, identify necessary changes, and recognise any language errors during the monitoring process.

In reading activities, monitoring is done through Problem Solving Strategies (PROB) which are techniques used by readers while dealing directly with text, such as adjusting reading speed, predicting meanings of unknown vocabulary, and re-reading for better understanding (Çakici, 2017). Support Strategies (SUP) assist readers in understanding a text, including using dictionaries, note-taking, and highlighting textual information (Çakici, 2017). Writing comments and asking questions while reading are also helpful to monitor students' comprehension (Khellab et al., 2022).

In Cervin-Ellqvist et al.'s (2021) study, after setting learning goals, the students exercise their skills by doing practice problems to monitor learning and assess their understanding of important concepts.

In problem-based learning, monitoring is done through reasoning within context to make tasks meaningful and promote active participation (Rivas et al., 2022). During this stage, students ensure all group members understand the problem and allocate tasks according to each member's strengths.

Evaluating

The third stage of metacognitive strategies is done through reflection. For instance, teachers evaluate the previous lesson on the good experience to be included and the bad experience to be improved in the next lesson (Ali & Yasmeen, 2019). In Cer's (2019) study, the students were informed about evaluating and revising their writing.

During this stage, they evaluate the quality of their writing, provide feedback on others' writing and revise accordingly (Cer, 2019).

In reading, students were guided to evaluate the reading strategy that they used by having inner monologues (Çakici, 2017). They ask themselves whether the strategy used is effective or not and how to improve in the future (Çakici, 2017; Khellab et al., 2022). Students were given ample time to discuss these reflective thoughts with their peers and instructor (Çakici, 2017; Khellab et al., 2022).

In Cervin-Ellqvist et al.'s (2021) study, reflection is conducted through summarising, self-checking and reflecting on the practice problems that they have completed earlier.

Similarly, self-evaluation is done in problem-based learning. The solution for real-world problems is presented to peers and students self-evaluate as well as provide feedback to each other (Heuzeroth & Budke, 2021; Lobczowski et al., 2021). They analyse their mistakes and discuss how to improve in the future (Rivas et al., 2022). This is done by referring to their report, checklist, learning log, and the instructor's role is to facilitate the discussion for this activity (Ghasemi et al., 2019; Rivas et al., 2022).

Metacognitive Training Strategies

Drigas et al. (2022) and Rivas et al. (2022) have conducted a review and it has been revealed that there are numerous strategies that can be trained to develop metacognitive skills. The method of loci is an ancient mnemonic strategy linking new information to previous knowledge, organising information and creating associations whereas the chunking technique involves organising separate pieces of information into a few meaningful groups. By doing so, learners can make the information clearer and easier to remember (Drigas et al., 2022).

Mind mapping helps in organising information and decision diagrams help in organising questions during different phases of learning (Drigas et al., 2022; Rivas et al., 2022). Self-testing or self-evaluation is done by evaluating learning and

performance through reflective questions guided by rubrics given by the instructor (Drigas et al., 2022). Self-evaluation helps learners supervise their knowledge level, performance and final learning product (Rivas et al., 2022). Including emotional content alongside the information being learned can aid in memory retention (Kajka & Kulik, 2021; Rivas et al., 2022). The brain structures responsible for memory processing are also engaged in emotion processing.

Kajka and Kulik (2021) investigated metacognitive strategies training on response inhibition among children with ADHD (attention deficit hyperactivity disorder). Response inhibition, also known as impulse control, refers to the capacity to stop oneself from engaging in actions that are unsuitable for a specific situation, or actions that disrupt goal-oriented behaviour. In the study, the children were guided to express their emotions through mind-mapping and the study shows that metacognitive strategies training has a positive effect on strengthening response inhibition (Kajka & Kulik, 2021). Multisensory learning or learning by incorporating more than one sense is helpful for memory retention and learning by teaching is a great technique which involves a conscious practice of retrieving and reorganizing previous knowledge to deliver the knowledge to other people (Rivas et al., 2022). Other metacognitive training strategies are not discussed here however, based on the studies reviewed, it has been widely proven that metacognitive training strategies benefit learners in terms of better learning outcomes, self-awareness, self-regulation, improved memory and overall academic success (Drigas et al., 2022; Kajka & Kulik, 2021; Rivas et al., 2022).

Metacognitive Strategies between Genders

Calafato (2020) investigated students' self-regulation and learning motivation in Scandinavia. In terms of metacognitive strategies application between genders, a notable gender difference indicates that female participants tend to employ metacognitive strategies to a greater extent than their male counterparts (Calafato, 2020).

Portfolio to foster Metacognitive Development

According to Mack et al. (2019), portfolios are used widely in medical schools and postgraduate medicine. Portfolios function as archives containing learning-related information that students have gathered over a period of time. Reflective portfolios primarily target the enhancement of reflective and metacognitive skills through outlining learning goals, recording learning experiences and self-evaluating performance. Portfolios are individually unique and personalized and they can be documented in either paper or online format, also known as e-portfolios. There are many template-based options available for e-portfolios and some institutions prefer this format for its advantages (Mack et al., 2019).

The table below summarises the studies for the application of metacognitive strategies.

Table 2.5 Characteristics of Included Studies for Application of Metacognitive Strategies

Authors	Year	Setting	Type of Research	Method	Sample/Tools
Ali & Yasmeen	2019	Pakistan	Research	Qualitative phenomenological study	10 medical teachers
Çakıcı	2017		Review		
Calafato	2020	Scandinavia	Research	Mixed method	96 students learning Arabic
Cer	2019	Turkey	Research	Mixed method experimental research	44 pupils at a private secondary school
Cervin-Ellqvist et al.	2021	Europe, EEA and Switzerland	Research	Mixed method	416 engineering students
Drigas et al.	2022		Review		
Ghasemi et al.	2019	Iran	Research	Mixed method	51 EFL learners studying English at an aeronautical college

Heuzeroth & Budke	2021	Germany	Research	quasi-experimental	49 students in Geography class
Kajka & Kulik	2021	Poland	Research	Experimental	45 school children with ADHD
Khellab et al.	2022	Libya	Research	Experimental	60 students from the Faculty of Engineering Technology
Lobczowski et al.	2021	USA	Research	Qualitative case study	29 pharmacy students at a university in the south-east
Luzzatto et al.	2018		Review		
Mack et al.	2019		Review		
Rajasagaran & Ismail	2022		Review		
Rivas et al.	2022	Spain	Research	quasi-experimental	89 students in a first-year psychology course

2.4 LEARNING SUSTAINABILITY

The concept of learning sustainability is derived from the Sustainable Development Goals (SDGs) that were created in 2015 by the United Nations. United Nations defines ‘sustainability’ as a development made by the nation to achieve current needs without compromising the needs of future generations (United Nations, 2015). SDG is a blueprint that aims to achieve peace, sustainability and other goals that will bring global change for the greater good. There are 17 goals altogether which are planned to be participated and completed by countries all over the world by the year 2030.

The figure below shows the list of the SDGs:



Figure 2.7 Sustainable Development Goals (United Nations, 2015)

The 4th SDG known as Quality Education is crucial in ensuring inclusivity and equal access to quality education as well as lifelong learning opportunities. With this in mind, Woolis (2021) developed a framework called the Sustainable Learning Framework to help all parties to achieve the 4th SDG objective. According to her, ‘sustainable learning’ is defined as a paradigm of educational methods that support a healthy learning ecosystem (Woolis, 2021). Learning sustainability emphasises knowledge being shared and co-created in a community. There are five main disciplines included in the framework which can be seen in the next figure.

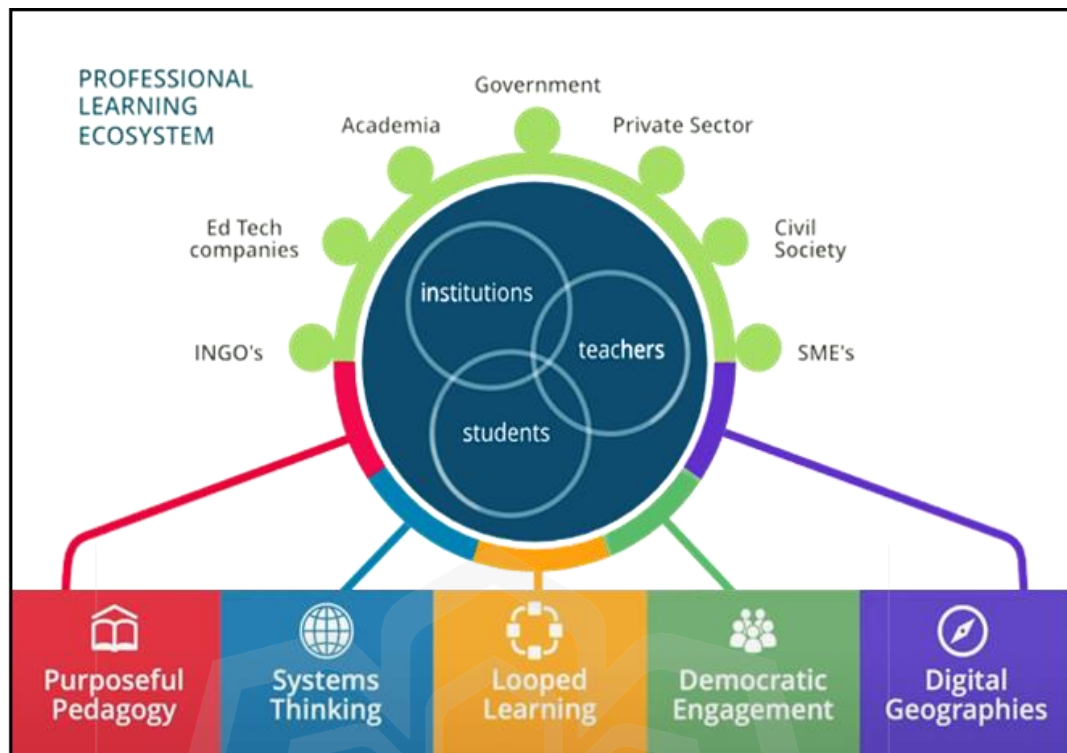


Figure 2.8 Sustainable Learning Framework (Woolis, 2021)

The disciplines are combined creatively and regardless of where one is within the education environment, the framework will assist in ensuring the long-term success of learning sustainability. The first discipline is called Purposeful Pedagogy, in which authentic assessments and evidence-informed methods are used to design learning. Co-creation and co-learning are parts and parcels of this discipline and learning is designed to be multi-modal for maximum accessibility.

The second discipline is Systems Thinking, where learning providers identify and combine relationships, patterns, and interdependencies between teaching and learning while utilising networks and communities to develop courses, policies, and programmes that are responsive to these patterns. Communities of practice and communities of inquiry will take part in addressing the challenges in implementing the framework.

Thirdly, Looped Learning whereby multiple feedback methods are used by educators and learning systems to enhance, reframe, and modify practice and policy in education. Given that reflection lies at the core of learning sustainability, Woolis (2021) regards this as one of the most important components.

The fourth is Democratic Engagement, which guarantees that everyone has access to the resources, safety, and support they require to be active learners. It also ensures that everyone has access to peer-to-peer learning and teachers' facilitation in shaping their learning experience. Open education resources are made available to encourage independent and sustainable lifelong learning worldwide.

Last but not least, Digital Geographies offer open systems and platforms for successful online teaching and learning. Innovations like platforms, apps and plugins are co-created among different stakeholders to customise learning sustainability through technology. Learning pathways are also customisable for learners and easier for them to connect with other learners and access learning resources.

Institutions, teachers and students are the individuals on the ground working to ensure that education is affordable, fair, and of a high standard for nations worldwide. Stakeholders which include the government, academia and education technology companies, though not directly, will play a huge role in realising the objective of the 4th SDG through this framework (Woolis, 2021).

2.4.1 Challenges in Learning sustainability

Mental Health Barriers

Many challenges arise in the pursuit of achieving learning sustainability and the challenges, including mental health barriers. Mental health is crucial for students to achieve learning sustainability. Studies have been conducted investigating students' mental health and motivation during online learning and remote learning (Chaves, 2021; Gu et al., 2022). The results indicate that students' moods are ruined and motivation is affected due to an unhealthy state of mind and zero face-to-face interaction during the COVID-19 pandemic (Chaves, 2021; Gu et al., 2022).

In addition, quarantines and online classes led to mental pressure among students (Laar et al., 2021). It was reported that participants were having issues dealing with mental health deterioration and requiring counselling services or strategies to cope with the anxiety and stress faced by the students (Jaradat & Ajlouni, 2021).

Time Barriers

Aside from mental health barriers, time barriers play a role in achieving learning sustainability. Jaradat and Ajlouni (2021) investigated the challenges faced by undergraduate students in online learning during the pandemic. It was reported that 57.3% of participants were facing the challenge of managing their time due to their poor time management skills. The study suggests that training sessions for time management skills are provided to the students to help overcome this issue (Jaradat & Ajlouni, 2021). Similarly, another study indicates that students face the issue of managing time and they lack the skills to study independently. The students fail to keep up with online class schedules as well as the submission dates for their assignments (Dwi et al., 2020).

In another study that investigated graduate students taking a Master's degree in a virtual school, it was reported that the students had to juggle between working and studying (Sarvestani et al., 2019). There is some overlapping between their class schedules and working hours, which makes it challenging for the students to manage time and participate effectively.

Time barriers also affect the learning process needed to achieve learning sustainability. Case studies were conducted on three companies to investigate organisation learning practices (Battistella et al., 2020). It was found that the companies mostly focus on corporate training and less on reflective learning at the individual level. It was added that reflective learning is not emphasised due to time constraints (Battistella et al., 2020).

Communication barriers

Communication barriers also affect learning sustainability. A data analysis software was used to retrieve and analyse Twitter tweets from universities across Saudi Arabia (Almossa, 2021). The finding shows that students expressed negative experiences communicating with their professors. The students felt clueless and directionless when the professors ignored their queries about their carry marks (Almossa, 2021). Similarly, students claimed that they had to spend more time completing their tasks due to the lack of support and unclear instructions from their instructors (Xia et al., 2022).

Learning face-to-face is crucial for certain students and online lectures have led to poor communication with their peers (Laar et al., 2021). The students face the challenge of discussing and studying with their peers effectively during online classes compared to on-campus classes (Laar et al., 2021).

Meanwhile, Lee et al. (2019) investigated issues that arise in the lifelong learning process in Malaysia. The result indicates that there is poor participation during online classes. Several key factors were identified which include work commitment and access problems.

Technological barriers

Studies have shown that technological barriers are affecting students to achieve learning sustainability. Poor internet connection is one of the technological barriers that hinder students' learning sustainability (Chaves, 2021; Dwi et al., 2020; Jaradat & Ajlouni, 2021; Sarvestani et al., 2019). Students reported low internet quota and having to spend money to renew it (Dwi et al., 2020). The institution's low bandwidth results in a slow internet connection which also affects the students to achieve learning sustainability (Sarvestani et al., 2019). Students also claimed that the e-learning platform services are slow due to unstable internet connection and they suggest the institution enhance the faculty's technological infrastructure (Jaradat & Ajlouni, 2021).

Besides unstable internet connection, the lack of advanced devices was reported as the factor that hindered students' learning sustainability. The students' devices had software and hardware issues which are not suitable to run virtual education (Sarvestani et al., 2019). Some students claimed that they have little to no access to computers particularly in rural areas (Mhandu et al., 2021).

Lack of exposure to technological skills also affects learning sustainability. Students who never had access to computers and devices before tertiary education face the challenge of using them during online learning (Mhandu et al., 2021). Some students face challenges in downloading, installing, logging in and file sharing which indicate poor technological skills among them (Xia et al., 2022).

The table below shows the types of barriers faced to achieve learning sustainability.

Table 2.6 Types of Barriers to Learning sustainability

Types	Barriers
Mental Health	Ruined mood Mental pressure Lack of motivation
Time	Lack of time management skills Juggling between learning and working Lack of time for reflective learning
Communication	Lack of support by instructors Poor communication with peers Poor participation by learners
Technological	Poor Internet connection Inadequate device Lack of exposure to technological skills

The table below summarises the studies for Challenges in Learning sustainability.

Table 2.7 Characteristics of Included Studies for Challenges in Learning sustainability

Authors	Year	Setting	Type of Research	Method	Sample/Tools
Almossa	2021	Saudi Arabia	Research	Mixed method	219,000 tweets
Battistella et al.	2020	Italy	Research	multiple-case study approach	3 case companies
Chaves	2021	Philippines	Research	Survey	53 junior management students
Dwi et al.	2020	Indonesia	Research	Survey	85 students in the English Language Education Department of Pekalongan University
Gu et.al	2022	China	Research	quantitative cross-sectional study	340 undergraduate students enrolled in the colleges
Jaradat & Ajlouni	2021	Jordan	Research	Survey	398 undergraduate students enrolled at the School of Educational Science at the University of Jordan
Laar et al.	2021	China	Research	Qualitative phenomenological study	56 university students enrolled in physical education programs
Lee et al.	2019		Review		
Mhandu et al.	2021	South Africa	Research	Ethnographic fieldwork	25 rural-based students 3 staff responsible for e-learning
Sarvestani et al.	2019	Iran	Research	Qualitative phenomenological study	10 students
Xia et al.	2022	China	Research	Mixed method	230 students.

2.5 THEORETICAL FRAMEWORK

Even though metacognitive aspects have been identified for employability, how metacognition can be nurtured or acquired by learners was not addressed in the models. Metacognition is not a new concept and it has evolved over the last 25 years. With the addition of related studies, there are several ways of defining metacognition.

The term's originator and creator, John Flavell, claims that 'metacognition' is made up of metacognitive knowledge and metacognitive experiences also known as regulation (Flavell, 1979). It is a body of knowledge that examines an individual's cognitive processes, followed by active supervision and control of these processes to help him/her reach cognitive objectives (Flavell, 1985). In comparison, Schoenfeld (2013), metacognition has a few definitions. It can either be defined as the science of one's thought process or self-regulation that one does when solving a problem. The mental processes involved include problem-solving, gaining knowledge, thinking and comprehending. Metacognition also allows learners to achieve learning sustainability when they practice the skills of self-directed learning gained from metacognitive strategies.

Meanwhile, Ann Brown defines 'metacognition' as an "understanding of knowledge, an understanding that can be reflected in either effective use or overt description of the knowledge in question" (Brown, 1987, p. 65). According to this perspective, a learner is regarded to grasp a certain cognitive activity if they can use it effectively and discuss how to utilise it.

Brown (1987) introduces the Model of Metacognition which divides metacognition into two components: 1. Knowledge of Cognition and 2. Regulation of Cognition. Knowledge of Cognition means the knowledge that learners have regarding their cognitive process. This helps learners allocate resources and strategies for learning effectively. It is divided into three categories which are declarative, procedural and conditional knowledge (refer the next figure).

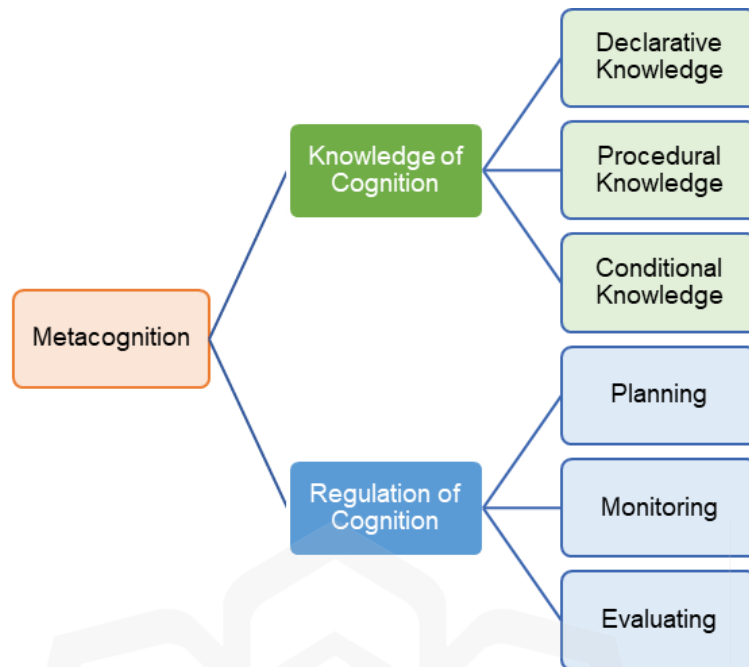


Figure 2.9 Brown's (1987) Model of Metacognition

Declarative knowledge is the component that illustrates the learners' understanding of their learning process. For instance, Learner B may be aware that he or she does not learn effectively by simply reading articles. Learners who possess declarative knowledge are more likely to use it in their learning process.

Procedural knowledge is the learners' understanding of learning strategies that are impactful to them. If Learner B finds that it is challenging to learn by reading articles, he or she may realise that to address the issue, another learning technique should be used. The learner could watch a video and discuss with peers about the articles. Alternatives in learning techniques will help in achieving a successful learning experience.

The third category is conditional knowledge which discusses when and why to use the learning techniques that learners acquire. Knowing the learning techniques alone is not enough until they understand how to use them. A learner recognising the importance of taking notes in a lesson is an example of this knowledge. Following the lesson, the student would edit the notes to make the material more understandable before reviewing the textbook.

Brown (1987) introduces the second component called Regulation of Cognition which consists of “metacognitive activities that help regulate and control one's thinking and learning” (Nordin, 2016, p.143). In other words, this regulation is also known as ‘metacognitive strategies’ which will be one of the main variables in this study. This component is divided into three categories which are planning, monitoring and evaluating.

Planning is conducted before learning. Learners will pick relevant cognitive strategies and resources. As an example, learners may set a time limit and scan the summary before reading the whole chapter. By giving themselves enough reading time and skimming the summary for key ideas, the learners are taking charge of the learning situation.

Monitoring deals with the learners’ knowledge of their learning performance during the learning process (Brown, 1987). While reading the chapter, learners often ask themselves whether they comprehend it. They self-check whether they can identify the author’s main ideas as they go through the process.

Lastly, evaluating means the learning is evaluated by looking at how well a strategy is in accomplishing the objectives. Learners will assess their learning progress by reviewing their learning objectives. They will take control of their learning by formulating a new strategy if their objectives are not fulfilled.

In light of the current study, the research will focus on the Regulation of Cognition, the second component of Brown’s Model of Metacognition as the theoretical framework to be used. The diagram of the theoretical framework is illustrated in the following figure.

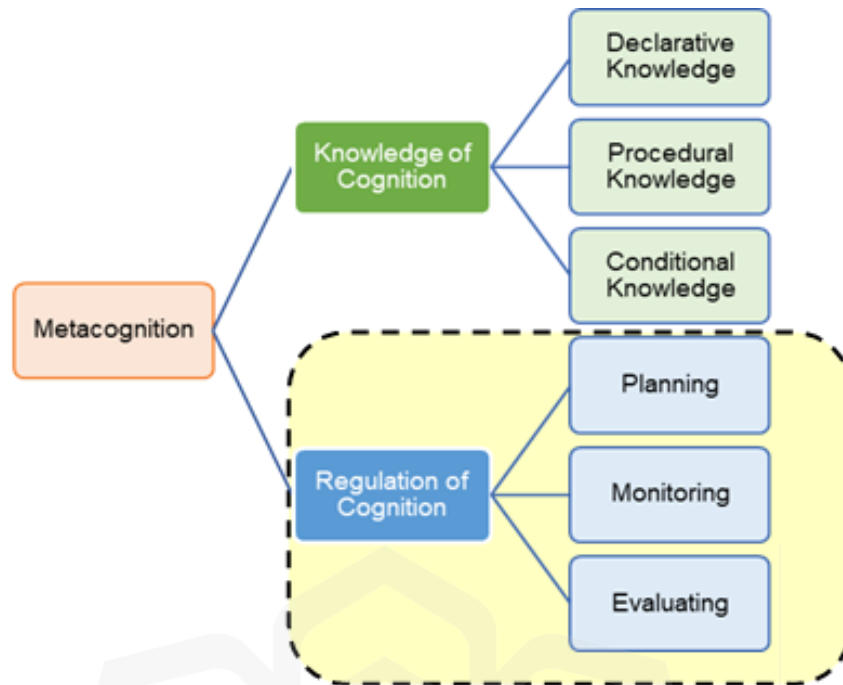


Figure 2.10 Theoretical Framework of This Study

2.6 CONCEPTUAL FRAMEWORK

Based on previous studies, a conceptual framework is illustrated to develop a metacognitive strategies framework in enhancing Malaysian graduate employability and learning sustainability through Education 4.0 tools.

Based on previous studies, a conceptual framework is illustrated to develop a metacognitive strategies framework in enhancing Malaysian graduate employability and learning sustainability through Education 4.0 tools.

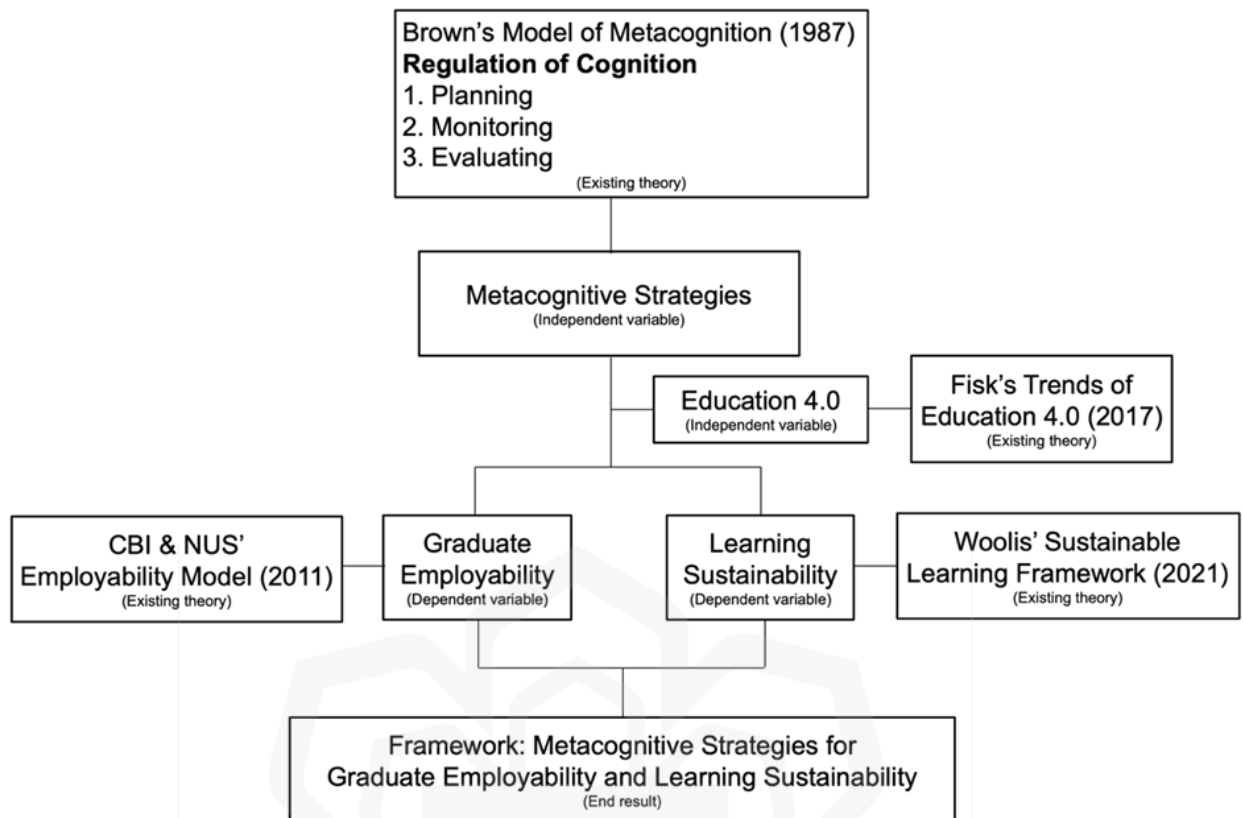


Figure 2.11 Conceptual Framework of This Study

The conceptual framework was designed parallel with the aim of this study which is to develop a metacognitive strategies framework for graduate employability and learning sustainability through Education 4.0. Brown's Model of Metacognition (1987). Regulation of Cognition and Fisk's Trends of Education 4.0 (2017) served as a guide to investigating the impacts of metacognitive strategies through Education 4.0 as independent variables on the dependent variables, which are graduate employability and learning sustainability. CBI and NUS' Employability Model (2011) and Woolis' Learning sustainability Framework (2021) were used to frame the analysis of the research findings. These four existing theories enabled the researcher to be consistent, objective and focused throughout the research process starting from the data collection stage, and data analysis stage up until the final write-up of this thesis. The end result of this study was the development of a framework titled Metacognitive Strategies for Graduate Employability and Learning Sustainability which will be discussed in detail in the upcoming chapter.

Despite the pieces of literature reviewed, most of the studies were mainly focused on graduate employability and learning sustainability which majority of them were regarded as two separate research fields (Albina & Sumagaysay, 2020; Ali & Yasmeen, 2019; Heuzeroth & Budke, 2021; Pheko & Molefhe, 2017; Rivas et al., 2022; Xia et al., 2022). However, there is lacking in the number of studies conducted on developing a metacognitive strategies framework for learning sustainability in enhancing graduate employability through Education 4.0 among Malaysian higher education learners. Therefore, this study is conducted with the objective to fill the gap.

The development of both the instrument and framework from this study adds value to the existing body of knowledge in terms of enhancing graduate employability and learning sustainability through the integration of metacognitive strategies and Education 4.0. Furthermore, the research findings are significant to stakeholders like students, institutions and industries to make necessary action plans to narrow the issue of the skillset gap that currently exists.

2.7 SUMMARY

Previous pieces of literature on this phenomenon are reviewed in a few sections on the study variables namely Education 4.0, Challenges in Employability, Application of Metacognitive Strategies and Learning sustainability. Lastly, the theoretical and conceptual frameworks of this study were included at the end of this chapter.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This study combined both qualitative and quantitative methods, also known as mixed methods. According to Creswell and Clark (2018), there are three major designs of mixed methods which are Explanatory sequential design, Exploratory sequential design and Convergent design.

3.2 RESEARCH DESIGN

In this study, Exploratory sequential design is chosen to fulfil the “need to explore first before administering instruments” (Creswell & Clark, 2018, p. 48). Mixed methods are suitable in this situation as one data source alone might not be sufficient (Creswell & Clark, 2018). In exploratory sequential design, data collection was conducted through the qualitative method first before the quantitative method. In this study, interviews have been conducted to answer the first and second research questions. The findings from the interviews were used to construct the items in the questionnaire that was used in the quantitative method. The quantitative data collection has answered the third research question. Two rounds of questionnaires were distributed to 42 experts in total. After each round, the Fuzzy Delphi Method (FDM) was used to analyse the findings of the quantitative data collection. After the first round of FDM, the questionnaire items were refined and edited for the second round of FDM. The findings of the second round of FDM were applied in the development of a metacognitive strategies framework for graduate employability and learning sustainability.

The figure on the next page shows the Exploratory Sequential Design that was applied in this study.

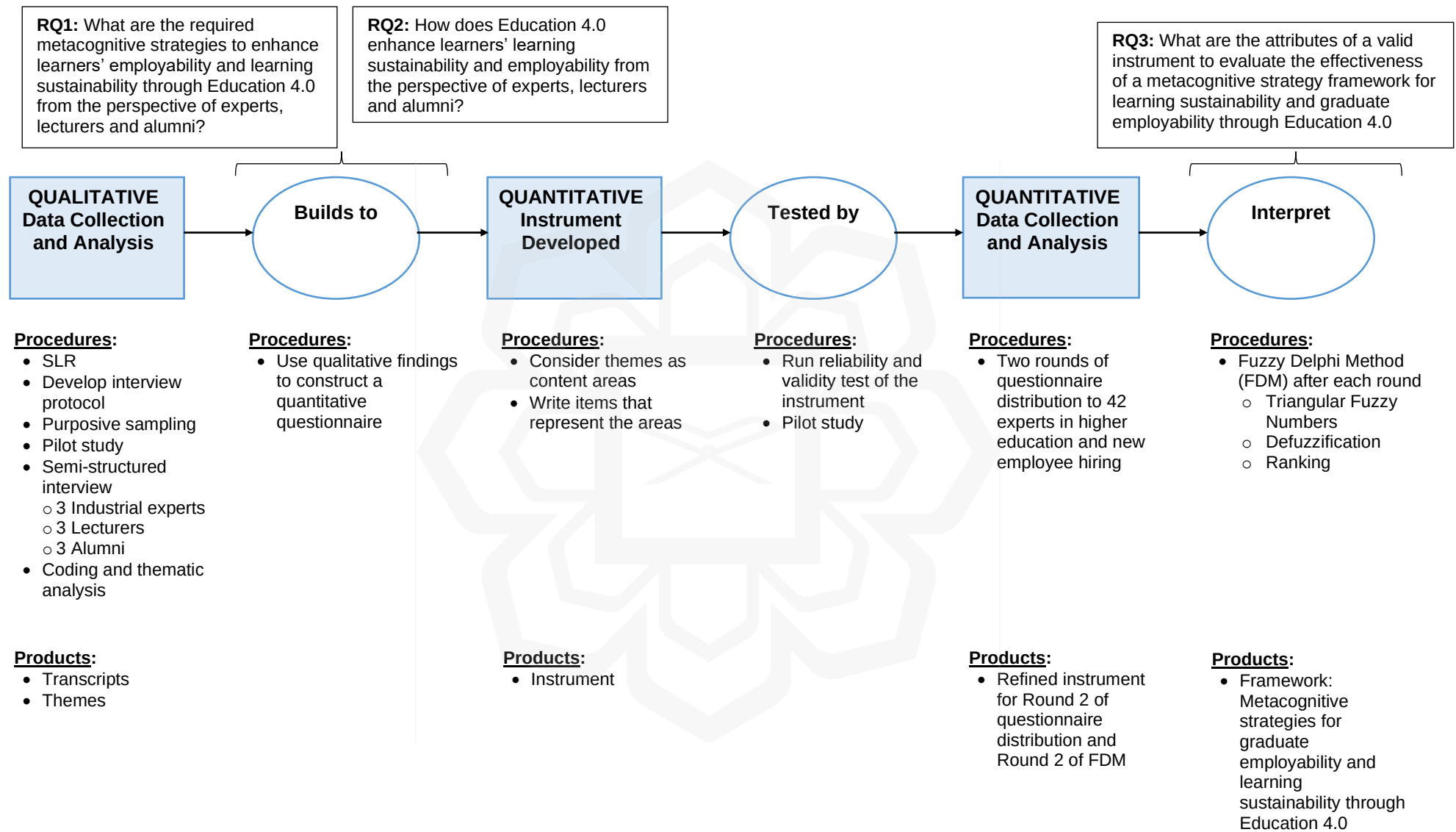


Figure 3.1 Exploratory Sequential Design of the Study (adapted from (Creswell and Clark, 2018, p.156)

The flow chart of the research design can be referred to in the figure below:

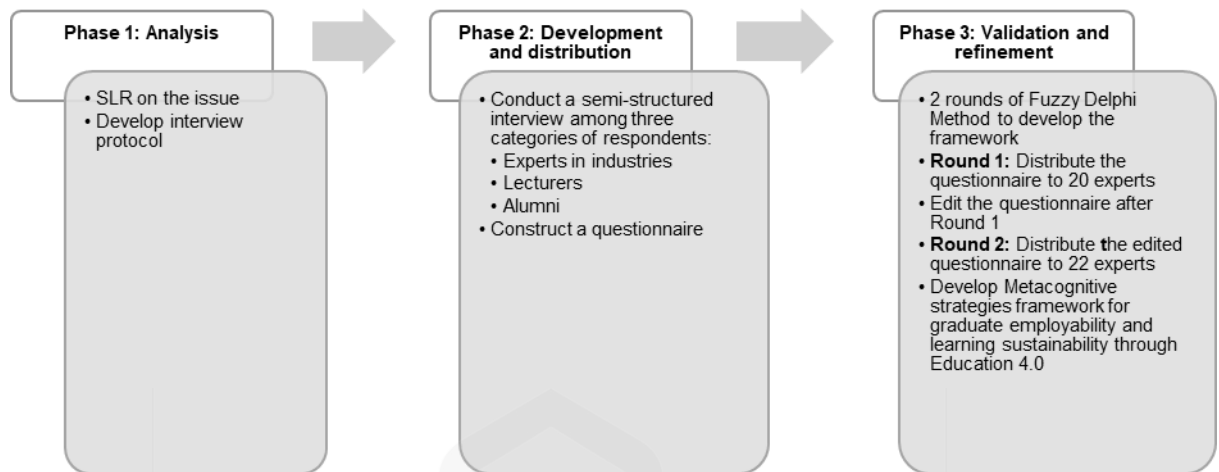


Figure 3.2 Flow Chart of Research Design

3.3 PHASE 1: ANALYSIS

A systematic literature review (SLR) was conducted to examine learners' problems in developing metacognitive strategies for learning sustainability toward employability. According to Gough et al. (2012), SLR is "a review of the research literature using systematic and explicit accountable methods" (p. 5). SLR is selected as the method during this phase because it helps to provide a background for researchers to plan new research activities (Kitchenham & Charters, 2007). SLR objectively synthesises previous studies. It involves a search strategy that is thorough and clear as researchers must report everything including research that does not support their hypothesis (Kitchenham & Charters, 2007).

The researcher carried out SLR following the recommendation of Cooper (1988). The synthesis of the literature involves several steps starting with formulating the research question, collecting data, evaluating data, analysing and interpreting data, and presenting and organising the results. The researcher formulated four research questions to begin the SLR based on the PICO framework (UTICA University, 2023). PICO is a framework for developing research questions for a qualitative study. 'P'

stands for problem or population, ‘I’ stands for research interest or phenomenon and ‘Co’ stands for the context or research setting (UTICA University, 2023). The four research questions developed for the SLR are: 1. What are the challenges that graduates face in employability? 2. What are the challenges that students face to sustain learning? 3. How do learners apply metacognitive strategies? and 4. What are the benefits of Education 4.0?

The goal of data collection was to locate and examine studies and journal articles that discuss the challenges in graduate employability and learning sustainability as well as the metacognitive strategies and Education 4.0 benefits on graduate employability and learning sustainability. The search was conducted in December 2022 with a specific strategy. The SLR was conducted following the flow of the updated PRISMA, which is a short form for Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Transparent and Concise Reporting Method of the SLR process (Page et al., 2021). Following PRISMA, identification is done first. During the identification process, keywords were used in searching the studies. The keywords used were separated according to the research questions as follows:

Table 3.1 Keywords used in SLR search

Research Question	Keywords Used
RQ1	“employability” OR “graduate employability” AND “challenges”
RQ2	“learning sustainability” OR “sustainable learning” OR “lifelong learning” OR “quality learning” AND “challenges”
RQ3	“metacognitive strategies” OR “metacognition” AND “learners” OR “students”
RQ4	“Education 4.0” AND “benefits” OR “advantages” OR “impacts” OR “effects”

The SLR was carried out using databases such as Sage Journals, ScienceDirect, PubMed, DOAJ, Emerald Insight and Google Scholar.

After the first initial results, before the screening process, the researcher utilised the ‘Advanced search’ feature to filter the records based on several inclusion criteria. Only scholarly articles that are in the English language, published from 2017 to 2022 and with full text available were included. The inclusion and exclusion criteria are illustrated in the table below.

Table 3.2 Inclusion and Exclusion Criteria

Include	Exclude
Only research and review articles	Articles that do not have empirical results. Book chapters and papers from conferences or workshops
Date from 2017 to 2022	Articles dated before 2017
Full text is available	Full text is not available
Published in the English language	Published in other languages
Databases: Sage Journals, ScienceDirect, PubMed, DOAJ, Emerald Insight and Google Scholar	Other databases that are not mentioned

Then, during the screening process, the researcher conducted a title and abstract screening to see whether the articles were related to the research questions or not. After title and abstract screening, the researcher downloaded the articles. Then, the full-text articles were screened for eligibility by looking at the context, method and results of the studies. Based on this, 145 records were excluded, resulting in 49 articles included. Among these articles, 17 were found to focus on challenges in graduate employability, 11 articles on challenges in learning sustainability, 15 on metacognitive strategies application and 6 on the benefits of Education 4.0. The rest of the articles were excluded as they were not relevant to answer the research questions. The SLR process is illustrated in the figure below.

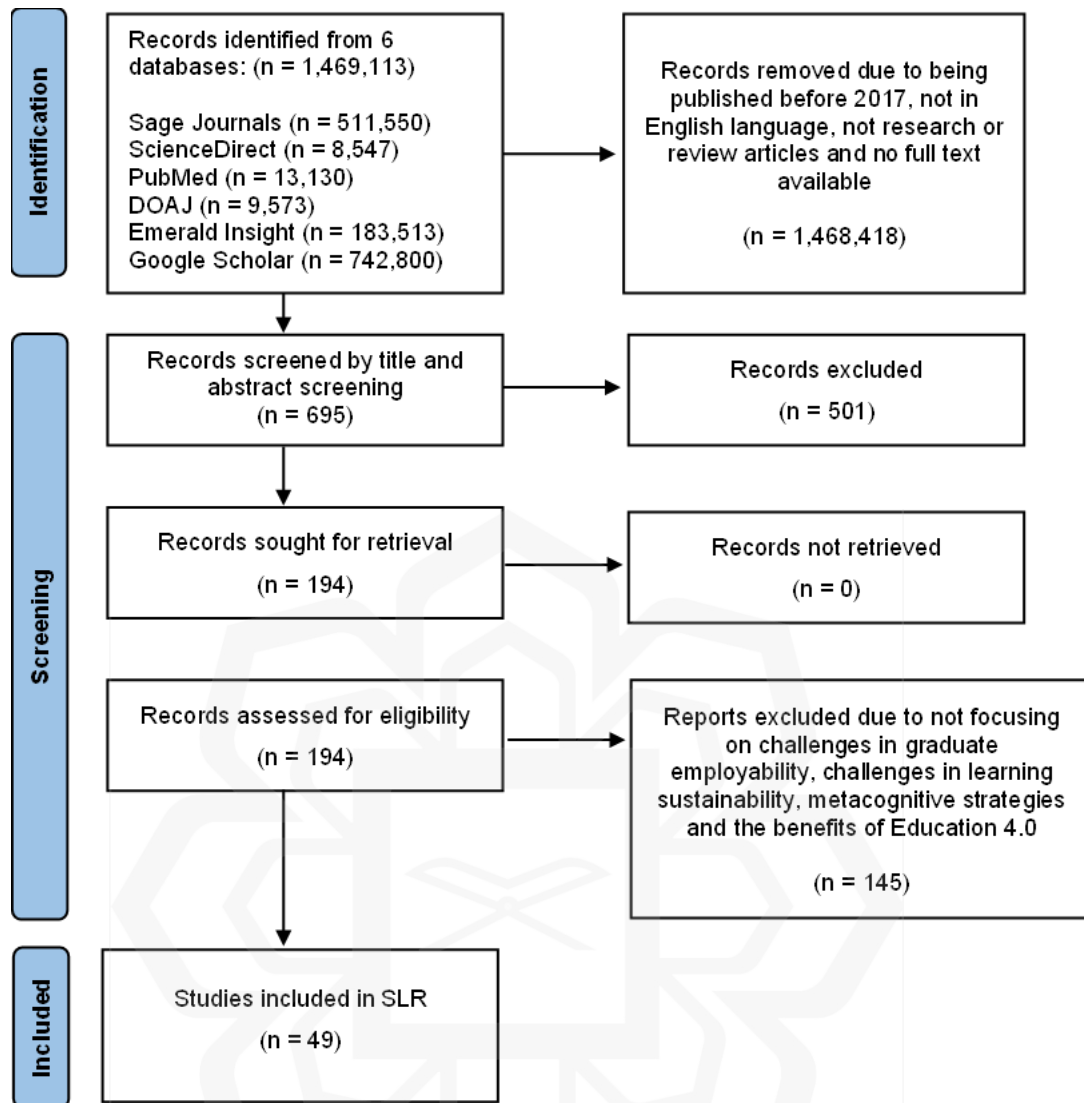


Figure 3.3 Flow diagram of the SLR process (adapted from PRISMA 2020 flow diagram for new systematic reviews by Page et al. (2021))

The themes found in the SLR were discussed further in Chapter Two of this study. Based on the SLR, the researcher has constructed the interview protocol which was used during the interview with the participants in Phase 2 later. This is to gain practitioners' insights on the development of a metacognitive strategies framework for learning sustainability and employability.

Interview Protocol

The interview protocol also known as interview questions was formulated based on the three research questions. These questions have been finalised based on the feedback given by experts in Instructional Technology and qualitative methods.

The interview questions are formulated in a way that would answer the research questions. Across the three respondent categories, several questions are similar whereas several questions are worded differently based on each category. There were 9 interview questions to answer the first research question: What are the required metacognitive strategies to enhance learners' employability and learning sustainability through Education 4.0 from the perspective of experts, lecturers and alumni? For the second research question of how Education 4.0 enhance learners' learning sustainability and employability from the perspective of experts, lecturers and alumni, there were 7 interview questions formulated for the university alumni, 5 interview questions for the lecturers and 6 interview questions for the experts coming from the industries. The third research question was not included as it was intended to be answered through the quantitative method in this study. The interview protocol and how it relates to the research questions can be seen in table below.

Table 3.3 Interview Protocol

Respondent Category	University Alumni	Lecturers	Industrial Experts
Research Question	Interview Questions		
1.What are the required metacognitive strategies to enhance learners' employability and learning sustainability through Education 4.0 from the perspective of experts, lecturers and alumni?	1.How does your Bachelor's degree prepare you for employment? 2.What can be done by the university and lecturers for better learning sustainability and employment? 3.What do you think are some of the attributes and competencies that employers consider important among graduates? 4.Out of the attributes mentioned earlier, rank them from the most to the least important for employability and learning sustainability. Why do you arrange in that order? 5.Why do you think these attributes are important for employability and learning sustainability? Kindly	1.How does the degree prepare your graduated students for employment? 2.How well are you preparing your students for the job market? What else could be done to enhance the chances of being employed? 3.What skills have your students gained during their degree that make them attractive to employers in their field? 4.What do you think are some of the attributes and competencies that employers consider important among your graduates? 5.Out of the attributes mentioned earlier, rank them from the most to the least important for employability and learning sustainability. Why do you arrange in that order?	1. How do you decide whether a graduate is employable or not? Could you share your hiring process for new employees? 2. What do you think are some of the attributes and competencies that you consider important among graduates? 3. Out of the attributes mentioned earlier, rank them from the most to the least important for employability and learning sustainability. Why do you arrange in that order? 4. Why do you think these attributes are important for employability and learning sustainability? Kindly elaborate. 5. Out of the candidates that you have interviewed, what did they showcase that made them stand

	elaborate. 6.What are the strategies that you think graduates should develop and practice earlier during academic years to increase employability and learning sustainability? 7.What have you learnt in the industry currently that you wished you had learnt earlier during university? 8.To what extent does your degree help you in the current industry? If not, how do you upskill yourself to match the industry's expectations? 9.Do you have a lecturer in mind who taught you something really valuable, that impacted your employability? What was the knowledge taught that you wish this knowledge should be taught in universities so everyone will be highly employable?	6.Why do you think these attributes are important for employability and learning sustainability? Kindly elaborate. 7.What are the strategies that you think graduates should practice to enhance the attributes mentioned, particularly through Education 4.0? 8.What are the skills that you are teaching your students to help them learn better? 9.Throughout the years you've been teaching, have you ever predicted students who will stand out and will be highly employable in the future? What made you predict that? Do they showcase skills or evidence that made you predict this? How are they now in their career?	out from the rest? Can you share an example of skills or evidence? 6. Did the graduates use Education 4.0 tools like e-portfolio, video resume, e-certificates, etc.? Did the tools help them with employability? 7. What are the strategies that you think graduates should practice to enhance the attributes mentioned, particularly through Education 4.0? 8. For employment opportunities, does it matter which university the graduates are from and why? 9. What are the skillsets that you want to see in graduates' e-portfolio?
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2. How does Education 4.0 enhance learners' learning sustainability and employability from the perspective of experts, lecturers and alumni?	1. What skills have you gained during your degree that makes you attractive to employers in your field? 2. How do you package yourself that influences employer(s) to hire you? 3. What are some Education 4.0 tools that you are using for graduate employability and learning sustainability? 4. How are the Education 4.0 tools above being used for graduate employability and learning sustainability? 5. What are the advantages and disadvantages of each Education 4.0 tool stated earlier for graduate employability? 6. What are the advantages and disadvantages of each Education 4.0 tool stated earlier for learning sustainability?	1. What are some Education 4.0 tools that your students are using for graduate employability and learning sustainability? 2. How are the Education 4.0 tools above being used for graduate employability and learning sustainability? 3. What are the advantages and disadvantages of each Education 4.0 tool stated earlier for graduate employability? 4. What are the advantages and disadvantages of each Education 4.0 tool stated earlier for learning sustainability? 5. Do you teach your students to document skillsets and reflect learning (i.e. using Education 4.0 tools like e-portfolio or video resume)? How did these help you in teaching, and your students for their employability and learning sustainability?	1. How well did the university prepare graduates for the job market? What else could be done to enhance their chances of being employed? 2. What are some Education 4.0 tools that graduates are using for employability and learning sustainability? 3. How are the Education 4.0 tools above being used for graduate employability and learning sustainability? 4. What are the advantages and disadvantages of each Education 4.0 tool stated earlier for graduate employability? 5. What are the advantages and disadvantages of each Education 4.0 tool stated earlier for learning sustainability? 6. Were the graduates taught how to document skillsets and reflect learning (i.e. using Education 4.0 tools like e-portfolio or
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	7. When you were in university, were you taught how to document skillsets and reflect learning (i.e. using Education 4.0 tools like e-portfolio or video resume)? How did these help you in employability and learning sustainability?		video resume)? How did these help the industry?
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3.4 PHASE 2: DEVELOPMENT AND DISTRIBUTION

a. Selection of Participants

Crouch and McKenzie (2006) mentioned that interview-based data collection which uses less than 20 participants will result in better data because it is easier for researchers to build rapport with a smaller group of participants. For the purpose of this study, a total of nine informants were selected for the semi-structured interview. There were three categories of informant which were industrial experts, lecturers and university alumni.

For the first category, three of them were experts in the industries who had the experience of interviewing or recruiting new employees. Informant 1 is a female who has been working in the construction industry in an architecture firm for 35 years. Her current role is project architect, with a bachelor's degree education in Architecture. Informant 2 is a male who is from the oil and gas industry with 11 years of working experience. His education level is a Diploma in Occupational Safety and Health (OSH) and currently holds the position of an OSH Officer. Informant 3 is also a male working as an OSH Auditor in the manufacturing industry. His bachelor's degree was in Mechanical Engineering and his Master's degree was in OSH. He has 14 years of working experience in the manufacturing industry as a production engineer and later as an OSH officer. Currently, he is attached to a manufacturing company as an OSH auditor.

As for the second category, two male and one female lecturers from two public universities were interviewed. All three lecturers' highest education level is a Ph.D. Informant 4 graduated with a bachelor's degree in English Language and Literature with 24 years of working experience. While teaching at his university language centre, he pursued a Master's and Ph.D in Education. Currently, he is an assistant professor in the Faculty of Education. Informant 5 graduated in Physics for his bachelor's degree and transitioned to Education for his Master's degree and Ph.D. He has a total of five years of working experience as a university tutor, an instructional designer and currently as a lecturer in the Faculty of Education of the same public university as Informant 4. Meanwhile, Informant 6 is an associate professor from the Faculty of Engineering at another university with 20 years of working experience. Her expertise

is in Civil Engineering which includes Computational Mechanics, Modal Analysis, Dynamics characteristics and Isolation Systems.

For the third category, three university alumni, two females and one male were interviewed. All three of them graduated from the same public university with a bachelor's degree. Informant 7 graduated from English Language and Literature programme. She has had eight years of working experience in various positions including kindergarten teacher, telemarketer and drop-shipper. Her longest position was as a lecturer teaching English subjects in a private college for a total of five years. Currently, she is a full-time life planner working for a famous insurance company in Malaysia. She chose the current industry because of work flexibility benefits.

Similarly, Informant 8 graduated from English Language and Literature. However, she chose to stay at home and work freelance during the first few years after graduating and getting married. Currently, she is a junior lecturer teaching English subjects in a private college and she has been there for two years.

Informant 9 graduated in Manufacturing Engineering and immediately got hired after graduation to work in the same industry followed by the oil and gas industry for a total of three years. He made the decision to change his career and joined the Inland Revenue Board (IRB) as a tax officer during the recession of the oil and gas industry in 2018. Since then, he has been a tax officer in IRB for five years. The criteria of participants for Phase 2 are highlighted in the following table:

Table 3.4 Criteria of Participants for Phase 2 according to Category

Category	Criteria
Industrial Experts	Three experts in industries were involved in the new employee hiring process
Lecturers	Three lecturers from two public higher learning institutions in Malaysia
Alumni	Three alumni who graduated from a public higher learning institution in Malaysia

b. Trustworthiness

Unlike quantitative study which focuses on validity and reliability, qualitative study focuses on trustworthiness. Lincoln and Guba (1985) highlighted four criteria to determine the trustworthiness of a qualitative study.

Credibility is ensured by data that is rich and believable. In this study, credibility was achieved through data triangulation. Data triangulation is when researchers use various sources of data during data collection (Creswell & Clark, 2018). Three categories of respondents including experts in industries, lecturers, and university alumni were interviewed as a part of data triangulation.

Transferability refers to whether the research findings can be applied in other contexts with similar populations, situations, or phenomena. Readers will determine transferability by comparing the discussed methods and findings with their own context. This study has discussed the methods and findings in detail for readers to understand and apply them in their context.

Dependability is when a study can be repeated by other researchers in the future while producing consistent findings at the same time. This study discusses the research design and process in this chapter which enables other researchers to repeat it without difficulty.

Confirmability deals with researchers being neutral during data collection and analysis. This means that the researcher does not include personal interpretation or assumption. An audit trail, detailing the step-by-step data analysis process, is included below to prove the researcher's neutrality.

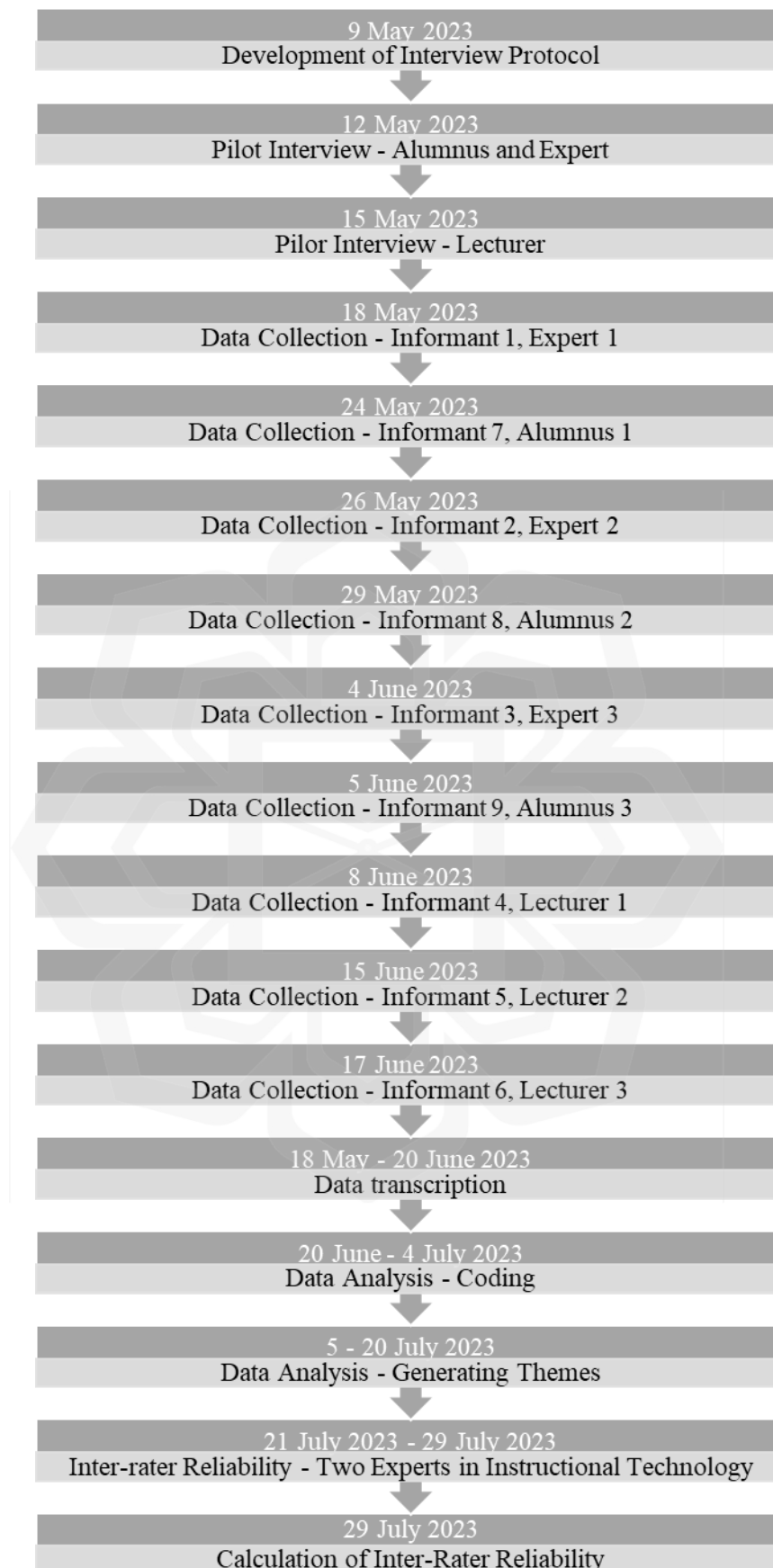


Figure 3.4 Audit Trail

c. Pilot Study

The researcher conducted a pilot study on a participant from each category who shares the same criteria as the intended participants for this study. If necessary, the interview questions might be changed, rephrased, added or omitted based on how the participant in the pilot study responds to the interview questions. A pilot study is crucial so that the researcher is fully prepared before collecting data from real participants.

The initial interview in the pilot study involved a university alumnus who graduated with a Bachelor of Engineering from a public university in Malaysia, a lecturer who has been teaching Statistics for 12 years and an industrial expert who has experience in employee hiring for 6 years. Based on the participants' responses in the pilot study, the interview questions remained unchanged. However, it was acknowledged that extensive probing was necessary to gather comprehensive data during the actual data collection. The researcher tailored the probing approach to each participant's response to gain in-depth information on the phenomenon. The aim was to seek clarification for the answers provided by the participants. Besides probing, an explanation of several key terms in simple words was also necessary for the participants. This is so that they are able to understand the interview questions better and thus provide their insights comprehensively.

d. Interview Procedure

The researcher conducted a face-to-face interview with most of the participants and an online interview via Google Meet with participants who were unable to meet for a face-to-face interview. Before starting the interview, the researcher welcomed and thanked the participants for their willingness to participate in the data collection. Then, the researcher shared a brief overview of the research purpose and how the participants' involvement is significant to the study findings. The researcher reiterated that her intention of the interview was to collect in-depth information, therefore there is no pressure to provide right or wrong answers. Then, the participants were told that their identities would remain anonymous, and they gave verbal consent for their voices to be recorded for future analysis.

Each category was started with lead-in questions like where they graduated from, what industry are they working in right now and how long they have been teaching. The researcher asked lead-in questions to break the ice and build rapport to make the participants feel comfortable before answering the interview questions.

The interview was conducted in a relaxed manner so that the participants were able to provide rich information without any level of anxiety. They were given the choice of whether to have the interview to be conducted in the English language or their mother tongue, Bahasa Malaysia. Most of the participants decided to converse in English with some mix of Bahasa Malaysia. One participant chose to converse in Bahasa Malaysia because she felt more comfortable in the language. The reason why they have this freedom of choice is so that they feel comfortable, and the interview seems natural to them like a daily conversation.

e. Data Analysis Procedure

Hoyos and Barnes (2012) outlined a method to analyse interview data. This study has followed the guides for data analysis.

Transcribing was conducted consecutively starting after the interview with the first participant. The recorded interviews were transcribed verbatim, word by word. The researcher used a transcribing app called Buzz. The app contains a large library and uses Artificial Intelligence (AI) to detect multiple languages. The researcher followed the guide by Abdulkareem (2023) by dragging the MP3 file of the interview recording into the app. Then, the researcher selected the language that the interview was conducted in as well as the model to be used. After minutes, the transcription appeared and was saved as a Microsoft Word file. The researcher checked the transcription while listening to the audio recording to edit any mistakes in the transcription. The transcription was read multiple times to grasp the overall content.

Coding process was conducted in several stages. Open coding was conducted first before axial coding. Open coding was done by identifying crucial keywords and categorising them into main ideas. Axial coding was done by identifying patterns that

exist among all participants' data. Then, selective coding was conducted by selecting a core category that generalised the findings. The coding process was done using Atlas.ti, which is a widely used tool in qualitative studies. The codes were named, categorised and colour-coded for an easier coding process among all the participants' data.

Thematic analysis was conducted once similar patterns had been organised into categories. The researcher formulated concepts for emerging themes and sub-themes derived from the categories. Concepts were developed based on the researcher's judgment of the best way to summarize the emerging themes. The researcher used the 'networks' feature in Atlas.ti to show how the themes, sub-themes and categories relate to one another. These themes were presented and further explained in the findings section in Chapter 4.

f. Inter-rater Reliability

IRR or Inter-Rater Reliability, is a way to measure how much different raters agree on how to assess or code the same data (McAlister et al., 2017). IRR is a method applied in a qualitative study to minimise bias in interpretation and ensure open communication among researchers to maintain consistency in the coding process. As cited by McAlister et al. (2017), Miles and Huberman (1994) recommend an IRR percentage of 80% agreement among coders for the codes to be deemed significant. In this study, the calculation of IRR is done following the formula discussed by Miles and Huberman (1994) in McAlister et al. (2017).

$$\text{reliability} = (\text{number of agreements} / \text{number of responses}) \times 100$$

Two experts in Instructional Technology have been contacted for the IRR. An IRR form containing the generated themes, sub-themes and quotes has been prepared in Microsoft Excel and emailed to the experts for the IRR procedure. A sample of the form can be seen below.

Inter-rater Reliability 2

ENHANCING MALAYSIAN SUSTAINABLE HEI LEARNING AND GRADUATE EMPLOYABILITY THROUGH EDUCATION 4.0:
DEVELOPMENT OF A METACOGNITIVE STRATEGIES FRAMEWORK

Research Question 1:
What are the required metacognitive strategies to enhance learners' employability and learning sustainability through Education 4.0 from the perspective of experts, lecturers and alumni?

Informant category: Industrial Experts, Lecturers and University Alumni (All categories)

Interview question	Themes	Sub-themes	Main ideas	Informant	Verbal Support (Hover over cell to view)	Inter-rater		Comments/ Suggestions
						Agree	Disagree	
IQ2. What do you think are some of the attributes and competencies that you consider important among graduates?	Skillsets	Personal Qualities	Innovative	1				
				4				
			Knowledgeable	2				
				6				
				9				
			Independent	1				
				2				
				3				
				7				
				9				

kalau dia rajin, dia pandai search, ha maksudnya dia dia bukan bukan tunggu orang spoon-feed. Ha kita..maksudnya dia haa innovative. (DU48I1)

Figure 3.5 Sample of Inter-Rater Reliability Form

The experts were given ample time to fill in the form and they returned it to the researcher in more or less a week. For this study, the total percentage of IRR between Inter-rater 1 and Inter-rater 2 is 78.55%. The calculation of IRR for this study is as below.

Table 3.5 Calculation of Inter-Rater Reliability

Reliability = (number of agreements/number of responses) x 100	
Inter-rater 1	(12/14) x 100 = 85.7
Inter-rater 2	(10/14) x 100 = 71.4
Average	(22/28) x 100 = 78.55

A questionnaire was constructed from the findings of the semi-structured interview conducted previously. The questionnaire was distributed to a group of experts in Phase 3.

3.5 PHASE 3: VALIDATION AND REFINEMENT

The validation of the framework will be assessed during this phase using the Fuzzy Delphi Method. The fuzzy Delphi Method was developed by Kaufman and Gupta (1998) which combines fuzzy set theory and Delphi techniques. It is an instrument that ‘improves’ the existing Delphi technique (Mohd Ridhuan Jusoh & Nik Mohd Rahimi Nik Yusoff, 2015). This study uses the Fuzzy Delphi Method to obtain expert consensus on the content items of the metacognitive strategies framework that is developed based on findings from Phase 2. There were two rounds of the Fuzzy Delphi Method. Round 1 was conducted first whereas Round 2 was conducted after the instrument has been refined.

a. Selection of Participants

Adler and Ziglio (1996) noted a minimum sample of 10 experts to achieve high uniformity in the Fuzzy Delphi Method. Hence, in the first round of FDM, the questionnaire was distributed online through Google Forms to a group of 20 experts. The selection of experts was done via purposive sampling. The reason behind this choice is that the researcher would like to ensure the richness of data collected which will be achieved by selecting participants who have several predetermined criteria (Hancock et al., 2009). Previous studies have highlighted the criteria of experts for the Fuzzy Delphi Method. Berliner (2004) stated that those who have worked in a particular field for more than five years are considered experts (Mohd Jamil & Mat Noh, 2020, p. 85). Swanson and Holton (2008) shared that those who are highly knowledgeable and skilled in the field are considered experts suitable for Fuzzy Delphi Method (Mohd Jamil & Mat Noh, 2020, p.86). In another literature, Gambatese, Behm and Rajendran (2008) shared four criteria to define experts which are those who have a high academic qualification, a good record, time to give feedback and are willing to participate voluntarily (Mohd Jamil & Mat Noh, 2020, p. 87). In this study, the researcher has selected experts who fulfil the criteria listed earlier, primarily focusing on participants who are lecturers in Malaysian HEI or those who have experience in new employee hiring as recruiters or interviewers. The table

below shows an overview of the demographic information of the 20 experts from the first round of FDM.

Table 3.6 Demographic information of expert panel from Round 1

Demographic data	N = 20	Percentage
Gender		
Male	8	40%
Female	12	60%
Academic Qualification		
Bachelor's Degree	7	35%
Master's Degree	5	25%
PhD	8	40%
Years of experience		
6 - 10 years	10	50%
11 - 15 years	2	10%
16 - 20 years	2	10%
More than 20 years	6	30%
Field of expertise		
Higher education	12	60%
Public HEI	5	42%
Private HEI	7	58%
New employee hiring	8	40%
Work sector		
Construction	2	10%
Education	17	85%
Finance and economic	1	5%
Total	20	100%

In terms of gender, the sample is relatively balanced, with 40% of the experts being male and 60% female. The academic qualifications of the expert panel are diverse, with 35% holding a bachelor's Degree, 25% possessing a Master's Degree, and 40% having a Ph.D.

Half of the experts (50%) have 6 to 10 years of experience. The distribution further breaks down into 10% with 11 to 15 years, 10% with 16 to 20 years, and 30% with more than 20 years of experience.

The field of expertise shows that 60% of the experts are lecturers with 42% of them working in public higher education institutions and 58% in private higher education institutions. Meanwhile, 40% of the experts are experienced in the new employee hiring process.

Finally, in terms of the work sector, 85% are affiliated with the education sector, while 10% are in the construction sector and 5% in finance and economics.

For the second round of the Fuzzy Delphi Method, 22 participants were selected as the expert panel. The table below shows an overview of the demographic information of the 22 experts for the second round of FDM.

Table 3.7 Demographic information of expert panel from Round 2

Demographic data	N = 22	Percentage
Gender		
Male	6	27%
Female	16	73%
Academic Qualification		
Bachelor's Degree	8	36%
Master's Degree	9	41%
PhD	5	23%
Years of experience		
6 - 10 years	11	50%
11 - 15 years	4	18%
16 - 20 years	1	5%
More than 20 years	6	27%
Field of expertise		
Higher education	12	55%
Public HEI	5	42%
Private HEI	7	58%
New employee hiring	10	45%
Work sector		
Construction	1	5%
Education	17	77%
Food and beverage	1	5%
Hospitality and tourism	1	5%
Manufacturing	2	9%
Total	22	100%

The panel demonstrates a notable majority of female participants, constituting 73% of the total, while males represent 27%. Their academic qualifications vary, with 36% holding bachelor's degrees, 41% possessing Master's degrees, and 23% having attained a PhD. In terms of working experience, half of the participants (50%) had 6 to 10 years of experience, followed by 18% with 11 to 15 years, 5% with 16 to 20 years, and 27% with more than 20 years of professional experience. The field of expertise showcases a predominant focus among lecturers in higher education (55%). 42% of the lecturers are from public Higher Education Institutions (HEIs) and 58% from private HEIs. Meanwhile, the other 45% of the experts are experienced in new employee hiring. Regarding work sectors, the majority of experts (77%) are affiliated with the education sector, while the remaining 23% are distributed across diverse industries such as construction (5%), food and beverage (5%), hospitality and tourism (5%), and manufacturing (9%).

b. Instrument

The research instrument for this phase used a five-point Likert scale questionnaire that was developed based on the findings from semi-structured interviews done in Phase 2. To implement the Fuzzy Delphi Analysis, the researcher needed to determine and organize the items through the findings of Phase 2 in a neat and manageable form that is understandable by a panel of experts. The collected data was translated into fuzzy numeric data form and analysed using Microsoft Excel software.

Based on the result obtained from Round 1 of Fuzzy Delphi Analysis, the instrument was refined. Then, Round 2 of Fuzzy Delphi Analysis was conducted among the same set of 20 experts. The same questionnaire was modified and distributed to obtain their consensus on the content items of the metacognitive strategies framework. Same as before, the collected data was translated into Fuzzy numeric data form and analysed using Microsoft Excel software.

Validity

Content-validity

Content validity refers to how well the elements of an assessment tool relate to and accurately represent the intended concept for a specific assessment goal (Yusoff, 2019a). It examines how well the items in an instrument or a questionnaire are able to measure its idea or domain. The content validity of the questionnaire used in this study was tested with the Content-Validity Index (CVI) discussed by Yusoff (2019). Firstly, the researcher prepared a form to send to experts for the content validity procedure. The form contains a note and instructions for experts to use it. Each item of the questionnaire was arranged under their respective construct named domain. The experts had four options of answers to determine the degree of relevance. The form was created in Microsoft Excel and sent to the experts via email. A sample of the form is shown below.

Expert Validation Form: Effectiveness of Metacognitive Strategies for Sustainable Learning and Employability through Education 4.0

Dear experts,

This questionnaire contains 14 domains and 148 items related to metacognitive strategies for sustainable learning and employability through Education 4.0. I seek your expert judgement on the degree of relevant of each item to the measured domains. Your kind cooperation to take the time to review and validate this questionnaire items is greatly appreciated.

Key to Rating Scale: Degree of relevance

1 = The item is not relevant to the measured domain
2 = The item is somewhat relevant to the measured domain
3 = The item is quite relevant to the measured domain
4 = The item is highly relevant to the measured domain

Part 1: Metacognitive Strategies for Graduate Employability and Learning Sustainability

Domain 1: Showcase self
Definition: Showcase self is a strategy that graduates use to showcase themselves to be more visible towards employers through resume, portfolio/e-portfolio, preparation before job interview and self-presentation during job interview.

No	Tested Items	Relevance				Comment/Suggestion (if any)
		1	2	3	4	
1	Graduates should utilise Education 4.0 tools to build an e-portfolio since Year 1					
2	Graduates should include success stories (i.e. achievements, awards, participations during university) in their e-portfolio					
3	E-portfolio should be made compulsory as a part of programme assessment during university					
4	Graduates should constantly upgrade resume to be ready for employment opportunities					
5	Video resume should be taught to all students in university					

Figure 3.6 Sample of content validity form

In this study, the researcher sought two experts to validate the items in the questionnaire. Two of them are lecturers, one is an expert in Instructional Technology whereas the other is an expert in research. The researcher contacted them and sent the form via email. Then, the result was entered and analysed using Microsoft Excel with the formula discussed by Yusoff (2019). There are 8 steps to analyse the results of the CVI procedure.

Table: The relevance ratings on the item scale by two experts

Domain	Item	Expert 1	Expert 2	Experts in Agreement	I-CVI	UA
Domain 8	Q67	1	1	2	1	1
	Q68	1	1	2	1	1
	Q69	1	0	1	0.5	0
	Q70	1	1	2	1	1
	Q71	1	1	2	1	1
	Q72	1	1	2	1	1
	Q73	1	1	2	1	1
	Q74	1	1	2	1	1
	Q75	1	1	2	1	1
	Q76	1	1	2	1	1
	Q77	1	1	2	1	1
Proportion relevance		1.00	0.91	S-CVI/Ave	1.91	S-CVI/UA
Average proportion of items judged as relevance		0.95				0.91

Figure 3.7 Sample of relevance ratings on the item scale by two experts

Firstly, items answered with a degree of relevance 1 and 2 are recoded as '0' whereas items answered with a degree of relevance 3 and 4 are recoded as '1' (Yusoff, 2019). In the sample above, for Item Q69, the degree of relevance was 4 for Expert 1 and 2 for Expert 2. Hence, the data was entered as '1' for Expert 1 and '0' for Expert 2. Then, the experts in the agreement were totalled as in Step 2. For universal agreement (UA), items with 100% agreement by all experts were indicated as '1' whereas items with agreement less than that were indicated as '0'. I-CVI or the item-level content validity index is calculated by dividing the experts in agreement with the number of experts. For example, for item Q68, the experts in the agreement were 2, then divide it by 2 (number of experts), so its I-CVI is 1. Meanwhile, for item Q69, the experts in

agreement was 1, divided by 2, and its I-CVI is 0.5. The next step is to find the proportion relevance by averaging the score across all items within the domain. The scores for the degree of relevance across all items were added and then divided by the number of items (which is 11 items for this domain). It can be seen in the sample that the proportion relevance for all items was averaged as 1 for Expert 1 and 0.91 for Expert 2. The next step is to calculate the average proportion of items judged as relevant by totalling up the proportion of relevance then divide it by the number of experts $[(1.00 + 0.91) / 2 = 0.95]$. Scale-level content validity index by the average method (S-CVI/Ave) was calculated by totalling the experts in agreement and then dividing it by the number of items $[(2+2+1+2+2+2+2+2+2+2+2) / 11 = 1.91]$. Then, the scale-level content validity index by the user agreement method (S-CVI/UA) is averaged by summing up UA scores and dividing it by the number of items $[(1+1+0+1+1+1+1+1+1+1+1) / 11 = 0.91]$.

The CVI values are determined as acceptable or not by looking at the I-CVI, S-CVI/Ave and S-CVI/UA. Yusoff (2019) cited that the acceptable CVI values according to Davis (1992) are 0.80 for two experts. Based on the sample above, the S-CVI/Ave and S-CVI/UA met the acceptable CVI values. However, the I-CVI for item Q69 was 0.5 which does not meet the acceptable CVI value of 0.80. The accepted items were retained in the instrument whereas the researcher decided to revise the items that do not meet the acceptable CVI values. The table below shows the summary of the items for all domains of the content validity analysis.

Table 3.8 The summary of the items for all domains of the content validity analysis

	Domains	No of items	No of the items were revised before being retained	No. of items deleted	No of the items retained
1	Showcase self	11			11
2	Self-improvement	9			9
3	Exposure	20	3		20
4	Self-study and study group	12	1		12
5	Career Development and Training	4	1		4
6	Reflective of learning	5	5		5
7	Teaching approaches	5			5
8	Purpose of Education 4.0 tools	11	1		11
9	Advantages of Education 4.0 tools	25	2		25
10	Disadvantages of Education 4.0 tools	15	3		15
11	Personal Qualities	1			1
12	Employability Skills	1			1
13	Importance of Skillsets	15			15
14	Current practice	14	3		14
	Total	148	19	0	148

The following table illustrates the researcher's decision for the items that do not meet the acceptable CVI values.

Table 3.9 The summary items (I-CVI, UA) which were retained, revised, and deleted

Domain	Question #	Item	No. of the panel agree on the relevancy of the item	I-CVI	UA	Comments	Decision	New item after revision
3	34	Besides practicum, university should organize industrial visit for students to gain exposure of real-life working experiences	1	0.5	0	1/2 panels commented to shorten the sentence by removing “Besides practicum”, “Besides class syllabus”	Revised	University should organize industrial visit for students to gain exposure of real-life working experiences
	35	Besides practicum, university should have a project-based course for students to gain exposure of real-life working experiences	1	0.5	0		Revised	University should have a project-based course for students to gain exposure of real-life working experiences
	37	Besides class syllabus, lecturers should provide additional guidance and resources for students to refer	1	0.5	0	1/2 commented to rearrange the item as 40,36,39,38,37	Revised	Lecturers should provide additional guidance and resources for students to refer
	38	Lecturers should provide guidance to students to improve soft skills i.e. presentation, communication and language skills	1	0.5	0	For items 39 & 40, 1/2 panels did not agree on the relevancy without comment. The researcher decides to retain the items.	Retained	-

	39	Lecturers should provide exposure to the process or procedure of tasks to be done later in the workforce	0	0	0		Retained	-
	40	Lecturers should have passion for delivering knowledge to produce a highly employable graduate	0	0	0		Retained	-
			S-CVI/UA	1.6				
			S-CVI/Ave	0.7				
4	51	Graduates should start learning digital skills like graphic designing and video editing because digital skills will be useful in their careers later	1	0.5	0	1/2 panels commented to rephrase the sentence for a more concise explanation	Revised	Students should start learning digital skills like graphic designing and video editing during university
			S-CVI/UA	1.92				
			S-CVI/Ave	0.92				
5	56	If there are no training and career development programmes, the company will remain stagnant with no growth	1	0.5	0	1/2 panels commented to rephrase the sentence for a more concise explanation	Revised	Graduates will have no professional growth in companies that do not provide training or career development programmes
			S-CVI/UA	1.75				
			S-CVI/Ave	0.75				

6	57	Reflection of learning helps the industry to identify the knowledge that graduates have gained during university	1	0.5	0	1/2 panels commented to change the term "Reflection of learning" to "Reflective practice"	Revised	Reflective practice helps the industry to identify the knowledge that graduates have gained during university
	58	Reflection of learning helps the industrial managers to report to their superior	1	0.5	0		Revised	Reflective practice helps the industrial managers to report to their superior
	59	Reflection of learning helps students to remember what they have learned	1	0.5	0		Revised	Reflective practice helps students to remember what they have learned
	60	Reflection of learning helps students to improve on skills that they are lacking	1	0.5	0		Revised	Reflective practice helps students to improve on skills that they are lacking
	61	Reflection of learning helps the lecturers to improve future lessons	1	0.5	0		Revised	Reflective practice helps the lecturers to improve future lessons
			S-CVI/UA		1			
			S-CVI/Ave		0			
8	69	Companies should utilise professional network sites like LinkedIn to seek new employees	1	0.5	0	1/2 panels commented to rephrase the sentence for a more concise explanation	Revised	Employers should utilise professional network sites like LinkedIn to seek new employees

			S-CVI/UA	1.91				
			S-CVI/Ave	0.91				
9	85	Education 4.0 provides exposure to graduates during university to be prepared with the software that they will use later in their career	1	0.5	0	1/2 panels commented to rephrase the sentence by removing "during university"	Revised	Education 4.0 provides exposure to graduates to be prepared with the software that they will use later in their career
	94	By having an e-portfolio, students will produce the best work for their assignments because they know it will be included in their e-portfolio	1	0.5	0	1/2 panels commented to rephrase by removing "because they know it will be included in their e-portfolio"	Revised	By having an e-portfolio, students will produce the best work for their assignments
			S-CVI/UA	1.92				
			S-CVI/Ave	0.92				
10	109	When employers use professional networking sites like LinkedIn, employers may waste time during hiring process due to bad candidates because graduates can freely embellish details on their profile	1	0.5	0	1/2 panels commented to shorten the sentence	Revised	With professional networking sites like LinkedIn, employers may waste time during hiring process due to bad candidates who faked details on their profile

	110	When graduates are too dependent on technology, they may fail to work efficiently when there are limitations like poor internet connection	1	0.5	0	1/2 panels commented to rephrase the sentence using "Technology-dependent graduates"	Revised	Technology-dependent graduates may fail to work efficiently when there are limitations like poor internet connection
	115	There is a lack of human touch when learning using Education 4.0 tools which is a drawback to students who require guidance from a real instructor	1	0.5	0	1/2 panels commented to rephrase the sentence using "Lack of human touch is a drawback in Education 4.0"	Revised	Lack of human touch is a drawback in Education 4.0 for students who require guidance from a real instructor
			S-CVI/UA	1.8				
			S-CVI/Ave	0.8				
14	136	During interview, employers provide a task for candidates to do to check whether the candidates are able to perform their work or not	1	0.5	0	1/2 panels commented to rephrase the sentence using "Any task provided by employers during interview is to check.."	Revised	Employers provide tasks during interview to check whether the candidates are able to perform their work or not
	141	All public higher education institutions (HEIs) are following an outcome-based education with intended programme outcomes and course outcomes that students should be able to achieve by the end of each semester and the degree itself	1	0.5	0	1/2 panels commented to shorten the sentence	Revised	All public higher education institutions (HEIs) are following an outcome-based education with intended programme outcomes

142	Universities appoint advisors from the industries to provide feedback on programme improvement and match the syllabus to the current industrial needs	1	0.5	0	1/2 panels commented to shorten the sentence	Revised	Universities appoint industrial advisors for syllabus feedback to match the current industrial needs
		S-CVI/UA	1.79				
		S-CVI/Ave	0.79				

Face validity

Face validity refers to how well the items of an instrument appear to measure what it was intended to measure (Yusoff, 2019b). Similar to the CVI discussed earlier, the face validity for the questionnaire used in this study is tested with the Face-Validity Index (FVI) guided by Yusoff (2019b). Firstly, the researcher prepared a form to send to raters for the face validity procedure. The form contains a note and instructions for raters to use it. Each item of the questionnaire was arranged under their respective construct named domain. The raters had four options of answer to determine the degree of clarity and comprehension. The form was created in Google Forms and sent to the raters. A sample of the form is shown below.

FACE VALIDITY: Effectiveness of Metacognitive Strategies for Sustainable Learning and Employability through Education 4.0

Dear raters,

This questionnaire contains 14 domains and 148 items related to metacognitive strategies for sustainable learning and employability through Education 4.0. I seek your opinion on the degree of clarity and comprehension of each item to the measured domains.

Your kind cooperation is greatly appreciated.

Part 1: Metacognitive Strategies for Graduate Employability and Learning Sustainability

Key to Rating Scale: Degree of clarity and comprehension
1 = The item is not clear and understandable
2 = The item is somewhat clear and understandable
3 = The item is clear and understandable
4 = The item is very clear and understandable

Domain 1: Showcase self *
Definition: Showcase self is a strategy that graduates use to showcase themselves to be more visible towards employers through resume, portfolio/e-portfolio, preparation before job interview and self-presentation during job interview.

To what extent do you understand the following statements?

	1	2	3	4
Graduates should utilise Education 4.0 tools to build an e-portfolio since Year 1	☐	☐	☐	☐

Figure 3.8 Sample of Face Validity Form

In this study, the researcher sent the face validity form to ten raters to rate the items in the questionnaire in terms of clarity and comprehension. The selection of raters is made based on characteristics that are similar to target users (Yusoff, 2019b). In this study, three of the raters represented industrial experts, four represented lecturers and the remaining three represented alumni. The demographic information of the raters is shown below.

Table 3.10 Demographic information of raters for face validity

Rater	Current work industry	Target user represented
1	Manufacturing	Industrial Expert
2	Mining	Industrial Expert
3	Construction	Industrial Expert
4	Education	Lecturer
5	Education	Lecturer
6	Education	Lecturer
7	Construction	Alumni
8	Education	Lecturer
9	Education	Alumni
10	Finance	Alumni

The researcher contacted them and sent the form via Google Forms. Then, the result was entered and analysed using Microsoft Excel with the formula discussed by Yusoff (2019b). Similar to CVI, there are 8 steps to analyse the results of the FVI procedure.

Table: The comprehension and clarity ratings on the item scale by ten raters

Domain	Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7	Rater 8	Rater 9	Rater 10	Raters in Agreement	I-FVI	UA
Domain 4	Q41	1	1	1	1	1	1	0	0	1	1	8	0.8	0
	Q42	1	1	1	1	1	1	1	1	1	1	10	1	1
	Q43	1	1	1	1	1	1	1	1	1	1	10	1	1
	Q44	1	1	1	1	1	1	0	1	1	0	8	0.8	0
	Q45	1	1	1	1	1	1	0	0	1	0	7	0.7	0
	Q46	1	1	1	1	1	1	1	1	1	1	10	1	1
	Q47	1	1	1	1	1	1	0	1	1	1	9	0.9	0
	Q48	1	1	1	1	1	1	1	1	1	1	10	1	1
	Q49	1	1	1	1	1	1	1	1	1	1	10	1	1
	Q50	1	1	1	1	1	1	1	1	1	1	10	1	1
	Q51	0	1	1	1	1	1	1	1	1	1	9	0.9	0
	Q52	1	1	1	1	1	1	1	1	1	1	10	1	1
	Proportion clarity & comprehension	0.92	1.00	1.00	1.00	1.00	1.00	0.67	0.83	1.00	0.83	S-FVI/Ave	9.3	
	Average proportion of items judged clarity and comprehension across ten raters											S-FVI/UA		0.58
												0.93		

Figure 3.9 Sample of clarity and comprehension ratings on the item scale by ten raters

Firstly, items answered with a degree of clarity and comprehension of 1 and 2 will be recoded as '0' whereas items answered with a degree of clarity and comprehension of 3 and 4 will be recoded as '1' (Yusoff, 2019b). In the sample above, for Item Q41, the degree of clarity and comprehension was 4 for Rater 6 and 2 for Rater 7. Hence, the data was entered as '1' for Rater 6 and '0' for Rater 7. Then, the raters in the agreement were totalled as in Step 2. For universal agreement (UA), items with 100% agreement by all raters were indicated as '1' whereas items with agreement less than that were indicated as '0'. I-FVI or the item-level face validity index is calculated by dividing the raters in agreement with the number of experts. For example, for item Q41, the raters in the agreement were 8, then divide it by 10 (number of experts), so its I-FVI is 0.8. The next step is to find the proportion of clarity and comprehension by averaging the score across all items within the domain. The scores for the degree of clarity and comprehension across all items were added and then divided by the number of items (which is 12 items for this domain). It can be seen in the sample, that the proportion of clarity and comprehension for all items averaged at 0.92 for Rater 1 and 1.00 for Rater 2. The rest of the values can be seen in the sample. After this step, the researcher calculated the average proportion of items judged as clarity and comprehension by totalling up the proportion of clarity and comprehension; and then dividing it by the number of experts $[(0.92+1.00+1.00+1.00+1.00+1.00+0.67+0.83+1.00+0.83) / 10 = 0.93]$. Scale-level face validity index by the average method (S-FVI/Ave) was calculated by totalling the raters in agreement and then dividing it by the number of items $[(8+10+10+8+7+10+9+10+10+9+10)/12 = 9.3]$. Then, the scale-level face validity index by the user agreement method (S-FVI/UA) was averaged by summing up UA scores and dividing it by the number of items $[(0+1+1+0+0+1+0+1+1+1+0+1) / 12 = 0.58]$.

The FVI values are determined as acceptable or not by looking at the I-FVI, S-FVI/Ave and S-FVI/UA. Yusoff (2019b) mentioned that the acceptable FVI values, according to Marzuki et al. (2018) are 0.83 for ten raters. Based on the sample above, only the S-FVI/Ave met the acceptable FVI values. However, the I-FVI values for items Q41, Q44 and Q45 are below 0.83 which does not meet the acceptable FVI value. The accepted items were retained in the instrument whereas the researcher

decided to revise the items that did not meet the acceptable FVI values. Feedbacks on how to reword the items were given by the raters through verbal comments or WhatsApp chat. The table below shows the summary of the items for all domains of the face validity analysis.

Table 3.11 The summary of the items for all domains of the face validity analysis

	Domains	No of items	No of the items were revised before being retained	No. of items deleted	No of the items retained
1	Showcase self	11			11
2	Self-improvement	9			9
3	Exposure	20			20
4	Self-study and study group	12	1		12
5	Career Development and Training	4	1		4
6	Reflective of learning	5	1		5
7	Teaching approaches	5			5
8	Purpose of Education 4.0 tools	11			11
9	Advantages of Education 4.0 tools	25			25
10	Disadvantages of Education 4.0 tools	15	1		15
11	Personal Qualities	1			1
12	Employability Skills	1			1
13	Importance of Skillsets	15	1		15
14	Current practice	14	1		14
	Total	148	6	0	148

The following table shows the researcher's decision for the items that do not meet the acceptable FVI values.

Table 3.12 The summary items (I-FVI) which were rejected and revised

Domain	Question #	I-FVI	Rejected Item (I-FVI below than 0.83)	New item after revision
3	25	0.80	During university, graduates who can manage time should work part-time to gain exposure	Students who can manage time should work part-time to gain exposure
	35	0.80	Besides practicum, university should have a project-based course for students to gain exposure of real-life working experiences	University should have a project-based course for students to gain exposure of real-life working experiences
	39	0.80	Lecturers should provide exposure to the process or procedure of tasks to be done later in the workforce	Lecturers should provide exposure to the work process or procedure to be done later in the workforce
	40	0.80	Lecturers should have passion for delivering knowledge to produce a highly employable graduate	Lecturers should have passion for delivering knowledge to produce a highly employable graduate
4	41	0.80	During university, graduates should seek the right circle to have intellectual discourses	Students should seek the right circle to have discussions
	44	0.80	During university, graduates should improve note-taking skills to sustain learning	Students should improve note-taking skills to remember what they have learned better
	45	0.70	Annotations (short notes) help graduates to sustain learning better	Annotations (short notes) help graduates to remember what they learned better

5	56	0.70	If there are no training and career development programmes, the company will remain stagnant with no growth	Graduates will have no professional growth in companies that do not provide training or career development programmes
6	57	0.70	Reflection of learning helps the industry to identify the knowledge that graduates have gained during university	Reflective practice helps the industry to identify the knowledge that graduates have gained during university
	58	0.80	Reflection of learning helps the industrial managers to report to their superior	Reflective practice helps the industrial managers to report to their superior
7	62	0.80	Lecturers should include more real-life tasks and assessments to help students sustain learning	Lecturers should include more real-life tasks and assessments to help students remember what they have learned better
8	69	0.80	Companies should utilise professional network sites like LinkedIn to seek new employees	Employers should utilise professional network sites like LinkedIn to seek new employees
9	101	0.80	Social media provide bite-sized content for learning which is preferred by some students	Social media provide bite-sized (short) content for learning which is preferred by some students
10	109	0.70	When employers use professional networking sites like LinkedIn, employers may waste time during hiring process due to bad candidates because graduates can freely embellish details on their profile	With professional networking sites like LinkedIn, employers may waste time during hiring process due to bad candidates who faked details on their profile

11	118	0.80	Listed below are 14 Personal Qualities that make up the skillsets of a graduate. Please rank each quality with 1 as the most important through 14 as the least important for graduates to have to be highly employable.	Listed below are 14 Personal Qualities that make up the skillsets of a graduate. Please rank each quality with 1 as the least important through 7 as the most important for graduates to have to be highly employable.
	119	0.80	Listed below are 8 Employability Skills that make up the skillsets of a graduate. Please rank each skill with 1 as the most important through 8 as the least important for graduates to have to be highly employable.	Listed below are 8 Employability Skills that make up the skillsets of a graduate. Please rank each skill with 1 as the least important through 7 as the most important for graduates to have to be highly employable.
13	133	0.70	Hard workers are more important than nice workers	Hardworking employees are more important than nice employees
14	141	0.70	All public higher education institutions (HEIs) are following an outcome-based education with intended programme outcomes and course outcomes that students should be able to achieve by the end of each semester and the degree itself	All public higher education institutions (HEIs) are following an outcome-based education with intended programme outcomes

Based on the result of CVI and FVI procedures conducted, the first version of the questionnaire containing 148 items across 14 domains was developed and piloted via Google Forms.

c. Pilot Study

As cited by Tappin (2014), the sample of a pilot study is recommended to be 10% of the intended sample size, as discussed by Connelly (2008). In another literature, Hertzog (2008) highlighted that there is no clear-cut answer to a pilot study sample size as each research is influenced differently by several factors. Whereas, Michael (1995) and Hill (1998) recommended between 10 to 30 participants as a sample size for a pilot study (Tappin, 2014). In this study, 11 participants were given the questionnaire as part of the pilot study, before distributing it to experts for the Fuzzy Delphi Method (FDM). The demographic information of the participants in the pilot study is shown in the following table.



Table 3.13 Demographic information of participants in the pilot study

Demographic data	N = 11	Percentage
Gender		
Male	4	36%
Female	7	64%
Academic Qualification		
Bachelor's Degree	5	45%
Master's Degree	4	36%
PhD	2	18%
Years of experience		
6 - 10 years	3	27%
11 - 15 years	4	36%
16 - 20 years	1	9%
More than 20 years	3	27%
Field of expertise		
Higher education	4	36%
Public HEI	0	0%
Private HEI	4	100%
New employee hiring	7	64%
Work sector		
Construction	2	18%
Education	7	64%
Manufacturing	1	9%
Mining (Oil and Gas)	1	9%
Total	11	100%

The majority of the participants were female (64%) with a bachelor's degree (45%). In terms of their field of expertise, 36% of the sample were lecturers in private higher education institutions. Meanwhile, 64% were experts in the industries who had experience in the new employee hiring process. As for the work sector, 64% were in education and the others were in construction, manufacturing and oil and gas.

Based on the pilot study, the data was entered into SPSS and analysed using Cronbach's alpha and Pearson's correlation to test the instrument's reliability and validity.

Reliability

The reliability of an instrument is measured by how consistent and stable the instrument is in measuring what is intended to measure (Creswell & Clark, 2018). Using SPSS, Cronbach's alpha is calculated to determine the internal consistency within the constructs of an instrument (Creswell & Clark, 2018). In this study, the level of reliability is determined by the value of Cronbach's alpha of 0.6 or higher for the instrument to be deemed as reliable; following the discussions by Mat Daud et al. (2018). Mat Daud et al. (2018) highlighted Cronbach's alpha 0.6 as acceptable and 0.7 as the standard value. Cronbach's alpha value that is less than 0.6 will result in the instrument being unreliable and items within each construct were examined. The researcher removed certain items to increase the instrument's reliability. Based on the calculation of Cronbach's alpha in this pilot study, three items were deleted to increase the instrument reliability. The table below shows the internal consistency for all constructs.

Table 3.14 Internal consistency for all constructs

No	Construct	Cronbach's alpha	If item is deleted	Item to be deleted
1	Showcase self (SS)	0.849	-	-
2	Self-improvement (SI)	0.835	-	-
3	Exposure (EX)	0.826	-	-
4	Self-study and study group (SG)	0.900	-	-
5	Career development (CD)	0.492	0.611	Graduates will have no professional growth in companies that do not provide training or career development programmes
6	Reflective practice (RP)	0.886	-	-
7	Teaching approaches (TA)	0.747	-	-
8	Purpose of Education 4.0 (PUR)	0.774	-	-
9	Advantages of Education 4.0 (ADV)	0.952	-	-
10	Disadvantages of Education 4.0 (DIS)	0.874	-	-
11	Personal Qualities (PQ)	0.903	-	-
12	Employability Skills (ES)	0.663	0.741	Instructional Design
13	Importance of skillsets (IMP)	0.789	-	-
14	Current practice (CP)	0.689	0.733	Employers prefer candidates with experience compared to those who have a high CGPA

According to Kirk and Miller (1986), the degree of correlation between the scores of each item and the total score is used to determine the validity of an instrument (Mat Daud et al., 2018). Pearson's correlation was used to analyse the data of the pilot study. In this study, Pearson's correlation was defined as $r = 0.602$ as critical values. The critical values were obtained from the 'Table of critical values for Pearson's r ' shared by the University of Sussex (n.d.) by looking at the degree of freedom of the pilot study, which is 9. Items with r less than .602 were not valid and deleted. P values that are more than 0.05 were not statistically significant and removed from the questionnaire as well. Based on the calculation, 58 items were invalid and not statistically significant, leaving a total of 98 items in the final version of the questionnaire. The table below shows the items that were deleted from the questionnaire.

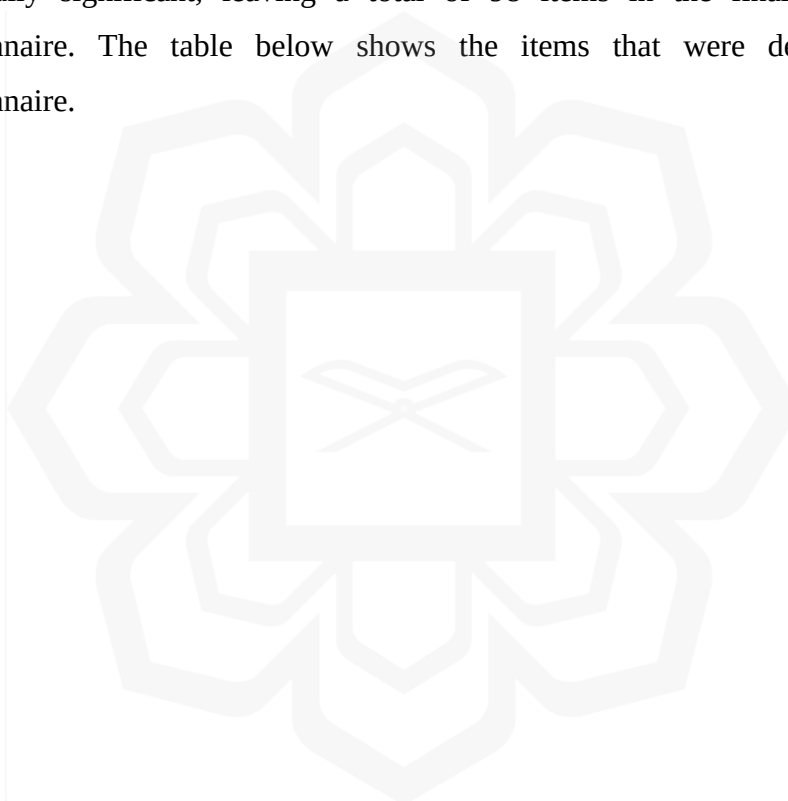


Table 3.15 Items that are invalid and not statistically significant

No	Construct	Item	Pearson's correlation, .602	Sig. (p-value) 0.05
1	SS	Graduates should constantly upgrade resume to be ready for employment opportunities	0.415	0.204
2		Graduates should do some research on the company before going to the job interview	0.027	0.938
3		Confidence during job interview will increase the chances to be employed	0.469	0.146
4		A good voice projection shows confidence during a job interview	0.545	0.083
5	SI	Graduates should learn time management because it is a lifelong skill	0.503	0.115
6		Poor stress management leads to poor quality work	0.362	0.274
7	EX	Students should actively participate in class by asking questions	0.517	0.104
8		Students should actively participate by meeting lecturers to get feedback on assignments	0.456	0.159
9		Students who can manage time should work part-time to gain exposure	0.152	0.656
10		Part-time job during university helps students to build connection to find jobs later	0.557	0.075
11		Part-time job during university is suitable only for students who manage time well	0.480	0.135
12		Students will gain more skills if they do part-time job(s)	0.543	0.084
13		University should offer courses that provide exposure to the latest software and technology that will be used in the job sector later	0.460	0.155
14		University should offer courses to develop students' soft skills like communication and presentation skills	0.097	0.776
15		University should offer courses that focus on ethics to produce ethical graduates	0.320	0.337
16		University should engage with the industries to provide feedback for students to improve their employability skills	0.281	0.402

17		Lecturers should provide guidance to students to improve soft skills i.e. presentation, communication and language skills	0.182	0.592
18		Reading will help graduates to improve problem-solving skill	0.519	0.102
19	SG	Graduates will have no professional growth in companies that do not provide training or career development programmes	-0.060	0.861
20		Graduates should equip themselves with knowledge of software used in the workplace (eg AutoCAD in Architecture)	0.517	0.104
21	CD	Employers should provide training to upskill graduates' knowledge of software used in the workplace	0.025	0.943
22		Since public university students have a Microsoft account, they should fully utilise the cloud storage	0.428	0.189
23	PUR	Since public university students have a Microsoft account, they should upskill through Microsoft certificates	0.556	0.076
24		Graduates should use Google to search for new ideas and inspirations for their work	0.469	0.146
25		Graduates should use Artificial intelligence (AI) apps like ChatGPT to facilitate their work	0.503	0.115
26		Mobile learning (learning on gadgets) is convenient as users can learn anytime anywhere	0.313	0.348
27		Social media provide bite-sized (short) content for learning which is preferred by some students	0.598	0.052
28	ADV	Education 4.0 enables employers to see a collection of work samples made by graduates	0.525	0.097
29		Just the interview alone is not enough for employers to decide on which candidate to hire	0.545	0.083
30		Education 4.0 tools help graduates gain skills that will enhance their employability	0.585	0.059
31		Using AI apps like ChatGPT saves a lot of time for graduates	0.543	0.084
32		Reflective practice helps lecturers to improve future lessons	0.556	0.076

33		With online training, employers save cost on accommodation and travel	0.396	0.227
34		Education 4.0 tools will make graduates lose social skills due to lack of real-life human interaction	0.522	0.100
35	DIS	Graduates will lose confidence from Education 4.0 because they rarely meet other	0.348	0.295
36		Using Education 4.0 tools are not cheap because it requires gadgets that are not outdated	0.324	0.331
37		More plagiarism will occur because it is easier for users to copy-and-paste	0.445	0.171
38		Adaptable	0.542	0.085
39	PQ	Disciplined	0.466	0.148
40		Loyal	0.166	0.625
41		Instructional Design	0.156	0.648
42	ES	Language	0.239	0.479
43		Leadership	0.574	0.065
44		Problem-solving	0.457	0.157
45		Graduates' CGPA is not important to employers	0.183	0.590
46		Being ethical does not guarantee a quality worker	0.327	0.326
47	IMP	A good teamwork ensures the goals of the company are achieved	0.078	0.820
48		Teamwork is not important because every employee has his/her own roles	0.489	0.127
49		Hardworking employees are more important than nice employees	0.458	0.157
50		Leadership skill affects decision-making in the workplace	0.483	0.132
51	CP	Employers provide tasks during interview to check whether the candidates are able to perform their work or not	0.329	0.324
52		During interview, employers check candidates' preparedness by asking them what they know about the company	0.416	0.203

53	Employers prefer candidates with experience compared to those who have a high CGPA	0.126	0.713
54	All public higher education institutions (HEIs) are following an outcome-based education with intended programme outcomes	-0.051	0.882
55	Universities appoint industrial advisors for syllabus feedback to match the current industrial needs	0.426	0.192
56	Reflective practice is included in outcome-based education syllabus that is being practiced in all public higher education institutions	-0.044	0.898
57	Having a network from previous part-time jobs will help graduates to find and secure jobs later	-0.027	0.936
58	Professional networking sites like LinkedIn and JobStreet can help graduates to find jobs without the hassle of travelling	0.418	0.201

The table below shows the items in the initial instrument that was used to collect data for the first round of FDM.

Table 3.16 Initial Instrument

Effectiveness of Metacognitive Strategies for Learning sustainability and Employability through Education 4.0

Part	Domain	Definition/Instruction	No	Tested Item
1. Metacognitive Strategies for Graduate Employability and Learning Sustainability	SS	Showcase self is a strategy that graduates use to showcase themselves to be more visible towards employers through resume, portfolio/e-portfolio, preparation before job interview and self-presentation during job interview.	1	Students should utilise Education 4.0 tools to build an e-portfolio since Year 1
			2	Graduates should include success stories (i.e. achievements, awards, participations during university) in their e-portfolio
			3	E-portfolio should be made compulsory as a part of programme assessment during university
			4	Video resume should be taught to all students in university
			5	Video resume acts like a pre-interview before graduates are called for a job interview
			6	Graduates should practice answering questions before going to the job interview
			7	Dress up during a job interview affects the chances to be employed
	SI	Self-improvement is a strategy that graduates use to improve themselves to increase the chance of employment through improving time management and stress management skills as well as identifying goals, passions and potentials.	8	Students submit assignments late because they lack time management skill
			9	Students ask for assignment extension because they lack time management skill
			10	During university, students should identify their career goals to increase employability
			11	During university, students should identify their passion to excel in their programme

		12	During university, students should identify their potentials to refine skills and talents
EX	Exposure is a strategy used by graduates/students, lecturers, universities and industries to help students gain experience related to career; through part-time job, participation, courses offered in university, engagement with alumni, university-industry engagement, and guidance and resources.	13	Students should actively participate in extra-curricular activities to gain experiences
		14	University should invite alumni to share their working experiences for the current students to gain exposure
		15	University should organize industrial visit for students to gain exposure of real-life working experiences
		16	University should have a project-based course for students to gain exposure of real-life working experiences
		17	Lecturers should have passion in delivering knowledge to produce a highly employable graduate
		18	Lecturers with prior experience in the industry will be able to provide the exposure to students
		19	Lecturers should provide exposure to the work process or procedure to be done later in the workforce
		20	Lecturers should provide additional resources for students to refer
SG	Self-study and Study Group are strategies that graduates use during self-learning and individual revision or together with friends in study groups through finding the right circle, reading, note-taking, annotations (remarks on any topic/paragraph being studied) and sharing of knowledge/passion.	21	Students should improve note-taking skill to remember what they have learned better
		22	Annotations (short notes) help students remember what they have learned better
		23	Students should share their knowledge and passion through social media
		24	Sharing knowledge and passion improves students' communication skill
		25	Sharing knowledge and passion improves students' presentation skill
		26	Sharing knowledge and passion helps students remember what they learned

		27	Students should start learning digital skills like graphic designing and video editing during university
		28	It is easier for younger people like university students to learn digital skills compared to older people
CD	Career Development and Training are strategies that graduates use to upskill themselves or trainings that employers provide to help employees upskill themselves with new knowledge and technology to match the current industrial needs.	29	Training and career development programmes encourage employees to feel appreciated
		30	Besides salary, training and career development programmes encourage employees to stay loyal to the company
RP	Reflective practice is a strategy that graduates and lecturers use to help students sustain their learning, remember what they have learned and apply the knowledge in their career.	31	Reflective practice helps the industry to identify the knowledge that graduates have gained during university
		32	Reflective practice helps the industrial managers to report to their superior
		33	Reflective practice helps students to remember what they have learned
		34	Reflective practice helps students to improve on skills that they are lacking
		35	Reflective practice helps the lecturers to improve future lessons
TA	Teaching approaches are a strategy that lecturers use to help students sustain their learning and become highly employable when they graduate later.	36	Lecturers should include more real-life tasks and assessments to help students remember what they have learned better
		37	Lecturers should provide examples that are relatable to students so they will remember better
		38	Hands-on activities are better than lecturing for students
		39	Hands-on activities provide an exposure to what graduates will face in their career later
		40	Hands-on activities help students to improve problem-solving skill

2. Education 4.0	PUR	How Education 4.0 tools are used by graduates, lecturers and employers to help graduate employability and learning sustainability.	41	Employers should utilise professional network sites like LinkedIn to seek new employees
			42	Lecturers should expose students to the knowledge of software used in the workplace
			43	Lecturers should expose students to Education 4.0 tools that students can use to build an e-portfolio
			44	Exposure to software that is used in the workplace helps graduates work efficiently
			45	Graduates should utilise mobile apps to build resume
	ADV	How Education 4.0 tools benefit graduates, lecturers and employers in terms of graduate employability and learning sustainability.	46	With Education 4.0, employers are able to filter out candidates before selecting them for the job interview
			47	Education 4.0 may act as a fast track for graduates to be called immediately for an interview
			48	Education 4.0 adds an added value for graduates to be called for a job interview
			49	E-portfolio helps employers differentiate values between each candidate
			50	Education 4.0 tools help to solve problems at the workplace
			51	Education 4.0 provides exposure to graduates to be prepared with the software that they will use later in their career
			52	Education 4.0 encourages graduates to explore other technology tools to work better
			53	Creating resume using an app saves a lot of time
			54	During university, students should utilise Microsoft 365 because it is free
			55	It is convenient to use Education 4.0 tools to submit assignments which then can be included in graduates' e-portfolio
			56	Employers can seek employees easily using professional networking

			sites like LinkedIn without hiring a recruiter
		57	Graduates should utilise Education 4.0 tools to generate income during university
		58	By having an e-portfolio, students will produce the best work for their assignments
		59	Resume-making apps provide customisation features
		60	Reflective practice serves as notes for students to remember what they have learned
		61	Learning online saves time for students because there is no commuting to class
		62	There is vast knowledge available on Google which allows students to learn everything they are interested in learn
DIS	The drawbacks of using Education 4.0 tools affect graduates, lecturers and employers in terms of graduate employability and learning sustainability.	63	Graduates will become inefficient in their work because they know they can just search everything online
		64	Some Education 4.0 tools that graduates learn during university will become outdated by the time they join the workforce
		65	There is no variety in resumes when graduates use templates from resume-making apps
		66	With professional networking sites like LinkedIn, employers may waste time during hiring process due to bad candidates who faked details on their profile
		67	Technology-dependent graduates may fail to work efficiently when there are limitations like poor internet connection
		68	Freedom of speech on social media is affected because employers may do background checks before hiring
		69	Miscommunication may occur more due to online meetings and training
		70	Students may misinterpret some information because what they learn

				from social media is incomplete
			71	With social media learning, students will get easily distracted from pop-up ads and unrelated contents
3. Skillsets	PQ	Personal Qualities that make up the skillsets of a graduate. Listed below are 9 Personal Qualities that make up the skillsets of a graduate. Please rank each quality with 1 as the most important through 5 as the least important for graduates to have to be highly employable.	72	Knowledgeable
			73	Independent
			74	Hardworking
			75	Confident
			76	Passionate
			77	Persevering (Tough)
			78	Ethical
			79	Respectful
			80	Quality worker
	ES	Employability Skills that make up the skillsets of a graduate. Listed below are 4 Employability Skills that make up the skillsets of a graduate. Please rank each skill with 1 as the most important through 5 as the least important for graduates to have to be highly employable.	81	Communication and presentation
			82	Critical and creative thinking
			83	Digital
			84	Teamwork
	IMP	Importance of Skillsets describes why the skillset is important or not important according to graduates, lecturers and industrial experts.	85	Working experience is more important than having a degree
			86	Problem-solving and creative thinking are not compulsory for all industries
			87	Being independent is important because industries provide minimal guidance
			88	Quality workers are important because time is money for employers

			89	Graduates who are adaptable can adapt well even with low technology
			90	Low confidence will give a bad impression towards the company
			91	Good communication helps to solve problems in the workplace
			92	When employees are passionate, they will produce high-quality work
4. Current Practice	CP	Current practices at three levels: industry, university and alumni	93	Employers use professional networking sites like LinkedIn to find potential employees
			94	E-portfolio alone is enough for employers to determine the candidates' abilities to work
			95	Employers always call the referees to check the graduates' behaviour in the previous company/university
			96	E-portfolio should be made compulsory for all programmes in universities
			97	Graduates always update their resume for easier job application process later
			98	Graduates always do prior research on the company that called them for a job interview

d. Data analysis procedure

In this study, once data is collected from the questionnaire, it was analysed through two rounds of the Fuzzy Delphi Method. Fuzzy Delphi Method consists of two key concepts which are known as Triangular Fuzzy Numbers (TFN) and Defuzzification (Manakandan et al., 2017). In this study, the researcher used Microsoft Excel software for data analysis. A Microsoft Excel template developed by Mohamad et al. (2015) has been adapted for this study. In the template, the formula for the calculation of Triangular Fuzzy Numbers and Defuzzification were pre-saved. The researcher adapted it by filling in variables like the number of experts, the number of items for each construct and each expert's Likert scale score for each item. Once the values are entered, TFN and Defuzzification will automatically be calculated based on the pre-saved formulas entered in the template. This process is repeated for each construct in the questionnaire.

Triangular Fuzzy Numbers

Manakandan et al. (2017) noted that Triangular Fuzzy Numbers (TFN) are fuzzy numeric data converted from Likert scale scores based on the experts' responses to the questionnaire given earlier. There are three values for the researcher to consider in each recorded response which are: 1. The average minimum value (n_1), 2. Most reasonable value (n_2), and 3. The maximum value (n_3). The rationale behind TFN is to prove the indefiniteness or fuzziness of the experts' opinions (Manakandan et al., 2017). There is a level of ambiguity in each response made by the experts which cannot be addressed using the Likert scale because of its fixed score nature. The following table shows the difference between Likert scale scoring and Fuzzy scoring for a five-point scale.

Table 3.17 The difference between Likert scale scoring and Fuzzy scoring for a five-point scale

Likert Scale Scoring	Linguistic Variable	Fuzzy Scoring
5	Strongly agree	0.6, 0.8, 1.0
4	Agree	0.4, 0.6, 0.8
3	Neutral	0.2, 0.4, 0.6
2	Disagree	0.0, 0.2, 0.4
1	Strongly Disagree	0.0, 0.0, 0.2

An example of TFN conversion is when an expert scored 5 (Highly Agree) on an item, the TFN scores are 0.6, 0.8 and 1.0 for minimum, most reasonable and maximum values. In other words, the expert consensus on the item is 60%, 80%, and 100%. The fuzzy scores will then be averaged and indicated as m1, m2 and m3 for Defuzzification later.

In the Microsoft Excel template, there are 8 steps to analyse data using the template. The first three steps are for researchers to fill in the title and construct, the total number of experts who participated and the fuzzy scale scoring. For Step 4, the researcher keyed in the data by filling in the Likert scale score for each expert. The number of items was adapted and edited according to each construct in the questionnaire. For example, in the construct Showcase Self, there were 7 items tested. Expert 1 responded with ‘Strongly Disagree’ and its Likert scale scoring is 1. Then, the researcher filled in ‘1’ in the Microsoft Excel. Whereas, for item 2, Expert 1 responded with ‘Strongly agree’ and its Likert scale scoring is 5, so the value ‘5’ was entered. This process is repeated for each item of the construct based on the responses given by each expert.

Defuzzification

The defuzzification process ($A_{\max}$) identifies the level of importance of each item through ranking (Manakandan et al., 2017). Ranking is conducted to determine whether an item is retained or discarded. It was calculated based on the formula below:

$$A_{\max} = 1/3 * (m1 + m2 + m3)$$

Validity and Reliability of Fuzzy Delphi Method

Manakandan et al. (2017) discussed the validity and reliability of the Fuzzy Delphi Method which are determined by three prerequisites:

- i. The threshold value, d-construct should be ≤ 0.219
- ii. The expert consensus on the questionnaire items should be $\geq 75\%$
- iii. Items within a construct are ranked correctly according to the average fuzzy numbers

Firstly, the researcher calculated the difference between the average fuzzy number and each expert fuzzy number using this formula:

$$d(\bar{m}, \bar{n}) = \sqrt{\frac{1}{3} [(m1 - n1)^2 + (m2 - n2)^2 + (m3 - n3)^2]}$$

Then, the researcher calculated the threshold value (d-construct) using this formula:

$$\text{Threshold Value (d-Construct)} = \frac{\sum \text{Average Threshold Value, (d) for each item}}{\text{Total Experts x Total Items in Constructs}}$$

Once the value was obtained, the researcher determined whether to remain or discard each item. Referring to the prerequisites discussed previously, the item is accepted if the threshold value (d-construct) is ≤ 0.219 and the expert consensus is $\geq 75\%$. As for the ranking, items were ranked within their respective constructs after the researcher conducted the Defuzzification process.

In the template, the formula was entered to calculate the threshold value for each item across all experts. Then, the average of threshold values of all items was calculated to obtain the threshold value for the construct. Threshold values that are more than 0.219 and the expert consensus that are less than 75%, cells were marked red using the Conditional Formatting feature in Microsoft Excel (see figures Step 6 and 7). This was convenient to help the researcher identify which item is accepted and which is to be tested for Round 2 of FDM. In the screenshot below, it can be seen that the threshold value for item 1 is 0.199 whereas the threshold value for the construct is 0.197.

LANGKAH 6: MENENTUKAN NILAI 'd' (THRESHOLD VALUE)							
PAKAR	ITEM						
	1	2	3	4	5	6	7
1	0.9	0.2	0.0	0.0	0.3	0.1	0.2
2	0.0	0.1	0.0	0.3	0.6	0.1	0.2
3	0.3	0.2	0.3	0.0	0.0	0.1	0.2
4	0.3	0.2	0.3	0.9	0.9	0.1	0.7
5	0.0	0.2	0.0	0.3	0.3	0.1	0.1
6	0.0	0.1	0.3	0.0	0.3	0.1	0.1
7	0.0	0.1	0.3	0.0	0.0	0.2	0.1
8	0.9	0.4	0.6	0.3	0.3	0.1	0.2
9	0.0	0.1	0.0	0.0	0.0	0.2	0.7
10	0.3	0.1	0.3	0.3	0.3	0.1	0.2
11	0.0	0.1	0.6	0.0	0.0	0.2	0.2
12	0.0	0.2	0.3	0.3	0.3	0.2	0.2
13	0.0	0.2	0.3	0.3	0.0	0.1	0.2
14	0.3	0.1	0.0	0.3	0.0	0.2	0.2
15	0.3	0.1	0.3	0.3	0.3	0.1	0.2
16	0.3	0.2	0.3	0.0	0.0	0.1	0.2
17	0.0	0.2	0.0	0.3	0.3	0.1	0.2
18	0.0	0.2	0.3	0.3	0.3	0.1	0.2
19	0.0	0.2	0.3	0.0	0.0	0.2	0.1
20	0.0	0.1	0.0	0.0	0.0	0.2	0.1
Nilai d setiap item	0.199	0.168	0.235	0.202	0.214	0.139	0.218
Nilai d konstruk	0.197						

Figure 3.12 Screenshot showing Step 6 calculating threshold value of item and construct

LANGKAH 7: MENENTUKAN PERATUSAN KESEPAKATAN SETIAP ITEM DAN KESELURUHAN ITEM											
ITEM	1	2	3	4	5	6	7	8	9	10	11
Bilangan Item d ≤ 0.2	12	19	7	9	9	20	18				
Peratus Setiap Item d ≤ 0.2	60%	95%	35%	45%	45%	100%	90%				
Peratus Keseluruhan Item d ≤ 0.2	67%										

Figure 3.13 Screenshot showing Step 7 the expert consensus percentage of item and construct

Referring to both figures Step 6 and 7, the threshold values of all the items are ≤ 0.219 . However, only items 2, 6 and 7 were accepted due to high expert consensus percentages of 95%, 100% and 90% respectively. These three items fulfilled both the prerequisites which their threshold values are equal to or less than 0.219 and expert consensus of more than 75%.

The Defuzzification process or $A_{\max}$ was calculated in Step 8. The formula was entered to obtain $A_{\max}$ value which is indicated as the average fuzzy number. Then, each item was ranked based on its average fuzzy number. The higher the average of fuzzy numbers, the higher the item is ranked. In this case, item 6 was ranked as '1' within the construct because it has the highest average fuzzy number of 0.730, whereas item 1 was ranked as the last in this construct because of its low average fuzzy number of 0.587.

LANGKAH 8: DEFUZZIFICATION - PROSES MENENTUKAN SKOR (KEDUDUKAN / KEUTAMAAN ITEM)																					
Bagi proses defuzzification, terdapat 3 rumus yang boleh digunakan untuk menentukan ranking/skor bagi Item, Rumusnya adalah seperti berikut:															$I. A_{max} = 1/3 * (m_1 + m_2 + m_3)$						
															$II. A_{max} = 1/4 * (m_1 + m_2 + m_3)$						
															$III. A_{max} = 1/6 * (m_1 + m_2 + m_3)$						
ITEM	1			2			3			4			5			6			7		
JUMLAH SETIAP UNSUR	8.00	11.60	15.60	9.80	13.80	17.80	7.80	11.80	15.80	8.40	12.20	16.20	8.20	12.00	16.00	10.60	14.60	18.60	9.80	13.80	17.80
	m1	m2	m3	m1	m2	m3	m1	m2	m3	m1	m2	m3	m1	m2	m3	m1	m2	m3	m1	m2	m3
FUZZY EVALUATION	11.733			13.800			11.800			12.267			12.067			14.600			13.800		
SKOR	7			2			8			4			5			1			2		
PURATA SETIAP UNSUR	0.400	0.580	0.780	0.490	0.690	0.890	0.390	0.590	0.790	0.420	0.610	0.810	0.410	0.600	0.800	0.530	0.730	0.930	0.490	0.690	0.890
	m1	m2	m3	m1	m2	m3	m1	m2	m3	m1	m2	m3	m1	m2	m3	m1	m2	m3	m1	m2	m3
AVERAGE OF FUZZY NUMBER	0.587			0.690			0.590			0.613			0.603			0.730			0.690		
SKOR	7			2			6			4			5			1			2		

Figure 3.14 Screenshot showing Step 8 Defuzzification process

ITEM	NILAI SKOR		RANK
	FUZZY EVALUATION	AVERAGE OF FUZZY NUMBER	
1	11.733	0.587	7
2	13.800	0.690	3
3	11.800	0.590	6
4	12.267	0.613	4
5	12.067	0.603	5
6	14.600	0.730	1
7	13.800	0.690	2

Figure 3.15 Screenshot showing the ranking of each item within the construct

3.6 SUMMARY

This chapter discussed the research design, data collection method, selection of participants, instruments to be used and discussions on pilot study, validity and reliability. The data analysis procedure was explained in the later part of the chapter.

CHAPTER FOUR

QUALITATIVE DATA COLLECTION ANALYSIS OF DATA AND FINDING

4.1 INTRODUCTION

This chapter discusses the findings that the researcher has found based on the data analysis conducted. The findings that the researcher will discuss are based on the two research questions which are: 1. What are the required metacognitive strategies to enhance learners' employability and learning sustainability through Education 4.0 from the perspective of experts, lecturers and alumni? and 2. How does Education 4.0 enhance learners' learning sustainability and employability from the perspective of experts, lecturers and alumni? The third research question is answered in Chapter Five: Quantitative Data Collection. This chapter starts by introducing the demographic information about each informant which is then followed by the findings based on the research questions posed. The interviews were conducted in the English language for all the participants with some mixing of the Malay language. Some interviews were conducted mostly in the Malay language as the informants were more comfortable answering in Malay. The researcher has translated the informants' responses from Malay to English. The original verbatim is attached in the appendix for reference.

4.2 DEMOGRAPHIC INFORMATION

As stated in Chapter Three, the informants were selected via the purposive sampling method. A total of nine informants were selected for the semi-structured interview. There were three categories of informant which were industrial experts, lecturers, and university alumni. A summary of their demographic information can be seen in the table below.

Table 4.1 Demographic Information of Informants

Category	Informant	Gender	Industrial sector	Job experience (years)	Education level	Education programme	Current role in the industry
Industrial experts	1	Female	Construction	35	Bachelor	Architecture	Project architect
	2	Male	Oil and gas	11	Diploma	OSH	OSH Officer
	3	Male	Manufacturing	14	Master	OSH	OSH Auditor
Lecturers	4	Male	Education	24	PhD	English Language and Literature Education	Assistant professor
	5	Male	Education	5	PhD	Physics Education	Assistant professor
	6	Female	Construction	20	PhD	Civil Engineering	Associate professor
Alumni	7	Female	Finance	8	Bachelor	English Language and Literature	Life planner
	8	Female	Education	2	Bachelor	English Language and Literature	Junior Lecturer
	9	Male	Finance	9	Bachelor	Manufacturing Engineering	Tax officer

4.3 METACOGNITIVE STRATEGIES THAT ENHANCE LEARNERS' EMPLOYABILITY AND LEARNING SUSTAINABILITY THROUGH EDUCATION 4.0

This section discusses the answers to the first research question, which is 'What are the required metacognitive strategies to enhance learners' employability and learning sustainability through Education 4.0 from the perspective of experts, lecturers and alumni?' From the interviews conducted, it was found that seven metacognitive strategies enhance learners' employability and learning sustainability through education 4.0 as shared by the experts, lecturers and alumni. The strategies stated can be seen in Figure 4.1 below.

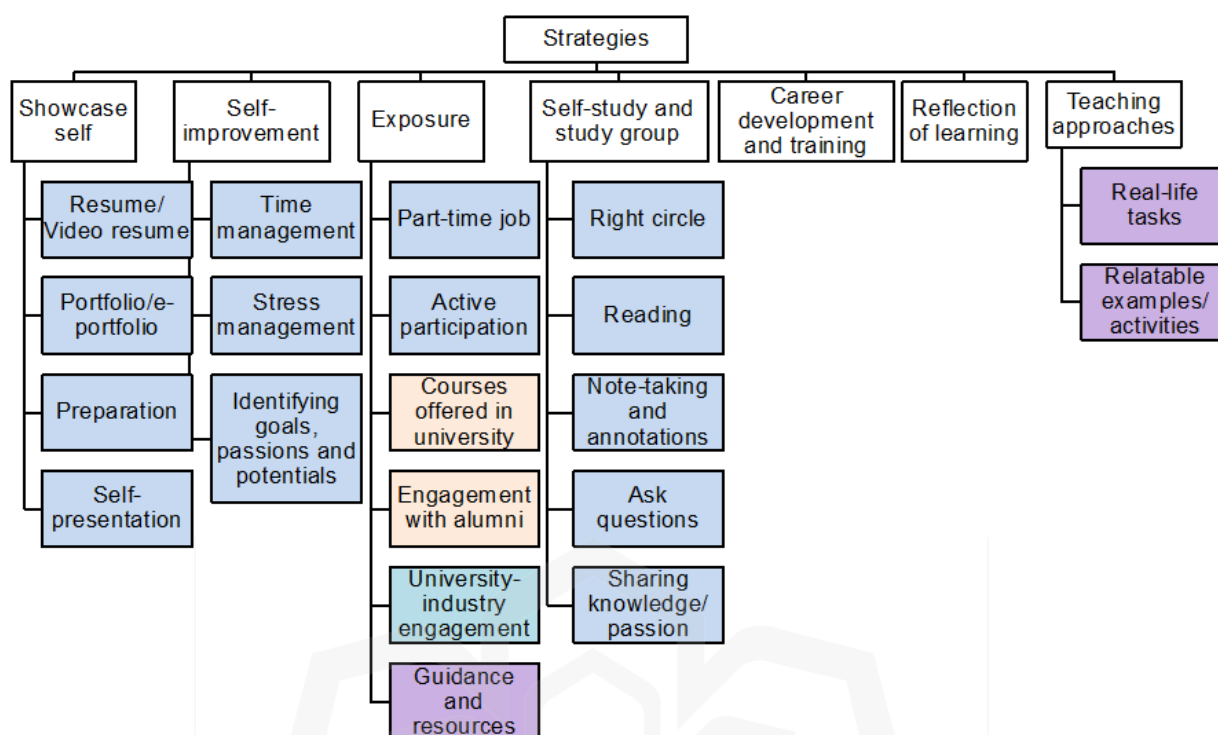


Figure 4.1 Metacognitive that Enhance Learners' Employability and Learning Sustainability through Education 4.0

The sub-strategies are colour-coded according to the informant category. Strategies that are coded blue are employed by the students and graduates. Peach represents the strategies employed by the universities. Teal indicates the engagement from the industries and purple indicates the strategies employed by the lecturers.

4.3.1 Showcase Self

This metacognitive strategy consists of four sub-strategies which are: 1. Resume/Video Resume, 2. Portfolio/e-portfolio, 3. Preparation, and 4. Self-presentation.

4.3.1.1 Resume/Video Resume

A resume is a written summary that outlines a person's educational background, work history, and skillset; and a video resume is a resume prepared in a video form usually in 60 seconds duration to grab employers' attention, allowing them to learn more about graduates' experiences, achievements, and character (Shore et al., 2021). Graduates are able to showcase themselves through their resume or video resume. Informant 3 who is an expert in the industry stated that with artificial intelligence (AI), graduates are able to build their resume and portfolio to showcase themselves to potential employers.

“...build their portfolio using education 4.0 tools... Yeah. They can go like nowadays have.... The AI resume one.” (DU124I3)

Informant 4 advised graduates to set themselves apart from other candidates by incorporating Education 4.0 tools such as a video resume and e-portfolio. These tools will help to promote and make the graduates stand out more to employers rather than just using paper resumes.

“And don't just rely on a traditional paper resume... to prove yourself because there will be other candidates who have the same qualification, who have the same certification, who have the same, more or less the same resume as these students, what sets them apart? So, it's this kind of promotion or packaging that they need. So, in my case, what I'm trying, what I'm training my students to do is to package themselves in the form of e-portfolio or video resume, so that this can carry the promotion for this can be their branding.” (DU36I4)

Informant 7, an alumna from a public university, highlighted the importance of a professional-looking resume. According to her, the resume is the first thing that employers see before graduates are called for a job interview. Graduates should do a spell-check, include a suitable picture and arrange the overall layout of their resume neatly. An organized resume reflects the personal quality of the graduates which might attract the employers.

“In my resume, it needs to look professional. And no typo. For example, the photo in the resume. Don’t put a selfie picture. Even if the company is laid back, our resume is our first impression. It is our image. It represents us. Because the employers don’t see us first, they see the resume first. So if our resume is professional-looking and neatly organized, employers know that the employee is organized. But if there’s a typo, employers know the kind of employee that they will get.” (DU192I7)

Besides professional-looking resumes, Informant 8 shared that graduates should learn how to write their resumes. She learned how to build a resume from Christian preachers that her university invited back when she was studying. Some examples are the kinds of information that graduates should include. She also learned some informal words to be avoided when building a resume.

“So they taught me... how to write the bio section and also, erm I remember they say not to use this word in an interview, like words like “stuff”, words that are not formal” (DU228I8)

According to Informant 9, another strategy for graduates to showcase themselves is by including success stories from past experiences during university or past companies. Instead of just listing down responsibilities that graduates have held, they should also include their achievements and success from those particular roles. These act like a punchline to the resume which will enhance graduates’ employability.

“They can put, their successful story during university. We call it a punchline, because in comedy, we have a punchline also, and in resume, we have a punchline. It’s different if you put inside the resume inside the JobStreet, uh, “My duty is... to learn something or to prepare...” that’s a normal sentence, right? But, punchline in the resume, like, uh, “I managed to lead the team to win the blah, blah, blah right there”. A lot of achievement, so once the company, looks into your profile, and then they say, “Oh, it’s very good.” Uh, so it could become one of an advantage for you. (DU108I9)

4.3.1.2 Portfolio/e-portfolio

An e-portfolio is essentially a digital version of a portfolio, containing work samples and evidence of learning created by students. It is presented electronically, often through websites, PDF files, or other applications (Syzdykova et al., 2021). Portfolio or e-portfolio is complementary to a resume which might help to enhance graduate employability. Informant 3 advised graduates to include evidence or proof related to their past work experiences to showcase that they have the skills that the employers are looking for.

“Related to the work. If he worked in a safety field, then maybe... Any safety....portfolio that is related to the job can be.... attract for the interviewing selection. So, for example, any safety initiative or safety project that they did previously.... they can include.” (DU138I3)

As shared by Informant 8, certificates are one of the learning evidence that graduates can include in their portfolio. She added that she included a certificate from a competition that she had joined previously when she was studying.

“In terms of certificates, yes. I bring files to show them during interview. For example, I have a certificate for joining an Arabic competition. That’s a plus point for me.” (DU194I7)

Meanwhile, Informant 4 suggested that e-portfolios should be compulsory for all students during their university years. E-portfolio will serve as a promotion to help them package themselves and convince employers of their values even before being called for a job interview.

“So, e-portfolio, for example, it's one of the ways. Video resume for example, it's one of the ways to enhance and this should be made compulsory for all students to have this, to have this promotion, to have this packaging of their skillset so that they can promote themselves even before... they don't have to wait until the day of the interview to convince employers that this is who they are.” (DU34I4)

Unlike Informant 4, Informant 9 stated that portfolios are only needed for some university courses. He also added that he did not have a portfolio when he was studying Engineering back then.

“I think maybe because of the course that I learned, because normally, in Engineering, they, learn about technical things. So, in this portfolio, I don't think that we have any of that. Maybe it's not, it's not for every course. Maybe some, some courses they need a portfolio.” (DU134I9)

4.3.1.3 Preparation

Preparation before going for a job interview plays a role in helping graduates to become employable. Informants 3 and 7 stated that while doing preparation, graduates should do a little research on the company that called them for the job interview. This shows that the graduates are serious about working for the company and not just applying for any job available.

“Because if people... willing to go serious, they will study a bit on company that they want to go to the interview.” (DU74I3)

“I need to prepare. In terms of... research a bit about the company. So that I can answer if they asked me about the company.” (DU190I7)

Besides doing a little research on the company, graduates should also study the tips for a successful interview. Informant 8 suggested using Education 4.0 tools such as YouTube or Google to study the tips. Graduates can study the tips as well as practice for the job interview weeks before the interview date to help them become more eloquent which will lead to enhanced employability.

“If you want to go for an interview, you can go on YouTube and Google “How to be good at an interview”. And there are a lot of tips given and those tips are extremely, extremely helpful. Especially for those who are.... eloquent from the start. They are very good at it. They just need some tips on how to make it right. But for those who... are not very, they don't come naturally at that... at an interview, they could, it still help them. But they have to start watching... all these videos from early on. Maybe a few, a couple of weeks before the interview. So I do think it does help, with employability.” (DU218I8)

Informant 9 prepared for going for a job interview. He was asked to prepare a presentation as well as take a test during the interview. He prepared and made sure to give his best during the interview.

“Before I join, uh, based on my experience, the task assigned to me is I need to give a presentation during the interview. And, uh, plus I need to.... um, because, uh, there's a test, like, call as a role-playing test, that means I act for the task that was given to me. So, uh, during that time, I just make sure myself to give the best.” (DU90I9)

Besides preparation for a job interview, Informant 9 also shared a preparation tip to get promoted in a career. Graduates should identify a skill or value that differentiates them from others and makes them valuable to the company. After identifying the value, they must prepare and show it to the company to increase the chance of getting the promotion. In Informant 9's case, he is always ready for any task assigned and will not be afraid to go to the front to lead or present the project.

“So if you want to be promoted to a high position, you have to... prepare yourself and show the company, the things that differentiate yourself from others....” (DU32I9)

“Because when, when I jump into the job market, I will say to myself, even though I am assigned any task, I would not be scared, I'm ready to stand in the front, even though, even though, my superior asked me to present about, a project, or to give an explanation to the client about some things. So I'm ready to, go to the front, the front, and give the presentation. That's what I said, when we jump into a job, outside of the university, the thing is, we have to compete with others, every time we have to compete with others. So that's why we have to find the reason that will differentiate us, just from them.” (DU84I9)

4.3.1.4 Self-presentation

Self-presentation or the way how one presents oneself during a job interview will enhance employability. As shared by Informant 7, how one dresses up for a job interview will influence the employer's decision whether to hire the candidate or not. Dressing up will reflect the company image so graduates should dress up neatly and the style should be suitable for the industry that they are going to.

“...another point that I missed is dress-up.... aa self-presentation. Because if you work in the corporate world, this is important as well... employer will take note of whether you are... well-dressed or not. For example... simple lah. Women have a lot of hijabs [hm hm], and there are a lot of hijab styles. So, if her hijab style is not neat, it will represent the image where she is working as well.” (DU142I7)

Informants 7, 8 and 9 stressed showing confidence during a job interview to enhance employability. Confidence is reflected through a good voice projection as added by Informant 8. When graduates speak with confidence, employers will trust them to be able to do their tasks successfully.

“Then confidence can be seen during interview. When we are confident, employers will hire.” (DU186I7)

“Even the voice projection. When they are talking, they don't hold back at all.

...Because... when your voice projection is good, sometimes people get intimidated by you. Which is a very good thing, because you want that confidence that you could... that you want that confidence from them, that you could handle a certain project or a certain task.” (DU114I8)

“Example... during the presentation time, so I just make sure I ensure myself to deliver the presentation very well. And, when the.... interviewer, when they ask me a question, so just, I just ensure myself to answer the question confidently.” (DU90I9)

Informant 8 suggested graduates show their strengths and skills during the interview that will make them valuable to the company. Informant 8 shared an example of how she showed her strengths during the interview. Firstly, by speaking English well to show her strength in language. Then, she showed her passion by sharing her experience in doing voluntary work.

“Basically, what I did was erm definitely speaking in English. So, I show my strength in the... language. At the same time, I try to share with them all the voluntary work. Oh yeah, I forgot to mention this before. I did a lot of voluntary work. Erm... I helped to teach the refugees, which is something that I truly, truly like, for erm a couple of months. And while doing that, I showed my passion as well.” (DU190I8)

Besides self-presentation during job interviews, Informant 5 gave a bit of advice to graduates once they are in the workforce. He advised them to learn how to handle being in the spotlight to avoid other people from taking advantage of them.

“So, you need to know how to be in the spotlight too. And sharing the spotlight. Or if that person is not qualified to be inside your spotlight. So, you need to make sure that that person doesn't go into your spotlight. So, because the corporate world is a little bit cruel, I would say. Because if you don't do that, other people will take advantage of you. That is the thing.” (DU48I5)

4.3.2 Self-improvement

There are several strategies that graduates should use to improve themselves for future employability which include: 1. Time management, 2. Stress management, and 3. Goals, passions and potentials.

4.3.2.1 Time Management

Informant 8 highlighted that students nowadays lack time management skills. They often submit assignments late and this will be an issue in the future because when the students start working, due dates are usually non-negotiable. Informant 8 added that time management is a lifelong learning skill which students need to practice over time in order to be good at it.

“One of the things that I always think that a little bit lack in nowadays student, nowadays student a little bit lack on punctuality, especially in submitting the assignment itself. That is one thing that they should improvise... Because when you go to the real world, when you work in the company, the due date is not negotiable, usually.” (DU60I5)

“Because managing time is a lifelong learning skill. So, at a certain age or in life, you need to manage your time between your school, your playtime and your sleep time. Maybe that's it. But when you become a worker, there will be another time management set, when you become a father, parent or anything else, the time management is always changed from time to time. So, they need to practice.” (DU60I5)

Informant 1 shared a tip that might help students to improve their time management skills. Students should build their portfolios early and wholeheartedly to show the learning process. They should not wait for the final semester to build their portfolio because it is a meticulous process.

“Very detailed. *Jangan buat kerja lepas batuk di tangga* (Malay proverb that means lack of enthusiasm). You must do it wholeheartedly. Don't wait for the final semester to build your portfolio. Because you could show your learning process.” (DU290I1)

4.3.2.2 Stress Management

According to Informant 8, stress management is a skill that all graduates should learn as work-related stress is common in the workforce. Unfortunately, she had to learn it the hard way as she was diagnosed with an autoimmune disease that results in eczema flare-ups. The symptoms appeared after she started working and her doctor advised her to manage her stress level.

“But erm for... I think what is more important is aa stress management.” (DU74I8)

“... It was about work.... So, I had to handle something... that I didn't really want to do, but I couldn't say no.... And I got so stressed out about it. And then what happened was... it was actually, it is still affecting me now. So, what happened was I got erm... an autoimmune disease.So, this first came out because of the stress. So, for you to aa be healthy again, the doctor said there's no cure. What you need to do is try to manage your stress level.” (DU80-82I8)

4.3.2.3 Goals, passions and potentials

Informants 1, 4, 5 and 8 stressed the importance of identifying goals, passions and potentials for graduates to become highly employable and successful in their careers. Informants 1 and 4 added that many students are clueless in terms of their career goals, what their plans are after they graduate and what their passions are. If they can set their goals ahead, they will make suitable preparations to meet the goals and enhance employability.

“Some students now.... I mean a lot of students these days, their problem is... they are still soul-searching. They don't know what they want until towards the end. But if they can pinpoint what they want, prepare themselves for it, they can be highly employable.” (DU120I4)

“In the first place... you should know... what do you want to be exactly? You see? When you take the course, you already have a plan for where you're going after you graduated. You already have an ambition... at least you need to have a goal, at the end, what do you want to be...? If along the way, you develop a new interest... you find that course is more interesting... that is another matter lah. But at least, at the beginning... you know lah...” (DU292I1)

Informant 8 shared a tip to help graduates plan their goals by listing a few plans such as Plan A or B. Then, list out the pros and cons of each plan to help them make a decision on which plan to follow.

“...maybe the students can.... erm from now on, have a goal. What they want to do in their life?What they can do is they can just weigh the pros and cons. What are the fields that could lead to a less stressful life for example. So by having that goal and deciding, you know, maybe they could Plan A, Plan B, Plan C? (DU128I8)

Informant 5 stated that he believes in multiple intelligence whereby every individual has many potentials and can excel in many areas. However, most are not aware of them because they do not explore them. As a lecturer, he tries to become the catalyst that influences the students to explore their potential.

“Yeah, because I believe that I believe in multiple intelligence itself. So, people can be excelled at many things, actually. Some people, they only think that they are good at education, but they're not good at something else, but actually they are good at many things. It's just that they don't explore or they don't tap into that area. So, they need to... They need some catalyst, I will say. So, I will try to be that catalyst for them to explore their other potential.” (DU54I5)

As a lecturer, Informant 6 shared that she is able to identify the students who already know their goals, passions and potentials. And these students are able to work independently and become great leaders.

“It depends on the students. So, if this student is really an active type, sometimes from the first year, we can already see that he has the skills, the ability for him to work on his own. We can see sometimes how he can create the team, right? We see his leadership, sometimes we can see it even from the beginning of the first year.” (DU36I6)

4.3.3 Exposure

There are several ways for graduates to get exposure for enhanced employability which include: 1. Part-time job, 2. Active participation, 3. Courses offered in university, 4. Engagement with alumni, 5. University-industry engagement and, 6. Guidance and resources.

4.3.3.1 Part-time Job

Doing a part-time job is a great strategy for students to gain work exposure which will lead to higher employability as suggested by Informants 7, 8 and 9. Informants 7 and 8 highlighted communication skills as one of the benefits of working part-time.

“If you think you can manage working while studying, then, working part-time is good for you. Because you’ll gain more benefits.” (DU140I7)

“I also worked part-time during that time... in the campus... I also communicated with people from different levels and backgrounds. Because I worked as a hairdresser at a saloon. When I worked there, I learned a lot... Communication skills... how to talk to someone higher level... and so on.” (DU138I7)

“I feel like if you start something early, maybe a business and whatnot, it would help you to come up as someone who is more... knowledgeable, someone who is convincing when they are talking, someone who could persuade people, and when they give information, they could give it in a... coherent way. And easier for other people to understand.” (DU106I8)

Informant 9 shared that a part-time job will benefit students to prepare themselves because they will be able to see the real situation of their future work life sooner rather than later.

“...for those who are involved in studying Business or Accounting, they can slowly start... what we call business, small business just has a side income, and then at least they can... prepare themselves, or they can... see the real situation outside of university, so rather than just wait... until they've been graduated, they can slowly prepare themselves.” (DU60I9)

4.3.3.2 Active Participation

Besides working part-time, students are also able to gain exposure by actively participating in activities outside of the classroom. Informant 1 advised students to meet lecturers outside of the classroom to get feedback on assignment improvements. This is crucial as assignments will be included in graduates’ portfolios.

After you complete a task, you meet the lecturer to get feedback... and then you revise, of course, you'll get a better product. You work hard. Jangan main-main. (DU288I1)

Other than meeting the lecturer for feedback, participation in extracurricular activities during university helps students gain exposure and experiences. Students can join clubs or participate in competitions as discussed by Informants 6, 7 and 9. Students will learn communication, presentation and leadership skills from involvement in extracurricular activities which will increase their values to stand out more among other graduates in the future.

“The students need to be active from the beginning. Must be active, participate.” (DU41I6)

“.....sometimes we expose them to... like... enter tournaments. Like sometimes there are also competitions, like for example, UTM will often hold a bridge building competition. So we expose them to that. It means we expose them to outside activities.” (DU46I6)

“I would suggest them to participate more in social activities... For example like going to social events... or joining competitions that require them to be more outspoken... even more like volunteering... in classes is okay too... as simple as that.” (DU134I7)

“During my study in IIUM, during my time... I involved a lot with the society and program also. So I think things like involvement in the program society... taught me a lot of leadership skills, communication skills, social skills and these kinds of skills, I used a lot during my job career. It helped me so much.” (DU24I9)

Informants 3 and 8 advised students to join voluntary works and CSR (corporate social responsibility) activities to gain further exposure. By doing volunteering work, students will meet people outside of their regular circle which will help them to build networks.

“Participation in extra activities. They should participate in outside universities. Like clubs. Clubs or.... any CSR activities with the NGOs. Or industry. Mainly, they are... They are.... see more people lah... Talk to people. Talk to strangers. Talk to people who you never know before. Because your network is not only your university friends.” (DU116-120I3)

Informant 8 suggested to start doing voluntary work early while students do not have financial commitments yet.

“I believe that yes, they should start volunteering early on before they have all this commitment. Because once you have commitment, you will start thinking about all the cents that you spend.” (DU198I8)

4.3.3.3 Courses offered in university

Based on the interviews, students will gain exposure to certain courses offered at the university. Informants 2 and 7 highlighted the importance of courses that focus on the development of soft skills such as presentation and communication skills. Informant 2 stated that presentation assignments should be made individually to help develop confidence among students.

“Maybe... university can have a more aa presentation paper....not as a grouping, group presentation. Individual. Because, once.... individual presentation.... so, they’re going to have aa increase the confidence level.... in terms of the presenting. When in a group, so only selected people will present....the remaining will stay silent, smiling at the back.” (DU206-210I2)

“I think aaa more soft skills. Like presentation... and how to approach people... how to initiate conversation... how to have a conversation with people... higher level than us.” (DU88I7)

Informants 1 and 8 both highlighted the importance of offering courses that focus on using language for occupational purposes such as writing reports, writing emails, managing meetings, becoming an MC (master of ceremony), and so on. According to Informant 1, current graduates were not exposed to the proper way of writing reports.

“They must have the skill in report writing. So there must be exposure to report writing. And then, when they go for practical... they write reports, but it’s written casually... Not really. Not detailed. So I wish they were given a proper...report writing. The right way to write reports.” (DU300-304I1)

“Erm I feel that they could teach us how to use erm language in a more formal way.” (DU48I8)

“And so, write letters as well. Like maybe, formal letters, aa request, email, how to request stuff from a different department, erm how to manage a meeting, how to be the MC for a formal event. (DU58I8)”

Informant 8 added that having the skill to use language formally and professionally, will help the graduates to be promoted in their careers.

“Because I feel like these are the things that are, like, will help you to climb the social ladder at work. Yeah, because if you're good at that, I think people will recognize you, and you might get a promotion better.” (DU58I8)

Informant 3 discussed the need for all universities to offer ethics as a compulsory subject. According to him, graduates nowadays lack the ethics to work in an *amanah* way. He mentioned that when he was studying in Japan, ethics was a compulsory subject.

“Aa ethics lah. Because nowadays, graduates don't have ethics. Ethics in everything, ethics. Ethics, good manners, respect for people, no bribe. Because if you have a good or very brilliant person but no ethical, then they will do evil. Because I think local university still don't apply ethics as one of the... compulsory subjects to the candidates. I'm not sure. But when I study in Japan, ethics is one of the... compulsory subjects. So, in ethics, normally they mention that you cannot bribe, you cannot do....that means you perform your work in ethics lah... in an *amanah* way.” (DU152I3)

Informants 4 and 6 suggested universities include courses that focus on digital skills and the latest technology tools. Informant 4, a lecturer teaching Instructional Technology subjects to TESL (Teaching English as a Second Language) students, discussed the benefit of learning digital skills like Instructional Design subject which will help enhance the students' work later when they become teachers.

“So this... program, minor in IT gives them the ability to teach beyond aa what their major is preparing them for. Okay. They have another layer of skillset, where they teach... aa their teaching is enhanced with technology. Their teaching is enhanced with the knowledge of Instructional Design. Their teaching is enhanced with the knowledge of Visual Literacy. So this allows them to explore or to design or to develop more efficient, more engaging more active learning experience for their students.” (DU12I4)

According to Informant 6, some subjects in her university focus on trending technology because it is always changing. She added that students should never stop learning about new technology even after they graduate.

“Often we also have in certain subjects... the subjects will focus on a lot of the latest technology available that is being used. This way, the students understand that knowledge does not stop at the university. Meaning, new technology is always there, developing and they have to be aware of things like that.” (DU46I6)

4.3.3.4 Engagement with Alumni

Besides offering courses that will help students, engaging with alumni will benefit students to gain the exposure needed as discussed by Informants 6 and 9. Informant 9 suggested universities invite alumni to come to the campus for a sharing session. Alumni may share their experience in the work field which helps students to get an overview of what is coming.

“...maybe they can gather again all of the alumni and do like the sharing session. So the alumni of the university can share their experience and knowledge with the students... So... Before the students they jump, before they jump with the real job market outside... so they can prepare themselves based on the explanation or sharing from the alumni.” (DU26I9)

As a lecturer, Informant 6 shared that she stays in contact with some of the alumni. Some ex-students came back to her for updates or to further study in the same institution as they did their degree before.

“They used to be my FYP. It means that I am their supervisor for a project, final-year project. They are furthering their studies now, in the middle of doing a PhD. I mean I have expected before (that they will further study). Then, for the students who are outside the industry... there are some students who returned to us. "Now I have started doing this kind of project". They had been leading a project, a certain project. They tell the story with a sense of pride, right? So, we are also happy when we hear that. Because it's not easy to have students who want to return.” (DU54I6)

4.3.3.5 University-industry engagement

Informants 3 and 6 stressed having a collaboration or an engagement between universities and industries to help students gain the exposure needed for their employability. Informant 3 suggested a project-based course or assignment that students can apply in the industry. This can be done during the third year of studies before their internship.

“It's like, for example, they learn this thing. So they ask their students to do their actual testing in the industry. For their assignment... To get an engagement with the industry. Maybe the third year is okay. Not as an internship. Just like a project-based. Whatever they learn, they can apply to the industry. The good thing is they can provide actual reports to the industry. They can present to the industry. So, actually, it's a real lifetime good exposure for them.” (DU142-146I3)

In Informant 6's faculty, there is a subject that already engages students with the industries. This provides the opportunity for students to build a network with the people in the industry which helps them to find jobs later when they graduate.

“But at the same time, we actually involve our students a lot with... during their studies, we also involve them a lot with activities that are attached to the industry. Besides from going to industrial training that I said earlier, they also always involved in things like for example, when they are in their Final Year, they have a subject called Engineer in Society. So, this subject will give them the opportunity to engage more with the industry. For example, they need to find an industry to help them solve some problems... So sometimes, that's when they actually take the opportunity to look for a job when they graduate later” (DU16I6).

The industries were invited to provide feedback to the students during their final year presentation, added by Informant 6. This helps improve the students' work quality and they learn how to fulfil the industrial needs.

“Towards the end of the semester, they have to present their project, and we invite the industry experts during the final year project, which is the last one, to give a real assessment. The industry comes to provide feedback, usually it's very good, to show whether the work or research done meets the quality as a student, who is capable when they work later, as an engineer, they can solve the problem that I mentioned just now.” (DU3616)

4.3.3.6 Guidance and resources

Apart from the university-industry engagement, guidance and resources by the lecturers in HEI play a crucial role in enhancing graduate employability. It is an advantage for the students to be taught by lecturers who come from industrial backgrounds, as shared by Informants 1, 5 and 6. Informant 1 stated that with the experience that the lecturers have gained in the industry, they are able to impart knowledge that is parallel with what is being practised in the industry.

“The lecturers' knowledge should be parallel with the practising- what do we call... with the outside practice....The lecturers' knowledge and approach. So, it's the lecturers that are important. I think the syllabus is okay already.” (DU19211)

As lecturers, Informants 5 and 6 guided the students by sharing stories of their experiences as well as providing freedom to students to produce their designs parallel with the industrial needs. Informant 5 guides his students with his stories so that they are no longer afraid to face career life once they graduate later. This benefits those who do not have anyone in their lives who can give suitable advice about the career line that they chose, he added.

“But for me, I’m just sharing the story. So that, they can understand that this world, whatever world, they are right now. It’s not even the real world yet. Because, back in my days, there is no human being that wants to share about this real world with me. So, I want them to have someone to share a little bit, so that they are not scared to jump into their career life. (DU50I5)

“So, basically, this one, one of the benefits that I think is that, back in my days, I don’t have someone to... enlighten me with this kind of information. So, since I do have, and I do see some people that have the potential to be in this area, so why not I help them? So, that’s the main point.” (DU18I5)

“We guide them. They have the freedom to make decisions, how they want to design. Usually, our guidance matches what the industrial is asking.” (DU100I6)

Informant 3 discussed an issue of the lecturers furthering their studies without any exposure from the industry. They will face the challenge of sharing the current industrial practice with the students.

“But when you talk about the lecturers from the beginning of the institution of education, means the lecturers do not have exposure to the industry. So, it's hard for them to talk about what’s happening in the industry.” (DU148I3)

Informants 1, 4, 5 and 8 discussed how guidance and resources should be provided to students. Informant 1 suggested the lecturers guide the students by sharing with them the knowledge or practices that students should know before they go into the industry. For example, in Informant 1’s case who is an expert in the architecture industry, she suggested the lecturers share architecture design requirements for different types of buildings.

“They are exposed to the process of architecture what aa firm requirement. They are already exposed... because like architecture buildings, they have a lot of aa you know, housing, commercial, hotel, institution. So the students must be exposed to the design process for all these different types. Ha because of the difficulty, the scope is different. It’s different when you design houses compared to commercial buildings. Aa the requirement is different. Aa ha. So, in... we want to see when they show their portfolio, do they show building types, that means they have been exposed to residential, they’ve been exposed to commercial. They’ve been exposed to institutional. Or traditional, cultural buildings... ha....” (DU46I1)

On top of what is being taught in the syllabus, Informant 4 guides his students to be independent. He always shares learning resources in their Telegram communication group for the students to do self-study.

“I teach them not to depend 100% on my sharing. And I also... always supply them with additional information in the LMS, in our communication group. In this case, I use Telegram with my students. In this case, I use Telegram with my students. So... on top of what is in the syllabus, okay, I prepare them a buffet of learning resources, that they can access on their own, where they can self-study on their own to help them improve on the understanding of what I say in the classroom.” (DU84I4)

As for Informant 5, he guides the students to learn persuasion as a communication skill. His students are in an Education programme whereby they are trained to become high school teachers; hence, persuasion is an important skill to master.

“I always remind my students of those who want to become teachers. Persuasion is always the best option when you're dealing with other people, especially with their students, one of them. Because nowadays, students are no longer need to be afraid of their teachers. They need to be... friendly with their teacher.” (DU12I5)

Informant 8 shared her experience when she was in university learning from a lecturer who guided the students by having open discussions with the whole class. She claimed the discussions held in the class guided by the lecturer taught her creative thinking skills. She felt celebrated as every point of view was welcomed.

“Yeah. So, what I said, this is what happened in the literature class. We did not really argue, but we discussed, with the lecturer interrupting from time to time. Because they know better... So, with all this knowledge, we do it with our reading, but at the same time, with the help of our lecturers as well. So, that is how it helped me in creative thinking, helped me to realise that nothing is black and white.” (DU180I8)

“It feels good to be... able to point out your point of view, without feeling judged. Meaning to say, you are celebrated. You feel celebrated, just by aa speaking out loud what you have in your mind. So, if it's in a normal classroom, with typical lecturers, maybe... aa you will feel judged.” (DU183I8)

Informant 1 stressed the importance of having passion among lecturers. Lecturers who are passionate about guiding their students will produce high-quality graduates.

“But... the lecturers.... do the students understand or not? Because not all lecturers are good, right? That means the lecturers should be experienced, they should have passion, and they really want to educate the students. Meaning, that they don't go to work for the sake of their salary, in the end, they don't care whether the students understand or not. Do you see my point?” (DU164I1)

Similarly, Informant 8 shared the same point of view. She suggested the lecturers guide the students to improve their presentation skills, particularly on voice projection. According to her experience, some of the lecturers themselves were not passionate.

“I feel like our lecturer should probably say this to our faces, that when we talk, they should highlight the voice projection more. Because I don't think any of the lecturers said this. Even when they are talking, I don't think that they... are very... enthusiastic about it. You know, sometimes I feel like some of them are just... reading the text.” (DU114I8)

4.3.4 Self-study and Study Group

From the interviews conducted, self-study and study group are found to be one of the strategies that could enhance graduate employability and learning sustainability. The sub-strategies include: 1. Right circle, 2. Reading, 3. Note-taking and annotations, 4. Ask questions, 5. Sharing knowledge and passion, and 6. Learn digital skills.

4.3.4.1 Right circle

Informant 7 suggested a way that is suitable for students to do self-study, especially for those who do not have the time to do some reading. She suggested they find the right circle to have discussions on knowledgeable topics.

“Maybe you can find another way? Instead of reading, something that suits you, maybe like intellectual discourse... you can have a chat with friends but on topics that increase your knowledge?.... We need to have the right circle.” (DU167-168I7)

4.3.4.2 Reading

Informants 7 and 8 suggested reading as a self-study strategy to help students develop skills like problem-solving and language skills for their future employability.

“We need to read a lot. Because I think it helps with problem-solving.” (DU166I7)

“And he (the lecturer) would say “Start reading newspaper every day. It's not like we want to believe everything that we read in the newspaper. But by reading newspapers, of course, it would make us more knowledgeable. After we read, we could decide whether we want to believe it or not. We can make the judgment ourselves.” But it was- it definitely helped me to become more mature. And erm you could get more, you learn more vocab as well.” (DU158I8)

4.3.4.3 Note-taking and annotations

Informant 8 suggested students improve the way they take notes and do annotations. Annotations are short notes or thoughts usually written on stickers to be read later during revisions. Writing helps students to remember better, Informant 8 added.

“...some of my friends, they are very good with note-taking. So maybe improve on that as well. What I have started to do is, whenever I read something, I do annotations.” (DU124I8)

“So I think that the annotations are basically, have you seen people reading the Quran, and they have all the stickers? So usually that is annotations. So whenever you read something, whatever you're feeling about it, you just write it in the book. Whatever points that you learn from it, or you could relate it to your life, whatever that you're feeling inside, whatever emotion that you feel while reading that. So you just write it down. The thing is when you go back and reread it again, a few years later, you might feel different about it. But you are still able to revisit the memories that you had before this. About a certain paragraph or a certain phrase.....Because aa there's research I think, saying that when you write things down, it would help you to memorize things better. And especially when you relate it to your life.” (DU126I8)

Informant 8 also shared her experience learning note-taking skills from a lecturer back then. According to her, boarding school students are usually trained in note-taking skills.

“What I learned from her (lecturer), it's definitely how to take notes. Okay. Because when she was teaching me, she taught me through the notes that she had. And back then, like I said, I wasn't from a boarding school. I'm not a boarding school student. So, I wasn't trained with that. I just read and whatever that I remember, I remember, whatever that I don't is like, whatever. So, she taught me that, so I would say note-taking.” (DU158I8)

4.3.4.4 Ask Questions

Informants 5, 7, 8 and 9 discussed asking questions as one of the strategies students are able to do during self-study to enhance their employability and learning sustainability. Informant 5 highlighted the importance of asking questions so graduates could avoid making mistakes in doing their jobs later.

“Because I believe when you work with other people, you need to ask everything until you get the clear picture of what that client or that people need you to do so that you don't make mistakes. So, asking. So, the next point is asking, asking questions. You need to know to ask questions.” (DU60I5)

As a lecturer, Informant 5 also encourages his students to ask questions in class, even if they are unrelated to the topic of the day.

“Because I do understand that back in my days, I was being scolded by my teacher because I was asking a lot of questions...I always say to my class, “You can ask anything, even though it doesn't really relate to whatever I teach, I want you just to ask. Maybe something a little bit related should be okay, but doesn't always have to be something academic to us, to me. Just as the practice of self-to-ask question.” (DU60I5)

As alumni, Informants 7, 8 and 9 resort to asking questions to improve their knowledge, gain experience and adapt to a new working environment.

“I think if they don't know something... they need to find alternatives... because sometimes we don't know something, but we just let it be and didn't do anything.” (DU136I7)

“And try to erm just be active by asking others... like for example, I asked you a lot, right? Because you were a lecturer before... for many years. So, I did ask you whenever I cannot deal with the students... or I had trouble in dealing with them.” (DU146I8)

“But when I change my career to Accounting I try the best to adapt myself and then just learn, gain the experience and knowledge from senior workers.” (DU20I9)

4.3.4.5 Sharing knowledge and passion

Informant 8 advised students to start sharing knowledge and passion online because every person has their own strengths and things that they are very good at. It helps students to develop skills like presentation, communication and digital skills, as discussed by Informant 8.

“I feel like what the students should start doing right now is... try to use all this platform to share knowledge as well. Like I said, erm my husband is a UX writer. Sometimes he does this free talk... The one that you’ve joined before, right? So, erm eventually, of course, he wants to start making money out of it. But right now, he just wants to do it because he is very passionate about it. And he wants to be better at the... erm presentation skill at the same time. So, I feel like everyone is unique. Everyone has their own erm strength. Things that they are good at. So, they should share it... online.” (DU13618)

Informant 8 shared the skills that students will develop from sharing knowledge and passion through a story of a French girl she follows on Instagram. The girl likes to feed stray animals and she sells custom jewellery to continue feeding the stray animals. Through her sharing, she learns communication and digital skills by meeting new people and setting up a website.

“So, having something like this would definitely help them to become more mature. One of the, you know, on Instagram, I followed one kid. She... is French and she lives in Bali. So, what her parents did was they start an Instagram page for her. She really, really loves animals. So, every day she would help and feed street cats and stray dogs. So, she didn't do this for the profit, but they established a.... website as well. So... she did her own custom bangle and she sold it online.she gets to do whatever she likes, which is feeding the cat and the dog. She also learned business. She learned to set up a website. She learned aa giving to people, communicating with others.” (DU14218)

4.3.4.6 Learn Digital Skills

Informants 2 and 8 advised students to start developing digital skills early to enhance their future employability. According to Informant 2, they are facing the issue of lacking digital skills as they have to do design tasks themselves. Good designs will deliver a message effectively, he added.

“On the design. (Learn design). Because... nowadays, when we talk about digitalized, so it's more to designing. So when you have a good design, so easy to deliver the message to the end user.....No. (We don't have a designer) We have, aa we are going to design ourselves lah.” (DU152-156I2)

Informant 8 suggested students develop video editing skills because it is easier for younger people to learn new technology as they are more used to it. Digital skills like these will also make the students more valuable to future employers, she added.

“I would say erm... video editing.... because students right now, they are very good at editing they could do TikTok videos, that would probably take them maybe 15 minutes... that would take us half an hour, or maybe more, maybe one hour, just because we are... not used to it. So, I feel like, yeah, video editing is something that I feel is very, very valuable.” (DU130I8)

4.3.5 Career Development and Training

Informants 1, 2, 3 and 9 stressed career development and training provided by the employers to help the graduates to develop their skills further. Informant 1 suggested employers send staff for training to learn new software. However, due to small capital, the company that she is working at does not provide this training.

“Company should provide learning and upskilling opportunities for the staff... like to learn new software. They should send staff. But our company, we don't have that lah. Because our company is considered medium lah, around 20, 15 staffs. So... medium range. And then, aa our capital is not that big. right... limited resources.” (DU238I1)

As for Informant 2, he suggested finding the right organization for an internship as not all companies will provide the right training that will develop skills among graduates.

“This one this one, usually, we will start to....teach them after hire. During the internship, we guide lah. So that’s why, very important to find....the right post aa organisation. Because, some of the organisations, they hire internship just to do all the....clerical tasks, photocopy... that one, my children can do.” (I2)

Career development and training opportunities are different in different organisations. In Informant 3’s workplace, he stated that there is a fixed biweekly training provided to the staff. The staff have the freedom to join the training or not. If they decide to join, the time slot will be booked and they will not be disturbed with other meetings.

“So for example, when you have the day of the, already have blocked for training. But because there is no official of blocking the time. So sometimes people call you for... meeting. People call you for any other jobs. So in my present company, every two weeks they already have this kind of schedule of fixed training. So it's up to you if you want to accept it or not. So it's a half day... four hours. So biweekly, they will have that kind of training slot. So if you want to accept it, then for this time, it will block your calendar.” (DU60I3)

As for Informant 9, general training is provided; however, employees still need to train themselves while working on the job.

“My company, they do provide training. But most of the time I just need to undergo on-the-job training, which means I trained myself... during the progress of the job. It means it's not a specific training for me.” (DU20I9)

Informants 3 and 5 discussed the benefits of training which include loyalty among employees and added values among graduates to be more visible to the employers.

“Because when you talk about working, it's not only on salary. There are certain people who look only for that, salary. But... for the long term, it's not about salary.” (DU64I3)

“...because... people is actually your most important asset. So... if you don’t develop your people, I mean your resources of the workforce... then the whole company will not move forward... So normally in a local or a Malaysian organization, they commonly they..... they neglected on the... career development. Because the most important is “this is your work, you need to do it.” So it becomes like a... routine job when people start to feel bored with their normal because there is no innovation from whatever they do. Do the same thing every day. And people get bored and they have no assignment on their part and they feel that they are not developed. So that maybe there is a reason people keep jumping to other companies.” (DU62-64I3)

“Everyone has a degree in teaching, but what is the added value? So, I always remind them to find something to add, to be added in your resume, in your... skills. So, that you are become different from other candidates.” (DU20I5)

Informant 5 suggested students use Education 4.0 tools for online training such as Google Educators or Microsoft certificates since all students have a Microsoft account. Later, these certificates can be included as added values in their resumes.

“And one of the things is that, nowadays, there's a lot of digital certificates that they can get online. And we always strongly suggest they get a Google Educators certificate, if I'm not mistaken. And then, since all students have Microsoft accounts, Microsoft also provide a lot of other certificates that are valid internationally, so that they can use and put inside the resume.” (DU20I5)

4.3.6 Reflection of Learning

Reflection of learning that students share at the end of a learning session or writing reports to their superior helps them to enhance employability and sustain learning, as discussed by Informants 1, 2, 3, 4, 5 and 6.

This practice provides a few advantages. When the researcher asked whether this practice is helping the industry or not, Informant 1 stated that it helps employers to see graduates’ skills and they can decide which candidate to select for the job. As for Informant 2, he shared that 70% of what the graduates learned in university is applied in the industry while the other 30% require employers’ guidance. Informant 3 shared that by looking at the graduates’ reports, employers can identify their ability to

perform in their jobs. Employers are also able to report to the upper management on the work activities that have been done.

“Oh yes (it helps the industry). We can see their skills. That they really learned and were knowledgeable. Some people study and pass the exam. But when we ask... they cannot relate... right... they forgot... or they study just to pass the exam at that time. So do they really understand and digest or not?” (DU266I1)

“Yes (it helps the industry). But not all lah. Because usually, when you study, you study 100%. So, when comes to the industry, and only apply about... 70%. The remaining....does not reflect lah to the activity in the industry...

...expert in the industry, provide the other 30% guidance.” (DU292I2)

“Because when they can perform the report, then we understand the job that they performed. So, we know they do the job or they don't do the job. And also it's easier for us to report back to our management on whatever activities that they have been carried out by them, based on the report.” (DU166I3)

Informant 4 shared that with reflection on learning, students can revisit and improve on skills that they are lacking. This practice will help their future employability. Informant 5 added that the reflections will serve as notes to help students remember and sustain their learning better. Meanwhile, both Informants 4 and 5 believed that lecturers are able to improve their teaching from the weekly reflection on learning that students share.

“So, they can revisit their e-portfolio, they can revisit their reflections, they can aa you know, reflect what else do they need to improve themselves to make themselves ready, for the job market. It helps me to improve my teaching as well. So their reflection, for example, helps aa allow me to evaluate my own teaching.” (DU90I4)

“Well, basically, one of the purposes of doing reflection is for them to, I would say, as an exercise for them, to reflect on what they have learned so that they remember and it serves as notes for them, actually. And then, this weekly reflection also is a good method for me to reflect on my teaching too.” (DU34I5)

Based on Informants 5 and 6's sharing, a reflection on learning acts as an evaluation for the lecturers to improve the upcoming semester.

"...from there, I can improve myself. At the same time, I can understand better my students, what they need and what can be added more in the next lesson or the next semester. So, reflection does help both parties, the student and also me, to understand each other better." (DU34I5)

"Towards the end of the semester. Usually, they (students) will do an evaluation again. To the lecturers. To the knowledge that they have... I mean, we... like... measure again. Before the semester, the students had an entrance survey. The name of the entrance survey... That means we will ask some questions. Questions related to the subject. To measure whether they know or not about that thing." (DU82I6)

As a lecturer, Informant 5 looked forward to reading his students' reflections which helped him to predict the students' future success in their assignments.

"I become looking forward to reading their reflections because of whatever they read, because whatever they share there. So it is really interesting to see. And then from there, they reflect on their assessment too. So I can see that these students do well in these two parts, which is the reflection and also the assessment, which makes them stand out from the other students." (DU66I5)

4.3.7 Teaching approaches

The lecturers' teaching approaches play a vital role in students' learning sustainability as shared by the informants. There are two sub-themes found which are: 1. Real-life Tasks, and 2. Relatable Examples and Activities.

4.3.7.1 Real-Life Tasks

As lecturers, Informants 5 and 6 gave real-life tasks as assignments to their students. Real-life tasks such as creating something, doing experiments or going for site visits help the students sustain their learning, as discussed by Informant 6.

“...when I do assign tasks to them, the tasks should be related to whatever I teach in class, and try to test out their ability to create something based on whatever I teach in class.” (DU62I5)

“Okay. Topic 1 is about grammar. So, they digitalise that to make it more interactive using all the new educational technology apps, and then, they can publish it and share it with the school to test out inside the class.” (DU32I5)

“For example, maybe for the activities... we go for visits, site visits, like that. Those usually give impacts to the students.” (DU46I6)

Informants 7 and 8 suggested lecturers include more hands-on and real-life tasks as students' assignments. Informant 7 gave an example where the students are asked to be involved in projects such as cleaning the river but they need to do everything from writing the proposal to presenting the final report. Real-life tasks such as these will provide exposure to the students and when they enter the workforce, they are already used to these tasks, she added. Informant 8 stated real-life activities develop their language skill to sound more professional.

“So for other subjects, we need to have more hands-on. Something that we can practice. Something that is similar to the real world. Or real-world tasks. Like university events like cleaning the river... or planting trees... real tasks. But the students need to do it from scratch. From the proposal, meeting the sponsors, going to the place to ask for permission, all that. So when they do that, they'll learn a lot. So that when they graduate, they have the experience. They know how to prepare a proposal, to write a letter to ask for permission, to communicate with the director, because they are used to it.” (DU180I7)

“I think we should probably carry like a... mock meeting. Yeah. And then more dialogues used in a formal setting, erm include more vocabs, jargons, things that actually worthy, that would actually make us sound more... professional.” (DU114I8)

Informant 9 suggested students be exposed to the work environment besides going to class every day. This will help them to see the real situation and prepare for their future employability.

“Previously when I studied Engineering, so I just looked into the syllabus and just looked into the books, right? Books, articles taught by the lecturer. But I don't see the... I don't get the.... at least the brief.... brief view of the real situation of the job....maybe students that undergo studies in IIUM, rather than just go to the class every day. So they will be exposed early to the job outside.....if the students are exposed earlier to the job outside, during the- while they go to the class every day, at least they can prepare themselves, right? Not in a position of culture shock. When they jump into the job market someday.” (DU154I9)

Following on the above point, Informant 9 stated that industrial training is usually at the end where the students are only focused on graduating and not so much on learning. Hence, industrial visits during the first or second year will provide the overview that students need to see and prepare for their future.

“I know, I am aware that the university already implements what we call industrial training, right? The training, but normally industrial training, students will undergo this kind of training during the final year. So I don't think it's enough for them because during that time, they... normally prepare themselves to graduate, so they don't think much about the knowledge that they learned during the training. So maybe the university can plan from the beginning, from the first or second year for the industrial visit.” (DU160I9)

One of the advantages of experiencing real-life tasks is it helps students to remember what they have learned. In other words, it enhances their learning sustainability, as discussed by Informant 7. She stated that the books that lecturers refer to when teaching are sometimes not up to date with the current practices in the industry. She also stressed lecturers to be up-to-date with the current industrial practices, whereas students should take the initiative to know what is trending in the industry and not rely on the lecturers alone.

“I think it helps if lecturers include more real-world tasks. It makes it easier for us to remember what we learned. Because what's in the books sometimes they are not up to date. What we learned, and then when we work, the reality is different. And then employers will ask “You didn't learn this in university?”. In fact, we learned it, but the books are not up to date.” (DU216I7)

“So, what I’m saying is the lecturers need to be up to date with the industry’s expectations. But at the same time... the students shouldn’t wait to be spoon-fed. They should take the initiative to self-learn.” (DU216I7)

Informant 7 shared her experience taking subjects where the lecturers use real-life scenarios as parts of their assignments. According to her, learning through practical tasks is more impactful than writing tasks where students can easily copy and paste.

“I think we have a subject focused on this. During the last semester... What was it? Aa English for... Occupational Purpose, if I’m not mistaken. I don’t really remember... But we learned how to prepare meeting minutes... and how to organize aa event from scratch... from writing the proposal... and then how to... aaa organize the event lah. That one helps a bit.” (DU88I7)

“When we do practical tasks, we learn better and more compared than writing task, students can copy-paste...” (DU176-180I7)

As lecturers, Informants 4, 5 and 6 included real-life tasks to help students develop their employability skills. Informant 4 gave authentic assignments such as projects to create interactive e-books where the students are able to apply the knowledge they learned in class. The skills learned from the projects help the students to sustain their learning because they learn by doing, he added.

“So by giving them or by assigning them projects, or authentic assessment, they will learn the skills in a way, and these skills will remain because they learn it by doing, not by remembering. So once they do, it sticks.” (DU30I4).

“I give them a project to create interactive e-books, for example. Okay. So this is a real e-book that can be shared with people right away once they complete the project and this trained them how to prepare learning materials, self-instructional materials for learners out there, not just something that they memorize and answer in the exam.” (DU32I4)

Besides giving real-life tasks, Informant 4 also encouraged his students to explore the current technology and tools that the industry is using to prepare for their future employability.

“...we use the, the current tool at the moment of teaching what is available in the market, tools that they need or tools that are current on that time and we encourage them to explore on their own... when they go out there in the job sector in the next five years, next six years, come whatever tools, current in the market on that time, they can still apply the same foundation.” (DU32I4)

Informant 4 added that he sets the culture of working environment that is similar to a micro company. He does not treat his students as students but as colleagues.

“So by giving them projects, the environment, and the vibe feel like a small, micro company. So I don't see them just as my students, I see them as my employees as well. So I could see their potential. So it's like working with them. So the barrier of student-teacher is less, but it's more like a, you know...like colleagues.” (DU94I4)

Informant 5 gave a project with five real-life tasks that the students needed to do for their course. The students had to start from the proposal stage up until the presentation stage. From the project the students were able to gain the work exposure needed, he added.

“There is only one project for them to manage, but the project is separated into five different stages. One of them is to create a proposal, second is they need to create a storyboard. After that, they need to... present their storyboard. And then they need to present their project development, and also the final presentation and final report. Yeah. So, from then on, they can see that when managing a project, there are several stages that they need to go through because if they skip one stage, the project will become hard to manage. So, the process is the main thing that I want the student to understand in that process, basically.” (DU28I5)

In Informant's 6 faculty where she is teaching, it has a subject that focuses on real-life tasks. The students are exposed to normal work processes and procedures that help them prepare for their future careers.

“...aside from theory, actually the students are exposed to more practical, practical skills... (DU16I6)

“In their final year, we have this subject called IDP, Industrial Design Project. Actually, this subject contains all the knowledge that they have....if they did the subject, they have covered the PO (Programme Outcome) actually. So this subject, it’s like they are already working. Like a consultant, they need to design the building. So, like civil engineers, meaning they need to know the issues with soil, with water, all that, right? All that and the requirements from the authority. All that they need to know. (DU92-94)

Informant 9 shared his experience taking a subject that has real-life tasks. He claimed that the subject and lecturer taught him valuable knowledge which he managed to apply in his career.

“First, I call this Design of Engineering, one of the subjects and the lecturer taught us very well about the subject, about the knowledge of the subject, because when I jump into the market, job market, and I work as an Engineer, so then I realize that subject is related so much with my job career. So that’s one time that I thank a lot to the lecturer because of the way how he taught us... and then made us understand about the subject, and then I managed to use it so I can improve, I can shine during my job.” (DU70I9)

4.3.7.2 Relatable Examples and Activities

Informants 8 and 9 suggested lecturers include more examples and activities that are relatable to the students.

“So, they could provide examples that are relatable to our life. Because the thing is, I think, aa linguistics is very erm theoretical. So I feel like I would forget things easily when it comes to those subjects.” (DU46I8)

“...what can I say about IIUM lecturers, most of them will just teach the students... based on the syllabus. Based on the book. So maybe they can improve some more by relating what they teach the students with the real situation of the... job outside. At least... we can relate what the thing, the topic or the knowledge that we learned during the study... and we know exactly where we want to use that kind of knowledge when we work someday.” (DU28I9)

Informants 4 and 8 always try to teach using examples and contexts that are relatable to the students. For example, Informant 4 is always up to date with the trending technology and tools to match the needs of the current generation of students. He always encourages them to explore new tools that will help them become better teachers in the future.

“So I have to keep on learning. And I have to keep on learning as well to teach my students, the current generation of students, new ways, new technology. So it's the same mindset, the same characteristic that I'm trying to inject into my students when they go out to become educators themselves. You have to keep on learning.” (DU70I4)

Informant 8, a lecturer teaching English language from the General Studies Department, said she uses relatable examples and activities to help her students remember the lesson better. Her students' English proficiency is average, but they enjoy her class and this helps improve their vocabulary.

“I always tried to scout the internet for a very good article online. Something that is on my students' level of English. At the same time, I want it to be relatable and not boring for them. So, it is very hard because their English level is not so good... For example, maybe heartbreaks or something that I feel like they would remember. Because whenever they read a text, if they remember, it will be better for them to remember all the new words.” (DU152I8)

4.4 HOW EDUCATION 4.0 ENHANCES LEARNERS' LEARNING SUSTAINABILITY AND EMPLOYABILITY

The second research question of this study is 'How does Education 4.0 enhance learners' learning sustainability and employability from the perspective of experts, lecturers and alumni?'. From the interviews, two themes were generated which are Purpose and Advantages. The themes and sub-themes can be seen in Figure 4.2 below.

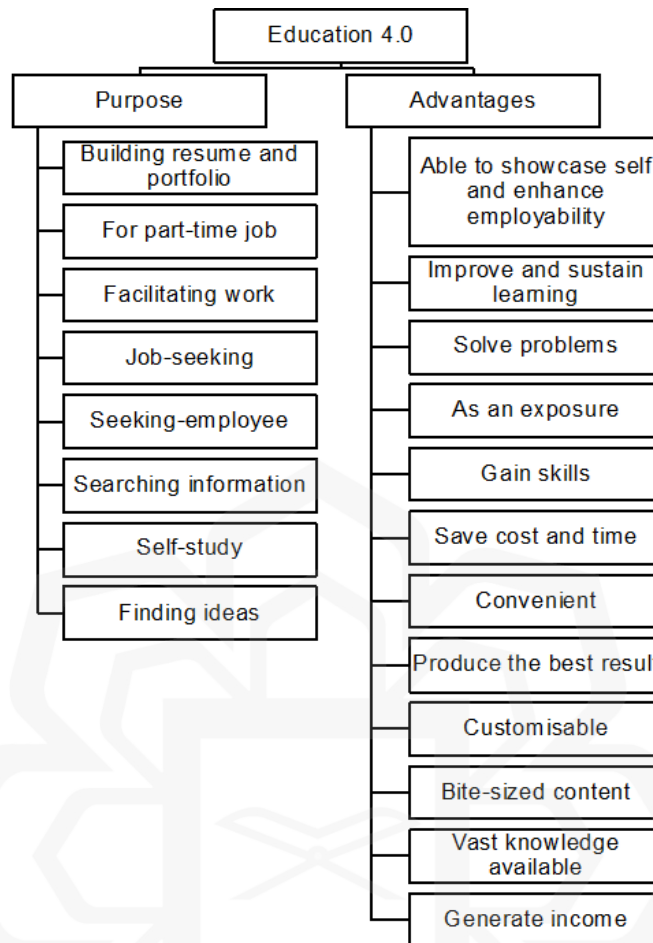


Figure 4.2 How Education 4.0 Enhances Learners' Learning Sustainability and Employability

Joshi (2022) defined Education 4.0 as “a technique of learning that is connected with the fourth industrial revolution and focuses on transforming the future of education through advanced technology and automation” (p. 2). In this study, Education 4.0 means any teaching and learning method that focuses on transforming education with the usage of technology.

4.4.1 Purpose of using Education 4.0 tools

From the interviews conducted, there are a few purposes for using Education 4.0 tools which are:

- Building resume and portfolio
- For part-time job
- Facilitating work
- Job-seeking
- Seeking-employee
- Searching information
- Self-study
- Finding ideas

4.4.1.1 Building resume and portfolio

Informant 8 uses an Education 4.0 tool such as the CV Resume app to build her resume. Meanwhile, Informant 9 suggested students use LinkedIn or JobStreet as a resume and an e-portfolio. He advised them to include their past achievements and success stories in their profile. Students should also update their resume and e-portfolio continuously, he added.

“I think I’ve changed following the current style. Plus, it’s easier now because we have apps. Just need to key in the info. That’s it. I think... the app is... CV Resume. It’s a mobile app. Just key in the address, phone number, picture, education, and working experience... then it will generate. Then we can choose the format that we want. We don’t need to do it manually.” (DU94-96I8)

“By hook or by crook... even though how busy they are, they must find some time to make sure JobStreet, LinkedIn, uh, keep updated every time. Even for the fresh graduates.” (DU104-105I9)

“They can put, their successful story during university. We call it a punchline, because, in comedy, we have a punchline also, in resumes also we have punchline. It's different if you put inside the resume inside the JobStreet, uh, “My duty is... to learn something or to prepare...” that’s a normal sentence, right? But, punchline in the resume, like, uh, “I managed to lead the team to win the blah, blah, blah right there”. A lot of achievement, so once the company, they look into your profile, and then they say, “Oh, it's very good.” Uh, so it could become one of an advantage for you.” (DU108I9)

Informants 4 and 5 use the same Education 4.0 tool called Notion to guide their students in building their e-portfolios. Notion is a note-taking app with customisable features. Students are able to upload files such as their assignments, notes and weekly reflections. These uploaded files act as learning evidence and artefacts which demonstrate their learning journey and skills developed. They continue this practice from Year 1 until graduation which will be shared with their future employers later.

“Currently... I get them to use only one platform. I am currently using Notion. So, I give them a template. So, this is where they document their reflections, their artefacts, and their learning journey. So, it makes it easy for me to assess.” (DU40I4)

“And one of the applications that I use for my classes is to use Notion. Notion is basically a note-taking app, but... we customize it to become our Learning Management System. And then, there is one section that they need to create their e-portfolio, where they put all the tasks, the assignments that they've done, during this semester, or perhaps, if they keep using it throughout the program itself, from Year 1 until Year 4, they can always use Notion to put all their works. And one day, if anyone wants to see their work, they can simply share the link, and people can view it.” (DU22I5)

4.4.1.2 For part-time job

Education 4.0 tools are widely used for part-time jobs as shared by Informants 5 and 8. As a lecturer, Informant 5 guided his students to use Education 4.0 tools such as Upwork, Freelance and Fiverr for them to do a part-time job. These platforms are online and suitable for jobs that can be done remotely such as graphic design or translation. These platforms pay in US dollars which require a PayPal account. Informant 5 guided his students to set up the account.

“...for those who don’t really want to become a teacher, one other thing that I do is that I introduce them to a platform, online platform, that they can sign up to do the freelance job, to sign up for free, how they can set up their own account, how they can set up their payment method, for the task that they get. Because most of the online platforms like Upwork, Freelance, and Fiverr, they will pay in USD. And the payment requires the freelancer to have a PayPal account.” (DU12I5)

Informant 8 advised students to use online shopping platforms such as TikTok and Shopee for online business as a part-time job.

“With online business, aa you could choose whether erm to go public. For example, if you have to look, you can be a model as well. So, you can sell aaa hijab for example. If you're a very shy person, you don't want to do that. If you still want to be a very private person, you can still do that by erm selling other stuff that erm do not require you to... show yourself in public....Aa I would suggest they use TikTok because right now, people buy stuff online from TikTok. Erm... they could use Facebook as well as Instagram. And probably... just use their... I don't know, because I've never tried this, but.... erm... Like a website that is free. Maybe Shopee? Shopee as well.” (DU100-102I8)

4.4.1.3 Facilitating work

Another purpose of Education 4.0 tools is to facilitate work. As an architect, Informant 1 named a few common tools used in the industry such as AutoCAD, Adobe, V-Ray and SketchUp. These tools are used mainly for designing blueprints and 3D (three-dimensional) drawings.

“In architecture lah. Meaning AutoCAD is a must. After AutoCAD, you must know Adobe. You need to colour for presentation, put up the sky, background bla bla all that right. V-Ray...Rendering for 3D? Aa SketchUp. Do it at SketchUp. You do 3D Max... (DU114-122I1)

In Informant 2’s oil and gas industry, they use a tool called Power BI because they conduct numerous presentations with live and synchronised data visualisation.

“So this one more to the light, more to easier during the presentation. Because during the presentation, based on, based on the, uh, experience lah. Let’s say the management. Okay, suddenly, “Okay, can you explain more, uh, this kind of data?”. Then suddenly, during that time, you don’t have, uh, this kind of data in front of you. So by having this kind of Power BI, once you click, uh, whatever that they want, automatically, the data will automatically appear, listed, aa live. So you just scroll, scroll until they satisfied.” (DU142I2)

Meanwhile, Informant 4 did not teach specific Education 4.0 tools. Instead, he taught the concept of the tools so his students were able to adapt to the rapid change in technology.

“...in my class, I don't focus on specific tools. I focus on the concept of the tools. What can the tool of this concept do? For example, whiteboard tools for example. Okay. I cannot just focus on one tool, let's say because I know Jamboard. Okay. I cannot just, I cannot teach them Jamboard per se. Jamboard is a whiteboard tool, a digital whiteboard tool, right? I teach them the concept of a digital whiteboard. So if they understand the concept of what a digital whiteboard is, they can use whatever... they want, whatever comes their way. They can use Jamboard, they can use Miro, they can use Figma.” (DU100-102I4)

Informant 8 and 9 use AI (artificial intelligence) tools such as ChatGPT to facilitate their work. Informant 8 uses ChatGPT to create exercises for her students while Informant 9 uses it to prepare presentation content.

“For the recent months, I use a lot of ChatGPT. Especially when I wanna come up with a lot of exercises.” (DU152I8)

“For example, right. Let's say, if we want, uh, we... If we are assigned to give a presentation about a subject, a topic, right? And then we don't have much time to prepare for the text or the, the information of the topic, the subject. So, maybe we can use, uh, AI like ChatGPT, to describe the topic, the subject...” (DU100I9)

4.4.1.4 Job-seeking

Education 4.0 tools such as JobStreet and LinkedIn are used for job-seeking, as shared by Informants 5 and 7. Informant 5 encouraged his students to start building their LinkedIn profile even before they graduate to prepare for job-seeking later. On the other hand, Informant 7 uses JobStreet when she previously looked for a job as a telemarketer.

“I always encourage them to start their LinkedIn profile, even though there is not much to put inside that yet, but they can always start small and then grow from that LinkedIn profile.” (DU22I5)

“For the telemarketing, I know from website and JobStreet.” (DU198I7)

4.4.1.5 Seeking employee

Informants 1 and 2 use tools such as Mudah.com, JobStreet, Facebook and LinkedIn to seek new employees.

“...we will... advertise in Mudah.com, aa in JobStreet, aa in the media, aa Facebook aa of the vacancy.” (DU16I1)

“So far... that one aa LinkedIn. It’s a common practice... in industry, uh, to look at everyone's LinkedIn before hiring them.” (DU108I2)

4.4.1.6 Searching information

Informants 7 and 9 use Education 4.0 tools such as Google to search for information for self-study purposes.

“Self-study. Informal learning. Through Google. For example, on Google, how to be confident. First, I need to practice with friends. After I’m comfortable, then I practice with the next group that I’m not so familiar with... so that’s how we can learn how to be confident. Presentation wise... we learned before... first, to read on the topic and then, practice in front of the mirror.” (DU144I7)

“... my current job, uh, doesn’t need me to do a lot of presentation because, uh, because I just do the tax. So most of the time I deal with the tax, the computation, and sometimes I, search about accounting, on the internet, Google.” (DU116I9)

“..they can search like a LinkedIn. They have several... Several... Class on LinkedIn... Based on what I know. And then... aa... Podcasts. Spotify Podcasts.” (DU122I3)

“And in terms of social media, we need to consume the right content. For example, my husband doesn’t use social media for entertainment. He follows social media that are more on history, financial all that. As for me, more emotional on girly content. So actually, content on social media that we follow can help us.” (DU168I7)

4.4.1.7 Self-study

Social media were used as Education 4.0 tools for the graduates to do independent studies. Informant 7 uses Facebook and Instagram to learn about parenting and finance while her spouse uses TikTok to learn about history, finance and politics. As for Informant 8, she uses YouTube and Google to access learning materials and slides.

“I use Facebook and Instagram. I follow Kairul Abdullah, his content is more on parenting and insurance. On Instagram, I follow Dr. Adam, he’s an expert in finance.” (DU200I7)

“My husband he’s on TikTok a lot. And he told me that I needed to create a TikTok as well. He said TikTok is not just dancing and those ridiculous contents. Because he said there is a lot of knowledgeable content on TikTok. So he learned a lot about history, political issues, finance... like how to be debt-free, knowledge on house loans and all that. He learned a lot from that.” (DU172I7)

“I would go on YouTube. At the same time... Sometimes I would just Google it, they have it in PDF. Okay. Like all the slides... Erm... Instagram as well. I wish I could say TikTok because I do believe that there are a lot of materials there. But unfortunately, I’m not a TikTok user.” (DU204I8)

In the institution Informant 6 is teaching at, there is a MOOC (massive open online course) that is provided for students to do revision and self-study. Meanwhile, Informant 7 shared her intention to take a course from a MOOC platform called OpenLearning.

“We have MOOC, where we use as a system, students can freely access and refer, for them to do assignments. But at the same time, formal learning still happens. Meaning.. we have contact hour with students. Let’s say, in a week we have to meet them for 3 hours. The contact hour is still there. It’s just we encourage the students to do extra learning from what we have prepared, on platforms like MOOC” (DU56I6)

“I think it was OpenLearning courses I think... where we join the course and then we watch the videos... we get new knowledge... and then we need to do some tasks... it’s convenient, right? (DU202I7)

4.4.1.8 Finding ideas

Education 4.0 tools such as Google can be used to find ideas and inspirations. Informant 1 advised students to use Google to search for work samples or designs in architecture with different keywords to generate better results.

“Yeah. They will look for ideas on Google, and adapt the design from there.” (DU234I1)

“...you should work hard, search online... to find samples to be able to... generate new ideas. You need to work hard lah. It’s not like you can just type one keyword, you’ll get the solution to your problem... you might get different results if you use different keywords” (DU296I1)

4.4.2 Advantages of using Education 4.0 tools

The interviews conducted show numerous advantages of using Education 4.0 tools. The advantages are:

- Able to showcase self and enhance employability
- Improve and sustain learning

- Solve problems
- As an exposure
- Gain skills
- Save cost and time
- Convenient
- Produce the best result
- Customisable
- Bite-sized content
- Vast knowledge available
- Generate income

4.4.2.1 Able to showcase self and enhance employability

Using Education 4.0 tools helps the graduates to showcase themselves to future employers and enhance their employability. Informants 1, 3, 4, 8 and 9 highlighted that the candidates are highly to be hired when they include a portfolio/e-portfolio or video resume. Employers are able to filter out the candidates based on the skills, work samples and learning evidence shown in the e-portfolio and video resume.

“One of the advantages is employers have the collection of samples for them to see. And they may choose the best.” (DU242I1) We can see their skills. That they really learned and were knowledgeable. (DU266I1)

“Yeah, it’s good because you can have a background survey... on their page. It might help the recruiting department to filter the candidate before they send to me.” (DU132I3)

“But from e-portfolio or video resume, they get to see... even before coming for the interview. So it helps them to be filtered faster, than other candidates without this documentation.” (DU26I4)

“So when you do that, your employer, your future employer can see what are the potential that you have in you. Because sometimes just the interview is not enough to... show the hiring managers... what are the best potential that you have in you.”(DU218I8)

“I think it will increase the chance of that, right? Because like I said, the company will zoom into your profile. So, even, even when they filter the profile of the candidates, they will still find the reason why, why they will call you for the interview right. So, if they, if there, if there are a lot of candidates, so of course, they will compare this candidate to this candidate. And then by using this, e-portfolio, so it will increase more chance for you to differentiate yourself from others.” (DU140I9)

Informant 4 shared that sometimes, an impressive video resume and e-portfolio will guarantee a job interview without the need to be filtered.

“Oh yes. I mean, there are several cases where former students of this Kuliyyah (faculty) who carry this e-portfolio or who carry the video resume, who shared video resume and e-portfolio with their potential employer, got called for an interview, right away without being filtered.” (DU24I3)

E-portfolio and video resumes also benefit the graduates to showcase their strengths and stand out more among other candidates who do not have e-portfolio or video resumes. Informants 2 and 4 discussed that with video resumes, they are able to promote themselves prior to the job interview. Nervousness during job interviews might hinder their performance which can be solved with a video resume.

“Also, will be credited, if they have more.... digital video resume. So, because usually, on paper, they can write, beautiful touching words. But, when you call for the... interview, they will start to... stutter.” (DU194I2)

“Some of them might have good qualifications, but they might not be able to perform well in the interview, due to nervousness or something like that. So, this documentation in the form of e-portfolio and video resume speaks for them, even before going for the interview. So, this enhanced their employability.” (DU38I4)

A portfolio or e-portfolio that contains the graduates' achievements and initiatives such as online training certificates or highlights of success stories during FYP (final year project) will be a bonus point for the graduates to be hired by the employer.

"If the candidates or... people who use this kind of online training that can be useful to their... daily work, so later on when they go to other industry, they can set out whatever they have, even though it's online training." (DU112I3)

"So sometimes, I will say "Make sure you do the best for your interview, this is the thing that you can highlight (in the portfolio)." So sometimes that is the reason why they are hired." (DU78I6)

4.4.2.2 Improve and sustain learning

Education 4.0 tools help to improve lecturers' teaching, as shared by Informants 4, 5 and 6. From the students' projects, e-portfolios, and weekly reflections, lecturers are able to improve their future lessons and guide the students to improve their skill sets.

"So I can identify students who I can push to become more, to perform better, not just during their study years or even after they graduate or helps me also to identify students who need help in terms of improving their soft skills, their ID or technology skillsets. All these are easily detected from the projects I gave them, the tasks, the e-portfolio, their reflections." (DU90I4)

"...from there, I can improve myself. At the same time, I can understand better my student, what they need and what can be added more in the next lesson or the next semester. So, reflection does help both parties, the student and also me, to understand each other better." (DU34I5)

From an online survey called CQI (Continuous Quality Improvement) given to the students at the end of the semester, Informant 6 reported its benefits to lecturers' evaluation and further improvement for the upcoming semester.

"And then we have CQI. Continuous Quality Improvement, if I'm not mistaken. So, from there, we can evaluate. From there, we can make suggestions. For our teaching of the next semester, what are the improvements that we should do so it will be better than the current semester that we're teaching." (DU84I6)

Informants 4 and 5 discussed the benefits of using Education 4.0 tools on students' learning sustainability. By exploring new apps, it helps the students' lifelong learning and problem-solving skills. The weekly reflections were recorded as notes which helped them remember what they had learned during class.

“In a way, it sustains their learning because... they... while using all these tools, they will keep on searching for tools that can do it better, or tools that can do it faster or whatever that they want to do.” (DU114I4)

“Well, basically, one of the purposes of doing reflection is for them to, I would say, as an exercise for them, to reflect on what they have learned so that they remember and it serves as a note for them, actually. And then, they can do it under Notion itself.” (DU34I5)

Using Notion for weekly reflections also encourages the shy students to share their thoughts and opinions, Informant 5 added.

“So, some of them, they are not quite talkative inside the class. But when they are doing reflection, they do give a lot of good inputs.” (DU34I5)

4.4.2.3 Solve problems

Education 4.0 tools also help to solve problems in the workforce. Informant 6 stated that during the COVID-19 pandemic, they faced a problem with conducting lab sessions as the class was conducted virtually. Thankfully, technology benefits the teaching and learning process through the application of virtual labs.

“Like for example, during Covid, we cannot have lab face-to-face right. Since it is an important subject for them because they need to see it, physically. Because it's a psychomotor skill, right? So during that time, we did... for example, we developed lah... even if it's simple, but we developed a model we call virtual lab. So those are the things that we did to match with the current need (in technology).” (DU56I6)

Informant 9 stated with technology and Education 4.0 tools, employees are able to achieve their goals and tasks assigned by the company.

“Our daily job, uh, we will face a lot of challenges that we need to complete the mission of our tasks, assigned by the company. So, during that time, these kinds of tools, we can utilize it to help us to meet the goal.” (DU112I9)

4.4.2.4 As an exposure

Informants 4, 5 and 6 highlighted that when they teach using Education 4.0 tools, the students are exposed to and will get used to the technology which will help their future employability. With the exposure to the tools, Informant 4 shared that the students will be able to use the tools in the workforce, without feeling alienated.

“So they have the basic, they have the foundation set when there were students here, and now they like to ease into it naturally because they have the foundation already. So now, they can naturally use whatever they use in their workforce, and without feeling alienated by it, it's not alien to them.” (DU98I4)

According to Informant 5, all students have access to a Microsoft account. Since most of the companies utilise Microsoft systems and products, the students will be proficient users by the time they graduate, he added.

“And to my knowledge, a lot of companies actually use Microsoft as their own company system. So basically, by having Microsoft during their degree time, when they go to the corporate company or when they start their job, it is not something new to technology for them to learn. So which leads them, which make them a proficient user of Microsoft 365 itself.” (DU86I5)

In Informant 6's observation, the recent generation of students' technological skills has improved, especially since the COVID-19 pandemic. They have taken the initiative to explore more as they have more exposure to technology, compared to the previous generation of students.

“The advantage is if we look at the students... lately meaning after Covid, actually their skills in technology are better than the previous. Because of COVID-19, the students explore more and maybe because nowadays, they are exposed to more of those things (technology). Compared to if we look at the previous generation of students when I first started teaching, they lack exposure to the latest technology for education.” (DU64-66I6)

4.4.2.5 Gain skills

Informant 8 shared the benefit of gaining new skills when students use Education 4.0 tools. She advised students to not just use social media such as TikTok and Instagram for fun, but at the same time, they should learn new skills. They will be able to learn editing skills from TikTok and improve public speaking skills from YouTube.

“Yeah, at the same time try to learn and be more creative about it. Not just use it (TikTok and Instagram) for fun. Maybe 50, 50, like use it for fun and at the same time learn, maybe learn better editing skills, because the thing is everyone can edit.” (DU134I8)

“Because erm if you start doing your own YouTube video, from time to time, you'll be more good at public speaking.” (DU218I8)

4.4.2.6 Save cost and time

Technology and Education 4.0 tools also save cost and time. Informants 5 and 9 shared the benefits of saving costs when using the tools. Informant 5 advised students to utilise the free features of the Microsoft account that all students get. For example, students can join the training and get certificates from Microsoft 365 without any cost. The certificates can be included in their resume and e-portfolio, which will be the added value that makes the employers notice them.

“They can get all the certificates from Microsoft 365 and it is free, which becomes an added value for them to be employed when they have this one. (DU86I5)

Informant 9 said that employers are also able to save costs because they can use professional sites such as JobStreet and LinkedIn to seek new employees, without having to hire recruiters.

“...some of the companies also, they plan to save some, amount of cost, so they just go to the JobStreet and LinkedIn, and then, uh, read the details, and then, the person from the LinkedIn and JobStreet, and then, uh, they will call for an interview session. Just by looking at the details at this, LinkedIn.” (DU100I9)

Informants 2, 4 and 8 shared the benefit of saving time when using Education 4.0 tools.

“It goes back... to what I said earlier, advantages would be, it gets them to do their job faster and better. Because that is what technology is.” (DU108I4)

Informant 2 uses a data visualisation tool called Power BI because it is less time-consuming compared to using spreadsheet and presentation tools such as Microsoft Excel and PowerPoint.

“...for the data analysis, usually now, they are starting to use this kind of, uh, Microsoft Power BI. So it's more convenient, and aa... less time consuming, because usually when you're using Excel, so error and so on. So aa then you need to transfer (data) into Microsoft PowerPoint. So this aa for this kind of Power BI, you are no longer required (to transfer data).” (DU134I2)

Informant 8 uses an AI tool called ChatGPT to search for articles suitable for her students' English proficiency level, and it saves her time in doing the task.

“But ChatGPT could give me and provide me an article and I could just edit it myself. It saves tons of time.” (DU152I8)

Informants 7 and 9 shared the tools that they use which save both cost and time for them. Informant 7 creates her resume using a free mobile app which can be done in 5 to 10 minutes. Meanwhile, Informant 9 saved costs and time on travelling when using professional sites such as LinkedIn and JobStreet to look for jobs.

“Like for the resume app, it’s so easy. I can finish creating a resume in just 5 minutes. 5 to 10 minutes. The outcome is pretty. I can choose the template, I can customize the colours. The app is called CV Resume. It’s free.” (DU20217)

“...by using this kind of tools, like, LinkedIn... JobStreet, so I don't need to, uh, travel.” (DU10219)

4.4.2.7 Convenient

Informants 2, 5 and 8 use Education 4.0 tools because they are easy to use and convenient. Informant 2 stated that he can easily check graduates’ LinkedIn profiles before calling them for a job interview.

“From LinkedIn, you are easily.... check either this....personnel aa actively posting, participating... participating for any whatever post in the LinkedIn lah.” (DU26412)

Informant 5 uses a tool called Notion to guide his students to build their e-portfolio because it is easy for them to navigate it and the students are happy with the ease-of-use features that Notion provides.

“Which I found that this e-portfolio is basically really helpful for the student to build their portfolio. And it is much easier to manage using Notion itself, basically.

...nowadays Notion itself is much lighter and much easier to navigate itself. So, that's why we transition to Notion. And most of the students, they are happy with the use of Notion to make their e-portfolio.” (DU2415)

Informant 8 claimed that Education 4.0 tools are convenient for teaching. She uses ChatGPT, an AI tool, to obtain an article that contains a list of vocabularies that the students should learn. In a matter of seconds, ChatGPT will generate the article following her prompts.

“At the same time, what I did was, I would Google up like... words or vocabularies for Grade 7, aa 7 Grader or 8 Grader. Something that I feel like is erm suitable for my students. And then I would probably get 30, 30 or 30 plus vocab. And I would give it to ChatGPT and I would type “Can you come up with an article that contains these words?” Yeah. Because I specifically want them to be able to get new words. That is for their level. Yeah. So, I do feel like ChatGPT is very helpful. Especially in teaching.” (DU152I8)

Education 4.0 tools offer the advantage of accessibility which is convenient for lecturers like Informant 4 and 5. With Notion, all of the students’ reflections and learning artefacts are documented in one place. It is easily accessible by Informant 4 to mark his students’ works. Informant 5 uses OneDrive to store his teaching materials which he can access anytime anywhere just by using his mobile phone.

“I am currently using Notion. So, I give them a template. So, this is where they document their reflections, their artefacts, their learning journey. So, it makes it easy for me to assess.” (DU40I4)

“One of them is all the data that is being put inside OneDrive can be accessible anywhere anytime. Just you need to have an internet connection. That's all. But the ease of use, you can get the information or data that you store on the cloud anytime. And sometimes I only manage my class using my phone, where everything is there. That is the convenience of that part. That is the most important advantage of using these apps, essentially.” (DU84I5)

Not only do Education 4.0 tools make it convenient for lecturers to teach, but it is also helpful for the students. Informant 5 shared that his students use their smartphones to do their assignments because some of them cannot afford a laptop.

“And then for individual tasks, they can always use their smartphone to complete the task. So that is another way. Because nowadays smartphone is something that everyone has. And then they are capable to do most of the things nowadays.” (DU98I5)

4.4.2.8 Produce the best result

Informant 8 stated that students will also likely produce the best result when using Education 4.0 tools. Unlike physical presentations, with YouTube, students are able to do multiple recordings and choose the best one to share on their channel.

“Because the thing is with YouTube, you could just aa record yourself at home. So you don't get nervous. There's nobody in front of you. So you could also do a lot of re-take. You can shoot many times. You can take your own sweet time to erm provide the best result.” (DU218I8)

Informant 8 agreed that students should be taught to develop portfolios because they will produce the best assignment when they are aware that it will be included in their portfolio.

“I think it would have a lot, especially for the students to... give their all in their assignment. Because they know that this thing will be in the portfolio. Of course, they want to present themselves in the best way that they can.” (DU254I8)

4.4.2.9 Customisable

Education 4.0 and technology tools such as a resume-builder app are customisable. Informant 7 shared that she uses an app to build her resume and it produces a nice outcome. She said that there are a few customisable features such as choices of templates, colours and themes, arrangeable layouts and image uploaders. When the resume is done, she can choose to save it as a PDF or print it directly from her phone.

“Like for the resume app, it's so easy. I can finish creating a resume in just 5 minutes. 5 to 10 minutes. The outcome is pretty. I can choose the template, I can customize the colours. The app is called CV Resume. It's free. For example, if I want a professional-looking resume, I choose black or blue. For laid-back companies, I can choose maybe yellow. I can upload my details, pictures, links and then I can save as PDF or print it. I can also customize where I want to put working experience... and how I want to arrange it.” (DU202I7)

4.4.2.10 Bite-sized content

Education 4.0 and technology tools such as social media provide bite-sized content which are preferred by some learners. Informant 7 shared her preference to learn from social media because the content is not lengthy and is suitable for her limited attention span. She uses Facebook and Instagram to learn new knowledge and save the content that she wants to revisit.

“I prefer using social media because the content is just nice, not too long. Unlike online courses like OpenLearning, I need to have one hour. Maybe my attention span is limited. So I prefer social media like Facebook and Instagram. I can scroll on my phone, and I can save it.” (DU202I7)

4.4.2.11 Vast knowledge available

Both Informants 1 and 8 advised students to be proactive in self-study by doing some research without relying on the lecturers. They suggested using a widely used search engine, Google, to search for information on any topic as there is vast knowledge available on the Internet.

“But like I said, if the students are hardworking, all these can be searched on Google. Right. But you need to extract, give them the exposure. It’s there, just type.” (DU200I1)

“But, but I feel like if you’re proactive enough, you could still find answers. Because there is vast of knowledge on the internet right now. So... I don’t think... I feel like students who are able to do... to carry self-study correctly will be able to sustain without a... teacher.” (DU210I8)

4.4.2.12 Generate income

Informants 5 and 8 highlighted the benefit of generating income from technology and Education 4.0 tools. Informant 5 introduces freelance platforms such as Upwork, Freelance and Fiverr to the students to do part-time work and generate income. Informant 8 suggested students utilise online shopping platforms such as Shopee, TikTok and Instagram to generate income.

“I introduce them to a platform, an online platform, that they can sign up to do the freelance job, to sign up for free, how they can set up their own account, how they can set up their payment method, for the task that they get. Because most of the online platforms like Upwork, Freelance, Fiverr, they will pay in USD.” (DU12I5)

“YouTube, all the platforms, like Shopee, TikTok. Instagram and so on. Yeah, I think we should really fully utilize it not just for fun, not for wasting time, but to generate income.” (DU132I8)

4.5 EMERGING THEMES

This section discusses a few themes that have emerged. The researcher formulated these themes during the data analysis process from the data that the researcher obtained after probing the participants during the interview. Some of the themes were unexpected and they provide additional answers to the research questions. Figure 4.3 below shows the themes that have emerged in this research.

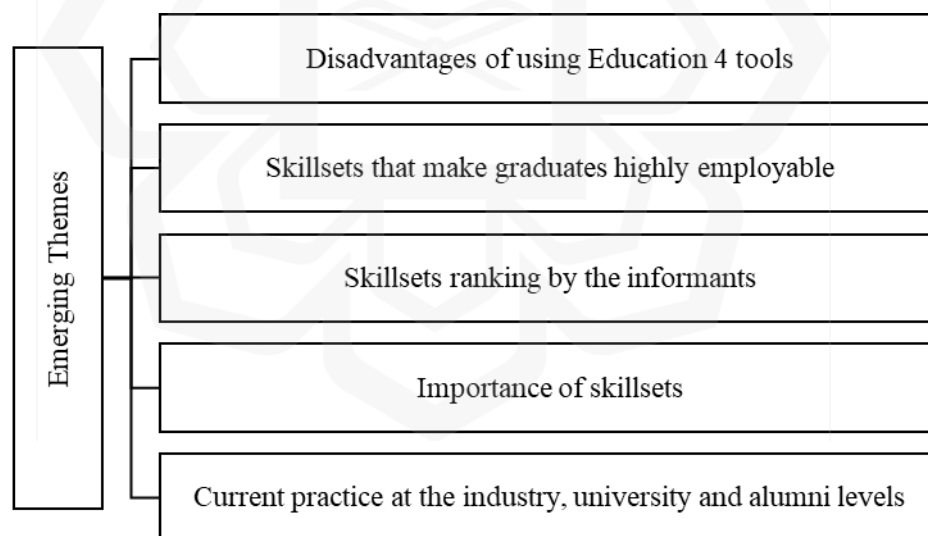


Figure 4.3 Emerging Themes

4.5.1 Disadvantages of using Education 4.0 tools

There are a few disadvantages to using technology and Education 4.0 tools. From the interviews conducted, the disadvantages shared by the informants are:

- Lose skills
- Obsolete
- No variety
- No privacy
- Waste time and resources
- Too dependent on technology
- Freedom of speech affected
- Miscommunication
- Not cheap
- Incomplete information
- Lack of human touch
- Easily distracted
- Plagiarism and ethical issues

4.5.1.1 Lose skills

According to Informants 3 and 6, using Education 4.0 tools affect the students' communication skills, confidence and efficiency. Informant 3 said the students will lose communication skills when taking online course or MOOCs because there is no two-way communication. Students will also lose confidence because they do not meet people face-to-face.

“However for the demerit, that there... is no engagement between people. So... you may cheated. And then... the social skills will be... What do we call it? Deteriorate. Social skills. Because there is no two-way communication between you just... you just have self-study and you answer the question by yourself.” (DU110I3)

“...a lot of poor social skills, communication skills. Social skills deteriorate. And then.... Lost of self-confidence. Because you do not meet people.” (DU114I3)

Informant 6 stated that students’ confidence and efficiency decreased. They become lazy and refuse to explore because they can just search everything online.

“Sometimes build of confidence too will decrease. Because they feel like “It’s okay, we can search this later”, like that. But they don’t want to try to explore or be more mature (to improve themselves) in that area.” (DU68I6)

They become lazy. Because they know it’s there (on Google). But for us, when we were students, we felt like... for example like school kids. If before this, the kids used to memorize the timetable. But nowadays, “Oh it’s okay if we don’t memorize the timetable, just use the calculator.” (DU68I6)

4.5.1.2 Obsolete

Another disadvantage of using Education 4.0 tools is the tools will be obsolete in a certain period. Informant 5 shared some of his students’ hardships of accessing a device that is recent because of the swift change in technology.

“Because some of them, they are using their parents’ laptop previously, like back in 10 years ago, devices. Well, I’m explaining why they need to upgrade the device. Because technology, whatever technology it is, is going to be obsolete at a certain point in time.” (DU96I5)

Another point that Informant 5 discussed is whatever tools that the students had learned during university might be outdated by the time they graduate and enter the industry.

“One that I can think of the disadvantages of using these tools, is that the tools will not be used during their work life. Or the tools might be replaced when they start working. Because technology changes from day to day, not from time to time. Nowadays, from day to day, every day there will be a new tech.” (DU102I5)

4.5.1.3 No variety

Informant 4 and 7 shared their concerns about using Education 4.0 tools that are resulting in no variation. Informant 4 stated that with Notion, it is limited for the students to customise the visual.

“...in terms of visual, some students are saying that there is no variety.” (DU40I4)

Whereas, Informant 7 said that her resume will not stand out to the employers. This is because it is made using a template which is similar to the other candidates' resumes that used the same template.

“No originality. If I'm using the app to create a resume, it will look similar to others. There's no creativity. And employers will know that I'm using a template. If all resumes look similar, my resume will not stand out. So that would be the disadvantage.” (DU210I7)

4.5.1.4 No privacy

Another concern of using Education 4.0 tools is no privacy among graduates, as discussed by Informant 8. Employers could do a background check on the graduates' social media and they might be rejected before they go for the job interview due to this practice.

“...there's no privacy. The thing is your... your future employer could do a background check, just by looking at your profile.” (DU222I8)

4.5.1.5 Waste time and resources

Sometimes, using Education 4.0 tools will result in wasting time and resources. Informant 3 shared his experience in the hiring process where the company lost time and resources when they hired people who did not stay long in the company. Then, they need to go through the hiring process again, back to point A, posting the job advertisement.

“Because the hiring process is not an easy job. It takes time. So if we waste a lot of resources of time, timing and suddenly people cannot sustain or whatever, then it's a loss. Then we need to go back from A process, from advertisement and so on.” (DU114I3)

Informant 9 shared his concern about candidates who fake the details in their profile. This will cause employers to lose time and resources in calling bad candidates for job interviews only to find out that they will fail to perform in their work.

“But to the company, some of the disadvantages that I, I mean, sometimes it can attract bad candidates. When the candidate writes, they can write anything in the profile right, you won't know if it's right or wrong or right. So, the company there's a chance to attract bad candidates to the company, um, because, sometimes things that they write in the profile are wrong actually, right? They say that they can do this, but actually they cannot do this.” (DU122I9)

4.5.1.6 Too dependent on technology

When people are too dependent on technology, it will result in inefficiency or failure to execute their plans. Informant 4 said that his students, who are trained to become teachers, will sometimes face this issue because they could not apply what they learned during university when they teach at schools with poor technology or infrastructure.

“The only disadvantage that I can think of is when they go to a place where they cannot execute or they cannot use the skill set or the knowledge that they have learned... with me. Like poor internet connection or poor support... from the place, lack of support in terms of digital tools. So they got frustrated. Because they learned high-end skills, they learn high-tech but they go to a low-tech place, they cannot apply their skills.” (DU112I4)

Informant 6 shared her experience in teaching the previous and current generations of students. The previous generation did not have technology tools and they could not work efficiently because the knowledge was all in their head. However, the current generation of students are less effective. When lecturers ask them questions, they are not able to answer quickly because they need to check the answers on the Internet first.

“Before this, maybe the students remember a lot, things like that, stick in their head. Because now they rely too much on sources like social media and all that, so they become too reliant. So, like... they become less effective when they work, because they need to constantly check (the answers on the Internet), after a while, check again. It doesn’t stick. If they always practice it, they will memorise and they are able to answer spontaneously.” (DU68I6)

4.5.1.7 Freedom of speech affected

Informant 8 stated that the graduates’ freedom of speech will also be affected when using Education 4.0 tools. Graduates could not be themselves or share their thoughts freely because they are afraid that it will affect their employability.

“At the same time, you know sometimes on social media, you just want to be yourself. There are certain kinds of people. Some people just want to be themselves. If they... voice out about their own political views for example, or certain certain things, it might affect the employability.” (DU222I8)

4.5.1.8 Miscommunication

Informant 9 said that miscommunication could occur when using Education 4.0 tools. For example, when a job interview is conducted online, sometimes miscommunication could occur and it is challenging for the graduates to make a good first impression.

“I think it I think it can affect communication also. Between the graduate and the company. Like I said, because the best thing is... is to talk face to face. Because when, uh, someone talking face to face, it can clarify what the person is like, at least by first impression, right? While also maintaining clear communication with one another. Hmm... But, by using these tools, uh, so the communication can be not so good lah. Because it's not face-to-face.” (DU122I9)

4.5.1.9 Not cheap

Another disadvantage of using Education 4.0 tools is the devices are not cheap. As shared previously by Informant 5, some of his students could not afford a new device that could support the newer apps and software. He praised the government initiative, PerantiSiswa, where they give a Samsung tablet to students from a low-income family. The current initiative is collaborating with Samsung and the device given is helpful for the students; compared to the previous initiative where the device is low quality and some reported burning issues during charging.

“...they don't have a proper device that can support all the new apps. Because to be frank, Adobe software is quite heavy to be used on low-spec computers. And nowadays, hopefully, the initiative of giving devices to students to use for their higher education should be continued from time to time. Because the device is the main concern. When you want to use the new tools, you need to at least have a proper working device to support the tools.” (DU90I5)

“Yes, the PerantiSiswa. Well, I'm quite surprised because last time, when the government gave me the device, I would say it is a waste of money, because the device is not good. Well, we heard the news, that the device was burnt during charging. But now they are collaborating with Samsung, which is a decent device, which can be used in class and helps students a lot.”

Meanwhile, Informant 7 dismissed her intention of taking an online workshop because the fee was not cheap.

“Because I need to pay for an online workshop. It’s good but you have to spend money lah.” (DU148I7)

4.5.1.10 Incomplete information

There is an issue of incomplete information when learning using Education 4.0 tools. Informant 7 uses social media for self-study and claims that the content is basic. She can learn the main points, however, she could not develop the knowledge because the information is incomplete.

“But for me... it doesn’t really help. To get the main points yes... it helps... but does not help me to really develop knowledge wholly...” (DU152I7)

“I would say... for social media, the content is just basic. And sometimes we can misinterpret its meaning, because it’s incomplete.” (DU208I7)

4.5.1.11 Lack of human touch

Education 4.0 tools lack human touch as claimed by Informants 3, 7 and 8. Informants 3, 7 and 8 had the experience of learning online from MOOC and online training. According to them, there is no engagement between people and the communication is one-way. It is also challenging to ask questions in MOOC or online courses because no physical human can answer them.

“However for the demerit, that there... is no engagement between people...you just have self-study and you answer the question by yourself.” (DU110I3)

“Because... it’s just... theoretical only... and it’s one way... For me personally... I prefer two-way communication like in Zoom or Google Meet. Or even better, face-to-face. I prefer to live. For me, I think it doesn’t really help me.” (DU154-156I7)

“Some might argue that, by using all this platform, it's hard if they want to ask questions. Because you don't have like a... physical human being to ask.” (DU210I8)

Informant 8 also added that AI tools such as ChatGPT are unable to read emotions which makes it difficult for her to find articles that are relatable to her students.

“So, ChatGPT, the problem is aa it cannot read emotion. So, it's very hard for me to find an article that is relatable.” (DU152I8)

4.5.1.12 Easily distracted

It is easy to get distracted when learning using Education 4.0 tools. Informants 1 and 7 said that there are a lot of pop-up ads or unrelated content which may distract the students' focus from learning on social media. Overuse of social media may also lead to forgetfulness, as Informant 7 confessed that she forgot to eat because she was so engrossed in social media.

“Maybe easier for them to get distracted... for example, on YouTube, there'll be a lot of pop-ups or ads. Even on Google.” (DU254I1)

“And then... on social media, it is mixed with other non-related content like entertainment, which can make me forget what I've learned. And then... sometimes if I spend too much time on social media, I forget to eat.” (DU208I7)

4.5.1.13 Plagiarism and ethical issues

Informants 3, 7, 8 and 9 discussed the ethical issues and plagiarism that could occur from using Education 4.0 tools. Informant 3 said some employees will break employers' trust by abusing the freedom of work-from-home benefits.

“With the introduction of 4.0. If we don't have ethical people, then they will manipulate the freedom that they have. For example, like, work from home. If you don't have ethics, you just don't do your work. So, that's part of our concern.” (DU160I3)

Informants 7 and 9 shared their concerns about plagiarism from AI tools such as ChatGPT. According to them, it is easier for students to copy-paste their assignments and commit plagiarism using ChatGPT.

“...compared to writing task, students can copy-paste. Even now we have AI, so it’s easier for students to copy-paste.” (DU178I7)

“It's leading to plagiarism, uh, that's plagiarism because, the plagiarism, has started a long time ago, right? Once, AI or ChatGPT is implemented, so it can make the plagiarism become worse.” (DU126I9)

Informant 8 discussed the issue of not giving credit to owners. For example, when searching for materials online, some unethical lecturers do not give credit to the original authors or content creators.

“I feel like there is a problem when it comes to this Education 4.0. Because... the thing is when everything is there online, people don't really give you credit for it. Yeah, if it's from you and you share it. Even if you share it for free, you share it. Even if you sell it, you sell the materials. Sometimes if we want the materials, we have to pay for them, we as lecturers... But do we truly credit them?” (DU204I8)

4.5.2 Skillsets that make graduates highly employable

Two categories of skillsets make graduates highly employable: 1. Personal Qualities and, 2. Employability Skills. From the interviews conducted, there are 14 personal qualities and 8 employability skills that enhance graduate employability; and they can be seen in Figure 4.4 below.

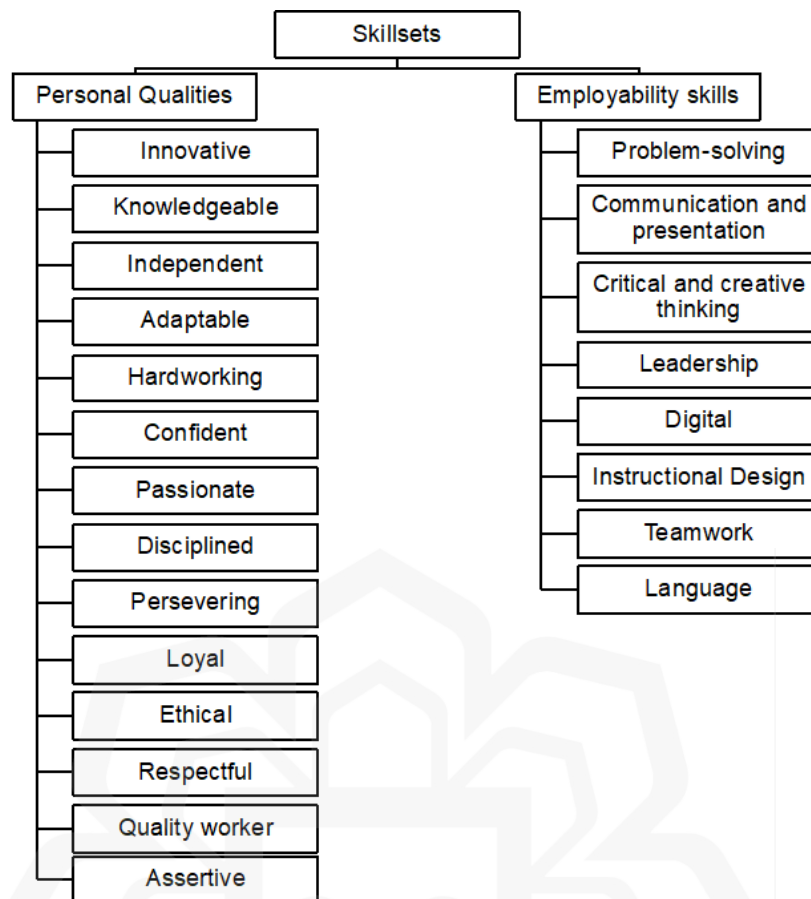


Figure 4.4 Skillsets that make graduates highly employable

4.5.2.1 Personal Qualities

i. Innovative

As an expert in the industry, Informant 1 looks for innovative graduates, who always explore new ways to do things, and those who do not rely on the lecturers to teach everything.

“If they are hardworking, they can search, ha meaning they, they don’t don’t wait for people to spoon-feed. Ha we... meaning they are innovative.” (DU48I1)

As a lecturer, Informant 4 teaches his students to be independent and encourages them to innovate and explore so that they will become innovative educators in the future.

“They have to always innovate. That's why I'm trying to that's the mindset that I'm trying to instil into their mind to be an innovative... educator.” (DU74I4)

ii. Knowledgeable

Another personal quality that the informants highlighted is being knowledgeable. As an expert in the industry, Informant 2 seeks candidates who are knowledgeable and able to respond well to the interview questions.

“So if he able to respond, so means that yeah, he is a good information lah.” (DU38I2)

Informant 6 is a lecturer in the Engineering faculty and according to her, graduates who lack knowledge will not be able to work efficiently when they enter the industry.

“...when we look at the area of engineering, of course, we want the understanding of the basic, that is the most important. Basic engineering because if they lack the basic engineering knowledge, they will not be able to work efficiently when they graduate, right.” (DU32I6)

Informant 9 uses the term ‘professionalism’ to show the knowledgeable quality that graduates should have to be highly employable.

“Professionalism actually is very general, but it consists of you mastering the knowledge that you learned. If you wish you work as an accountant, that means you master the knowledge of accounting. And then when we... someone asks about accounting and you can simply just give the answer, that's what we call as professionalism.” (DU36I9)

iii. Independent

Informants 1, 2, 3, 7 and 8 stated that graduates should be independent to be highly employable. Being independent means they are able to make decisions on their own and they don't just wait for instructions. Graduates who are independent will also take the initiative to learn and explore the answers to solving problems and delivering tasks given by the company.

“They must have that. They don't wait for other people's comments, they don't wait for feedback, no. They themselves aa they have the effort. Ha they work for it.” (DU52I1)

“Because he is able to deliver the direction of the company. Aa without any assistance because usually, once we set a goal, so he or she aa required to deliver the information directly to the end user lah.” (DU54I2)

“Because, if you were in the industry, everything is up to you again. Even though you have all the resources but you are not willing to learn then it's just not willing to learn” (DU64I3)

“Independent... or those who can do work without waiting for instructions... creative... aa high problem-solving skill... aaa.... They take the initiative to learn... because of my opinion... I think employers don't want to hire those who only do what we ask them to do. If you say A, they only do A.” (DU110I7)

“Company, any company in Malaysia, even outside of Malaysia also, are looking for independent staff. Means comes with a good package, good social skills, good attribute. Because... when you jump into the job market, most of the time you have to be independent. You cannot rely on others, you have to be independent, which means that you have to make a decision on yourself.” (DU50I9)

iv. Adaptable

Other than being independent, being adaptable is another quality that makes graduates stand out to employers. Informant 4 stated that he teaches his students to be instructional designers who are adaptable anywhere they go. Those who are adaptable will be able to work even if they go to places with poor technology or infrastructure.

“They are very adaptable. I teach them to be very adaptable even if you go to low-tech, you know what to do with low-tech. And if you go high-tech, you can give it your best because you have all the tools that you need. So most important is, an instructional designer has to be very adaptable.” (DU118I4)

Informant 9 who is an alumnus from a public university stated that the alumni from his alma mater are adaptable in different roles. He met many graduates who were working in the Accounting industry even if they were from an Engineering background.

“One thing I am very proud about IIUM is... most of the students graduated from our IIUM, they managed to adapt to any different role. Even though they... come from Engineering they managed to adapt to the environment as Accounting and the others.” (DU20I9)

v. Hardworking

Informants 1, 5 and 6 stressed the importance of being hardworking to enhance graduate employability. Being hardworking means that the graduates take the initiative to learn and explore, are willing to stay back, deliver their tasks well, and produce the best result to satisfy their clients.

“And then, they don’t care to stay back, right. We have office hours, right. But they are willing to stay back to give good results, aa to explore and give the best solution.” (DU52I1)

“So, for me myself, I would say number one to get the job done. Because when we talk about the company itself, they always, by hook or by crook, they want the client to be satisfied with whatever they request.” (DU48I5)

“And then if we give them any task, they will come back to us with the result.” (DU52I6)

vi. Confident

Being confident will enhance graduate employability among graduates. Informant 2 highlighted that graduates should be confident because they need to break their comfort zone once they enter the industry. Informants 3, 7, 8 and 9 advised graduates to be confident when answering questions during job interviews because the way they answer will influence the employer's decision to hire them.

“Confident. High confidence level. Because once they start, starting to explore the industry, so, usually, they have to break their comfort zone lah.” (DU54I2)

“Their confidence level of the way they are responding to the question.” (DU70I3)

“Then, confidence can be seen during the interview. When we are confident, employers will hire.” (DU186I7)

A good voice projection will reflect that the graduates are confident, as shared by Informant 8. As a result, employers will also be confident that the graduates are able to handle the tasks that will be given to them.

“Because... when your voice projection is good, sometimes people get intimidated by you. Which is a very good thing, because you want that confidence that you could... that you want that confidence from them, that you could handle a certain project or a certain task.” (DU114I8)

Informant 9 gave a tip to avoid saying “I’m not sure” or “I don’t know” when answering interview questions because it shows a lack of confidence.

“And, when the.... interviewer, when they ask me a question, so just, I just ensure myself to answer the question confidently. That means I will not just, simply say “I’m not sure.” “I don't know”, because this kind of answer is not good for the interviewer, because they just want to see that you are confident enough to answer the question.” (DU90I9)

Informant 7 shared her concern about the lack of confidence occurring among Malays compared to other races in Malaysia. This is based on her own experience and observation working in the insurance industry.

“Because other races are more outspoken. I’m not sure because of confidence... or their race. For example, if we go to LRT, Malays are shy, timid, not talk... but others, they are outspoken. So I’m not sure it’s related to race or what...” (DU102I7)

“So from my observation... most who do surveys... approach people and direct-selling... mostly are Chinese. The way they talk... we can see their confidence is high. If Malays... especially myself lah right... so if I want to direct approach... I feel too shy to start talking... I fear of others’ perception... do they want to listen to me talking? Ha... like that. It’s different if we compare among races.” (DU106I7)

Informant 8 stated that early childhood could be the reason behind the graduates’ lack of confidence. Those who were raised in families who are soft-spoken and polite may grow up to be timid or less confident.

“Honestly, if you ask me, I feel like it could, it started from early childhood, not just from university...parenting does affect this. Yeah. Because obviously, we grew up in a household with our parents, right? So we would mimic a lot of things from our parents. So... they are like that with our family members, they are very soft-spoken, and they are not direct. For example, we go back for a while, and we just want to stay for a short period. But just because we want to be polite, we couldn't say it. So it starts from there. So... we have implemented this in our... daily life.” (DU116-1118I8)

vii. Passionate

Informants 1 and 8 shared that being passionate will enhance graduate employability and lead them to produce high-quality work. When graduates are passionate, they have interests in the course or field that they are learning, and they love doing their job.

“And then passion lah. You work with passion...” (DU56I1)

“So they must have passion in whatever they do. They love doing it. Because there are a lot that take the course, they had to take it just because they want to enter public institution (not because of passion).” (DU146I1)

“Interest. Yeah. Interest in their specific field. Yeah, passionate. That's the word, passionate.” (DU64-66I8)

viii. Disciplined

Besides being passionate, graduates who are disciplined are preferred by employers, as shared by Informants 3, 5, 7 and 9. Graduates who are disciplined listen to their superiors and do not rebel or refuse any task given to them.

“...from my point of view normally, I would like to prefer candidates who can... aa listen to the superior.” (DU26I3)

“...and those who listen to instructions. They do not rebel.” (DU112I7)

“Then, when I'm signed, any task...or project, or when I, um... promoted to any position. So, I, I will never decline, so I will never decline to my boss. Because some people, they keep declining, they keep running, right? So, I will never decline to my boss.” (DU86I9)

From Informant 5's observation, students nowadays lack punctuality in terms of assignment submission. He advised students to be disciplined and improve this quality because once they enter the workforce, due dates are usually non-negotiable.

“One of the things that I always think that a little bit lack in nowadays student, nowadays student a little bit lack on punctuality, especially in submitting the assignment itself. That is one thing that they should improvise... Because when you go to the real world, when you work in the company, the due date is not negotiable, usually.” (DU60I5)

ix. Persevering

As an expert in the Architecture industry, Informant 1 stressed the importance of being tough and being able to persevere with whatever challenge that graduates are facing. She added that those who are taking Architecture usually have to work overtime to find solutions. At the same time, employers prefer those who are open-minded and do not feel demotivated by criticisms given by their lecturers or colleagues.

“Like architecture, it’s normal that you don’t sleep... Maybe overtime right... you want to design a building that is workable. Want to make it functional. And effective. So working late hours is normal in architecture. Meaning these people must be tough.” (DU226I1)

“...constantly openminded for improvement lah... they must have the mindset to take criticism and move further to produce better product... Don’t be negative towards criticism. They should take it as a challenge. They should be trained to take it as a challenge. And not feel down or demotivated, and change their course every time they are criticised.” (DU308I1)

x. Loyal

Employers value graduates who are loyal to the company. Informant 3 is able to determine their loyalty from the way they answered questions during a job interview.

“So from their answer I can... assume or I can decide that this is a good candidate that will stay long. Or... these are just stepping-stone candidates who just love to stepping. So, I would like to prefer candidates who... can stick more than I expect.” (DU24I3)

xi. Ethical

Graduates who are ethical and work with integrity are highly employable, as discussed by Informant 3 and 8. With ethics and integrity, employees will work in an *amanah* way and employers will hire someone that they can trust to work with them.

“Ethics in everything, ethics. Ethics, good manners, respect for people, no bribe. Because if you have a good or very brilliant person but no ethical, then they will do evil...So, in ethics, normally they mention that you cannot bribe, you cannot do....that means you perform your work in ethics lah... in an *amanah* way.” (DU152I3)

“Erm... Integrity. I would say, if I am a hiring manager and I want to hire someone, I would want someone who I can trust.” (DU62I8)

xii. Respectful

Informants 3 and 7 stated that employers prefer graduates who are respectful and have good manners.

“And.... Have... a good idea and share with good manners...respect people...” (DU26I3)

“And then aa..... aa well-mannered...” (DU112I7)

xiii. Quality worker

Graduates who are quality workers will stand out to the employers, Informants 5 and 9 claimed. As a lecturer, Informant 5 can identify this quality by looking at the students' assignments. Informant 9 shared that most companies in Malaysia will hire quality workers.

“And then the quality of their assessment. The quality makes it different from other students. The quality is that they apply the theory that they learned in class. So that is the major difference.” (DU70I5)

That's why, most of the companies in Malaysia, are looking for quality workers like that. This one is shared by HR lah from my previous company. (DU50I9)

xiv. Assertive

Being assertive is also important for graduates to be highly employable, as discussed by Informants 8 and 9. Informant 8 highlighted that graduates should be assertive and direct when voicing out their opinions.

“Yeah. When I said “polite”, I mean, we beat around the bush a bit. And we don't go straight to the point, because we don't want to hurt other people's feelings. But the thing is, it wouldn't help us much, especially when we're working. We have to be very direct.” (DU112I8)

“Yeah. At the same time, we can see how it helps us as students in communicating and voicing out our opinion. So, this helps us... later on... in our job.” (DU186I8)

Informant 9 shared his previous experience of voicing out to his boss regarding his workload. He advised graduates to communicate with their superiors if they are burdened with a high workload.

“Yeah, it happened once, last time. Uh, so I communicate with my boss, I talked to him that, I say that, uh, “The current workload is so high. So I asked him to... get an assistant.” So, fortunately, he agreed. he said he thought that I could deal with the job. And he doesn't know about that. So, thank God, he said that I told him, and then he tried to get an assistant to assist. So, the key is communication.” (DU88I9)

4.5.2.2 Employability Skills

i. Problem-solving

Almost all informants highlighted problem-solving skills as one of the top skills that employers seek among graduates.

“creative... aa high problem-solving skill...” (DU110I7)

Informant 1 stated that problem-solving skill is needed among architects because they need to solve the design problems faced by their clients.

“...actually architecture is problem-solving. People I mean client, they have a land, they give you, you're supposed to solve for them.” (DU60I1)

During job interviews, Informants 2 and 3 ask scenario-based questions to predict the graduates' problem-solving skills when issues arise.

“So we will ask, okay, let's say you see this kind of person aa climbing more than 2 meters, without wearing a harness. What will you do? So from there, we will see the feedback, response by the... candidate.” (DU36I2)

“First, depend on how... they respond towards the..... their experience on how they will do the job. And normally I will provide them with a.... one scenario and I will see how they respond to that kind of scenario. To look how competent or how mature their answer is.” (DU22I3)

As lecturers, Informant 4 and 6 equip their students with problem-solving skills from their courses and final-year projects. Informant 6 added that her institution will invite industrial experts to provide feedback on the student’s final-year project.

“...if we look at our students here in KOED, regardless of their major, communication skills, what else do you say? Problem-solving. These skills are all taught in other courses.” (DU58I4)

“At the end of the semester, for their project presentation, we will invite the industry. The industry will come and give feedback, to show whether their project achieves the quality of a student that is capable when they work later, as engineers they are capable to solve the problem.” (DU36I6)

Informant 8 stated that a good problem solver will be able to work independently and this skill is beneficial among those working in corporate jobs.

“I feel like someone who is a good problem solver, they don't really need somebody else's help. They could do it themselves. So, I feel like that one would be very useful when you're working in an office. Because erm like in an office setting. When I say office, I mean like corporate... corporate job.” (DU88I8)

ii. Communication and presentation

Communication and presentation skills are crucial in enhancing graduate employability, as discussed by Informants 1, 3, 4, 5 and 8.

“...my current industry needs people with confidence and communication skills. That’s why I use the same point lah.” (DU142I7)

“...collaboration... and communication skills.” (DU30I9)

Informant 3 said that communication skills are important for graduates to communicate with different levels of colleagues.

“For example, there are certain people who can communicate with the management, but are unable to communicate with employees. Because when you are in the industry, normally you have two kinds of levels. You need to report to the superior or you need to report to the below level for example. So you have the management or you have the non-management. So to approach these two groups, you need different skills of communication.” (DU50I3)

Informant 4 gives a mix of individual and group projects to the students. Group projects develop their communication and problem-solving skills for their future employability.

“...that's why we mix, I mix, there are some individual projects. There are some group projects because the problem-solving skill is in the project, and the communication skill is in the group project. Okay. So the project is not just to deliver the outcome, the main outcome only, but also for them to develop other soft skills, okay, required for them to be a good team player in the job sector.” (DU64I4)

Informant 5 advises his students who want to become teachers in the future to learn a particular skill in communication called persuasion. According to him, the way to communicate with students nowadays is different and it requires persuasion skills.

“I always remind my students, those who want to become teachers. Persuasion is always the best option when you're dealing with other people, especially with their students, one of them. Because nowadays, students are no longer need to be afraid of their teachers. They need to be... friendly with their teacher.” (DU12I5)

Informant 8 stated that communication skills can be developed over time. This skill is important because it teaches graduates to be eloquent in voicing out thoughts to solve problems in the workplace later on. If they are unable to communicate well, problems might not be handled well, she added.

“Communication skill. I put that as number two because I feel like it's a skill that could, you could brush up on. You could become better and better so I don't put it as number one. But still, you have to have it. You got to have the skill. So, I think communication skills would work in most fields. Because erm if you're not able to communicate, if you're like an introverted person, and you're not trying to erm be... I wouldn't say extrovert, but trying to be eloquent... in certain things. Because, you know, when you're in a meeting, you have to erm to voice out whatever problems you're dealing with. Because if not, then you cannot deal with the issue. You cannot solve the issue. So, I think communication skills are important as well.” (DU72I8)

Informant 1 shared the importance of mastering presentation skills. Being good at presentation will help the graduates to deliver any message or idea that they have successfully. In architecture, the students are used to giving presentations as well as being criticised for their work, she added.

“Usually architects need to be good at presentation. But I think, there are some cases, where the drawing is so superb, it speaks a thousand words lah. But they still need to know how to present. They cannot be bad at shaking (because of nervousness). They need to go to the front and present their drawing. Meaning they are used to it since university... They needed to pitch their design, and got criticised...their design. The lecturers will criticise.” (DU218-223I1)

iii. Critical and creative thinking

Informant 8 shared her experience learning literature subjects from a lecturer who encourages his students to think critically.

“Mr. B also taught me to write erm a very critical paper. I wouldn't say paper, aa assignment. So, instead of saying something is black and white, I don't think things are black and white anymore. I do believe I need to be critical of something. It could be that I could write about a certain issue, but I do not totally agree with it. Yeah. So, I think aa critical thinking. Mr. B taught me critical thinking as well.” (DU158I8)

Besides critical thinking, employers seek graduates who have creative thinking skills. Informant 1 stated that creative thinking skills are crucial in problem-solving. She gave an example related to designs in architecture.

“Right, how you want them to be creative lah. Or like you want to draw a dome. It’s quite difficult because it curves, but the graduates know how to make it simpler, right? They, they are creative lah. Meaning not, not straightforward, people say “A”, “A”. They don’t know how to find other ways, right? Ha, let’s say you learn like this, then just follow this. You cannot think of other ways to solve the problem.” (DU130I1)

iv. Leadership

Leadership skills are crucial for graduates to master to stand out to employers.

“Okay, once they invite the candidates... and the leadership skill will be the one that will differentiate between the person and other candidates.” (DU32I9)

As an expert in Occupational Safety and Health (OSH), Informant 2 stated that they seek graduates who have mastered coaching or leadership skills. This is because, when they are hired as safety officers, they need to lead other people to obey the rules of safety at the workplace.

“Since when we talk about safety, usually aa safety means aa like coaching to the... other people when you are at offshore. So we will ask, okay, let's say you see this kind of person aa climbing more than 2 meters, without wearing a harness. What will you do? So from there, we will see the feedback and response by the... candidate. Some, some, some people, they just say that, “Oh, well just straight away... walk, continue his routine, walk about.” But some of the people have a different aa perception. So they will immediately intervene, and ask him to immediately aa, come down and have a conversation.” (DU36I2)

Informant 2 added that students who studied OSH took a specific subject that focused on leadership skills. They were exposed to the skill to lead and manage people from different backgrounds and personalities.

“So usually, on the coaching... this is part of the university phase, because, aa those come from the safety background, aa one of the subjects, aa under Managing People. So, these dedicated subjects are teaching, uh, sorry, teach, on the, how to manage, uh, this kind of person, uh, those, uh, stubborn. So you have a different skill on how to handle them.” (DU56I2)

v. Digital

The development of digital skills will enhance graduate employability, as discussed by Informant 4, 5 and 6. Informant 4 said that if he were to employ new staff, he would choose candidates who possess digital skills because it will help them to perform in their work.

“...if I were to employ anyone to work with me, I would want the candidate... to have the skill set that helps them to do their job better and faster. And in these days, in the 21st century, elements, digital skills are one of the important elements that I will be looking at... from any candidate. So, if they can do their job fast and better with the help of digital tools, so that would be one of the criteria that I will be looking at in the candidate.” (DU44I4)

Informants 5 and 6 shared how the students are exposed to digital skills in the courses that they take in their programmes. According to Informant 5, aside from becoming teachers, the students were exposed to the concepts of design which helped them become better designers in the future.

“So, from these IT courses, they learn why the texts need to be like that, why the colours should be like that. So, that is one thing that makes them a better designer, that is one thing, making them understand what is the principle in designing certain things.” (DU26I5)

Meanwhile, the students in Informant 6’s faculty are exposed to the latest technology, materials and software that are trending in the industry. However, there will be newer technology that they never see yet until they graduate, she added.

“The latest technology like when we talk about construction, so there will be a lot of latest technology. Or if we look at... because when we talk about civil engineering there are a lot. We have the technique, and the latest technology too, right? So if... when the students graduate, they will see- meaning they have to design a new building using new materials. That’s an example of technology too. New technology, that when they enter the workforce, they will see it. Things that they won’t see in university.” (DU48I6)

vi. Instructional Design

Instructional design skill helps teachers to design a good learning experience for the students, Informant 4 stated. His students are trained to become teachers and Instructional design subjects are taken as minor subjects in his faculty. In Informant 4’s opinion, he will look for candidates who are not only teachers but also instructional designers.

“So, if I were to employ a fellow academic, okay. What I would be looking at also is their skills or their knowledge in Instructional Design, where they are not just a teacher who goes into the class and teach, but they are able to design a very good learning experience with the help of knowledge in Instructional Design. Okay. They are not just teach, but they design and develop learning experiences for their students.” (DU46I4)

vii. Teamwork

Informants 3, 5, and 9 highlighted teamwork skills as one of the important skills that graduates should have to be highly employable. Informant 3 stated that in the industry, employees must work in teams, except for certain industries that do not deal with humans.

“...when we talk about working in the industry, as mentioned again, teamwork, the working environment is one of the important things because, in the industry, you cannot work alone unless you in like the IT industry or computer industry, maybe we understand it, but if like a manufacturing or production or whatever industry, that needed the teamwork of people...” (DU48I3)

Informant 5 advises students to learn how to work in a team during their study years because there will be work politics and they need to know how to carry themselves in when situations arise.

“...students need to prepare for making their chances a little bit higher, to be hired by employers is that they need to know how to delegate well and to work well with others. The reason why I'm saying this is that wherever you go in this world, there's always politics, we call it as politics, work politics, friends with politics and everything. So, they need to know... when to become friendly, when to be firm with their decision, and then they need to know how to carry themselves and bring themselves to the spotlight.” (DU42I5)

Informant 9 added that without teamwork skills, graduates will fail to lead people. He advised improving both teamwork and leadership skills to ensure continuous support from colleagues.

“And even though you have a good leadership skill, but if you don't have a good teamwork, still people will not follow you. So that's why... once you have a leadership skill... and then you manage to work together with others, you manage to collaborate with other team members, work in a team, and then everyone... will support you even though you don't have strong knowledge about the things that you run... because of the leadership and the teamwork, people behind you will support you.” (DU38I9)

viii. Language

Informants 1, 3, 7 and 8 highlighted the importance of mastering language skills to enhance graduate employability.

“I think... I think communication skill... And a bit of confidence level. English language as well.” (DU186I7)

“I would definitely say the language skills. Erm... Communication skills as well.” (DU188I8)

Informant 1 said that when graduates have good English language skills, they can gain better results from using English keywords to search.

“Your English should be good as well. Because Bahasa keyword will produce limited results... But if you search in English... and... your vocab power... ha... you will get more ideas... more samples... answers to your problem... whatever task that you’re supposed to do...” (DU2981)

In contrast, Informant 3 said that as an expert in the industry, he does not mind if the candidate uses English or Malay during an interview because their answers are what determines whether they are hired or not.

“Even though... the person or candidates are unable to speak English well, sometimes. But they can speak in Malay during the interview session. But based on the answer... it can reflect either they are chosen or not.” (DU28I3)

4.5.3 Skillsets ranking by the informants

Based on the interviews conducted, the researcher has summarised the comparison of skillsets ranking made by the informants. The ranking is based on which personal quality or employability skill(s) is/are the most important, the least important, and what is the added value that makes the graduates stand out to employers. The summary of skillsets ranking can be seen in table below.

Table 4.2 Skillsets ranking by the informants

Informant	1	2	3	4	5	6	7	8	9
The most important	1. Passionate 2. Hardworking 3. Communication	1. Confident 2. Communication 3. Problem-solving	1. Respectful 2. Independent	1. Instructional Design skills 1.1 Innovative 1.2 Adaptable 2. Digital skills	1. Hardworking 2. Teamwork 3. Showcase self	1. Knowledgeable 2. Teamwork	1. Problem-solving and creative thinking 2. Independence, communication and language 3. Confident	1. Passionate 2. Communication 3. Ethical	1. Leadership 2. Knowledgeable
The least important or optional	Having a Degree	Qualification (competency training) is optional	Innovative	Digital skill	CGPA	-	Being ethical	Problem-solving and creative thinking depend on industries	Teamwork
Added value	-	-	-	-	-	High CGPA	-	Stress management	-

Informant 1

Informant 1 listed passionate as the most important quality, followed by hardworking, and communication. She added that having a degree is the least important because experience is what influences employers to hire graduates.

“Number 1 is passionate, 2 is hardworking, 3 is communication.”
(DU232I1)

“Ha, degree certificate is not important. That is for aa salary lah. They show even just SPM, but they can do everything, their experience, they can prove it, then can be hired.” (DU64-70I1)

Informant 2

Informant 2 placed confident, communication, and problem-solving skills as the most important qualities, with confident as number one. According to him, qualification in competency training is optional because the company will send the employees for training once hired.

“High-confidence. Communication. And aa problem-solving.”
(DU74I2)

“Oh this one, sometimes we can send after we...hire them. That one can send these people to training. No issue, because all the training fees nowadays HRDF kan, totally claimable. So... at zero cost.” (DU80I2)

Informant 3

Being respectful is the number one quality that employers will look for among graduates, as shared by Informant 3. Being independent and willing to learn is the second quality that he expects graduates to have.

“The most is respect for people. And then the least is... innovative thinking. The best one for me is respect is important.” (DU40I3)

He added that employees who are respectful will make it easier for their superiors to manage them. Respect from the employees also reflects the superiors' leadership.

“Because if... the candidate, no respect for people, so it will be difficult for me to manage that kind of candidates or... future.... colleagues or future employees. Because I will represent on behalf of that kind of employee. So if employees have issues with other people, it will reflect on me as well. I need people who have good communication with good respect.” (DU44I3)

According to him, being independent and willing to learn is crucial to further develop the graduates' knowledge.

“...knowledge level can be developed. But if not willing to learn, then no meaning. And no respect for people also it's difficult to control that kind of candidates.” (DU34I3)

Informant 3 listed innovative as the least important quality among graduates because unlike those in the Science industry; innovative thinking is not so much needed among Health and Safety Executives.

“So... if the candidates have a good respect for the people, maybe he does not need such as innovative thinking when he or she, can get innovative thinking from other team. It's not like you can manipulate other people, but because of your good way and you have respect for people, from that... So because... most of the HSEs (Health and Safety Executives) may not have innovative thinking because their background is not... from the kind of understanding. Because they are not like science training, education, and so on.” (DU54I3)

Informant 4

Informant 4 teaches students who will become teachers. Therefore, he expects them to be equipped with Instructional Design skills alongside innovative and adaptable personal qualities.

“I would put ID, Instructional Design or some people are calling it Learning Design on top.” (DU54I4)

He stated that good instructional designers must be innovative and adaptable because they will be able to adapt even in poor technology environments.

“I teach them to be very adaptable even if you go to low-tech, you know what to do with low-tech. And if you go high-tech, you can give it your best because you have all the tools that you need. So most important is, an instructional designer has to be very adaptable.” (DU118I4)

“An instructional designer has to be innovative actually, it is a subset of a good instructional designer, to always be innovative.” (DU78I4)

Informant 4 explained that Digital skills are less important compared to Instructional Design skills. This is because the instructional design is the teachers’ plan whereas the digital tools that they decide to use are just means to help them execute their plan.

“Okay. So, this is most important because this is your master plan. Learning Design or Instructional Design is the master plan. Because we have the master plan, you need the vehicle to carry out your plan. You need the tool to carry out your plan. So, the next comes to knowledge of Educational Technology because this will allow you to search for the right tool to execute your plan.” (DU54I4)

Informant 5

Informant 5 shared that employers will value graduates who are hardworking and have teamworking skills. He ranked hardworking as the most important quality followed by teamwork.

“So, getting the job done is the number one priority. And then the second one would be, they need to know how to work well with teams.” (DU48I5)

The third factor that will make graduates stand out to employers is that graduates should know how to showcase or promote themselves. He added that a high pointer or CGPA will not guarantee them to be hired.

“...And then the last thing is that you need to know how to show yourself.

Because employers, they don't really want to know what is your PNG, the PNGK or whatnot. CGPA, what is your pointer, they don't really care.” (DU42I5)

Informant 6

Similar to Informant 5, Informant 6 listed teamworking skills as one of the important skills for graduates to have. Being knowledgeable is ranked as number one while teamwork is number two. She believes graduates should master the knowledge first, then only they prepare themselves with teamworking skills.

“...when we look at the area of engineering, of course, we want the understanding of the basic, that is the most important. Basic engineering because if they lack the basic engineering knowledge, they will not be able to work efficiently when they graduate, right? So once they have the knowledge, then they just prepare themselves in terms of how they want to work in a team.” (DU32I6)

Unlike Informant 5, Informant 6 stated that having a high CGPA is an added value that employers will notice first when the graduates go for a job interview.

“Yes, that's (CGPA) very important. During an interview, usually people will check CGPA first right.” (DU90I6)

Informant 7

Informant 7 ranked problem-solving and creative thinking skills as number one among the most important skills for graduates. Being independent, good in communication and language came as number two and being confident is number three.

The most important I think problem-solving and creative... and then confidence... and independence and communication. Those are the most important. I would say the same as communication. It's important as well. (DU188I7)

She also said that being ethical and honest is the least important.

“Being honest and trustworthy (are the least important)” (DU118I7)

Informant 8

Similar to Informant 1, Informant ranked passionate as the most important quality that graduates should have to enhance employability. The ranking is followed by communication skills and being ethical or having integrity.

“I would say passion is number one. Communication skill. I put that as number two. Number three is the... erm integrity.” (DU72I8)

She believes that problem-solving and creating thinking skills are optional as not all industries need employees who possess these skills.

“Okay, the thing is with problem-solving skills and critical thinking, I think people who work in the office, yes. That would be applicable.” (DU74I8)

When graduates learn stress management well, it will be an added value for them, she added.

“I think what is more important is aa stress management.” (DU74I8)

Informant 9

Informant 9 listed leadership skills and being knowledgeable, as the most important skill and quality that will increase graduate employability. He used the term ‘professionalism’ to mean mastery of knowledge among graduates.

“I think on top, on top of the list is, I think leadership is the most important. I'll put teamwork as second. And the third one is... professionalism. Professionalism actually is very general, but it consists of you master the knowledge that you learned. If you wish you work as an accountant, that means you master the knowledge of accounting. And then when we... someone asks about accounting and you can simply just give the answer, that's what we call as professionalism.” (DU36I9)

He placed teamwork as the least important skill for graduates to have. He reiterated that even though teamwork is at the bottom, it is still important for the graduates to have.

“If I rank all of the skills..... I put collaboration at the bottom. Because sometimes when we work, when we work in a company, some career or some position, we don't need to collaborate so much with others..... I put collaboration, maybe the least important. But, it doesn't mean that it is not important. It is still important, but maybe it is the least important.” (DU48I9)

4.5.4 Importance of Skillsets

The study found several reasons why the skillsets shared by the informants were important to them. The importance of skillsets can be seen in Figure 4.5 below.

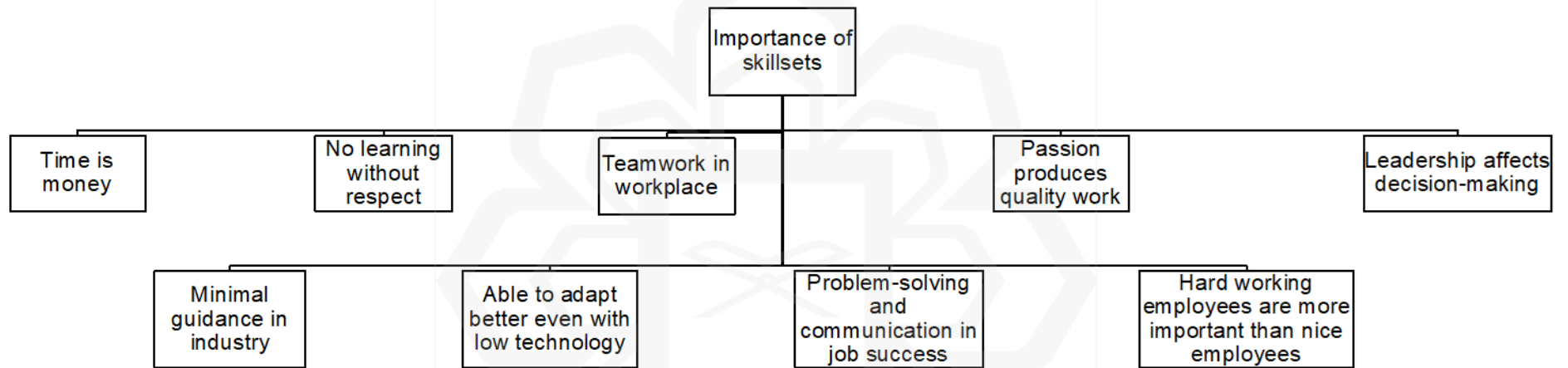


Figure 4.5 Importance of Skillset

4.5.4.1 Time is money

The first reason why skill sets are important is because time is valuable to employers. Informant 1 said that employers refuse to waste time hiring employees who are incapable or take a long time to perform their work. Hence, they will only hire the graduates who have the skillsets that they were looking for.

“You know, you can dream the sky, but if it cannot be built, then we are wasting our time. And time is money.” (DU24I1)

“We have to pay, every month, how much is their salary. The longer they take the more we are paying, yet the production? What kind of production, the result... that they are giving us? If we have only three months in design, and when we present it to our client, they are happy... you know whether financially... design wise... workability and functional of the building, workable, then it's better than taking six months, how much whe- the company has to spend, to pay them just to get the design approved by the client.” (DU26I1)

4.5.4.2 Minimal guidance in industry

Another reason why skill sets are important is because of the minimal guidance provided by employers when graduates enter the industry. Due to this, Informants 2 and 9 said that graduates need to be independent and they are able to make decisions on their own.

“Because, when they are hired, they have minimal guidance.” (DU88I2)

“Because... when you jump into the job market, most of the time you have to be independent. You cannot rely on others, you have to be independent, which means that you have to make a decision on yourself.” (DU50I9)

4.5.4.3 No learning without respect

When graduates are not respectful, they are not willing to learn, which will affect their learning sustainability and employability. Informant 3 stated that in industries such as Occupational Safety and Health that heavily focus on working with people, being respectful is crucial. This is because the employees need to adhere to safety rules whereby this compliance is achieved through employees' respect.

...And no respect for people also it's difficult to control that kind of candidates. (DU34I3)

“...in the first place for HSE, the objective is to ensure all employees working in a safe and health. So means, all the HSE candidates, most of it is dealing with people. So... to get their learning sustainability for example, so whatever they learned at the university needs to be applied to the people who they work with. So without respect, as it would be difficult for the candidates to work and also to apply for whatever activity program that they... want to implement. So... if no work or no activity, there is no learning or no sustainability for them as well.” (DU46I3)

4.5.4.4 Able to adapt better even with low technology

Besides that, with the right skillsets, graduates will be able to adapt to the workforce even with low or poor technology. Informant 4, who teaches future teachers and instructional designers, said that good instructional designers will be able to adapt and design the best learning experience using the technology that is available to them.

“And that's why I put technology second. That's why I put Instructional Design first. Because, even if they are in a setting where technology is not as digital as how they want it to be, it could be analogue technology. But if they have a very sound knowledge of Instructional Design, they can design engaging, active, creative learning activities using whatever they have around them.” (DU74I4)

“But that's why, I told them, that's why Instructional Design is most important. Because be it high-tech or low-tech, if you are a good learning designer, you will know how to design learning the best way possible using whatever (technology) that you have with you at the moment.” (DU112I4)

4.5.4.5 Teamwork in workplace

Skillsets are important for graduates to have because there will always be teamwork in workplaces. Informant 5 stated that there will be issues among employees when working in a team, hence teamworking skills should be developed early.

“Because when I'm working at my previous company, we always work in teams. So, well, we cannot, we cannot say that when we work in a team, everything will be okay. Because sometimes we are the problem, sometimes other people are the problem. Because when you work in a team, sometimes there are some people that try to steal your spotlight. So, you need to know how to be in the spotlight too. And sharing the spotlight. (DU48I5)

As a lecturer, Informant 6 stated that teamworking skills can be improved after the graduates have entered the industry. During university, students have been given exposure to work from group projects or assignments.

“So the teamwork, even if it is part of our PO (programme outcomes), teamwork and all that, but this skill can still be improved when they start working. Because teamwork can change right, when they graduate, the teamwork will change. As long they know how to work in a team, they have the skill, it's just they need to improve it, skills like that.” (DU34I6)

Informant 9 added that employees may not follow leaders who do not have good teamworking skills. To ensure full support from the employees, good teamwork is needed.

“And even though you have a good leadership skill, but if you don't have a good teamwork, still people will not follow you. So that's why... once you have a leadership skill... and then you manage to work together with others, you manage to collaborate with other team members, work in a team, and then everyone... will support you even though you don't have strong knowledge about the things that you run... because of the leadership and the teamwork, people behind you will support you.” (DU38I9)

4.5.4.6 Problem-solving and communication in job success

Problem-solving and communication skills play a role for graduates to succeed in doing their jobs. Informant 7 said that if one does not have problem-solving skills, they fail to do their job because they need to rely on others to solve the problem.

“...if the person doesn’t have problem-solving skills right... they need other people to settle their work. Meaning they fail to do their work. They are unable to do so. If they don’t have problem-solving skills. The same goes for creative... let’s say... suddenly there’s a problem, but the person is not creative to think of a solution... he or she will burden other people... to do the thinking for him...” (DU126I7)

At the same time, communication skill is needed for graduates to discuss and brainstorm solutions together, as shared by Informants 7 and 8.

“Confidence and communication are needed when the task requires them to work with other... person. This is important because if they are not confident... and have poor communication, it might give a bad impression to the... company.” (DU128I7)

“So, I think communication skills would work in most fields... Because, you know, when you're in a meeting, you have to voice out whatever problems you're dealing with. Because if not, then you cannot deal with the issue. You cannot solve the issue. So, I think communication skills are important as well.” (DU72I8)

4.5.4.7 Passion produces quality work

The next reason why skill sets are crucial for graduate employability is because those who have passion will produce high-quality work. Informant 1 said that employers prefer graduates who are passionate about their work.

“You work with passion, if you work *lepas batuk di tangga* (Malay proverb that means lack of enthusiasm), we don’t want lah. Right meaning the graduates must have passion, they’re like engrossed when they do it, it’s different right when they really work on it compared to doing it just because.” (DU56I1)

Similarly, Informant 8 believes that when people are passionate, they will give their all in doing their work.

“Because I feel like if you're passionate about something, you would give your all. Because the thing is, if you're not, for example, I'm a lecturer... Right? And I am passionate about teaching. So I'm not just doing this for my students. But at the same time, I'm doing this for me. Because I want to be a better teacher.” (DU70I8)

4.5.4.8 Hard working employees are more important than nice employees

Informants 7 and 8 both believe that employees who are hardworking are more important to employers compared to those who are nice. Informant 8 added that being nice does not guarantee job performance.

“If the person is not trustworthy, they can just fire him or her. ...because sometimes those who are well-mannered, they don't really perform at work. Usually, they just wait for instructions. If the boss didn't ask, they won't do.” (DU122I7)

Informant 8 said that people could change over time which means that being nice is not the top quality that employers will seek among graduates.

“Number three is the... erm integrity. Because like I said, people could change and become better.” (DU72I8)

4.5.4.9 Leadership affects decision-making

The final importance of skillsets among graduates is because leadership will affect the decision-making process in the workplace. Informant 9 stated that good leaders will have a strong influence on how people think and make decisions.

“...once I read about scholars, scholars they said about, even though you don't have the knowledge about the things, if you have that strong leadership, you can turn the table, you can turn the table around. It means you can change the decision of someone from this to this. Even though... you don't have actually much knowledge about that kind of things, but because of strong leadership skills, you can change the people.” (DU38I9)

4.5.5 Current practice at the industry, university and alumni levels

Another theme generated from the interviews is regarding the current practice at the industry, university and alumni levels. The details of the practice can be seen in Figure 4.6 below.

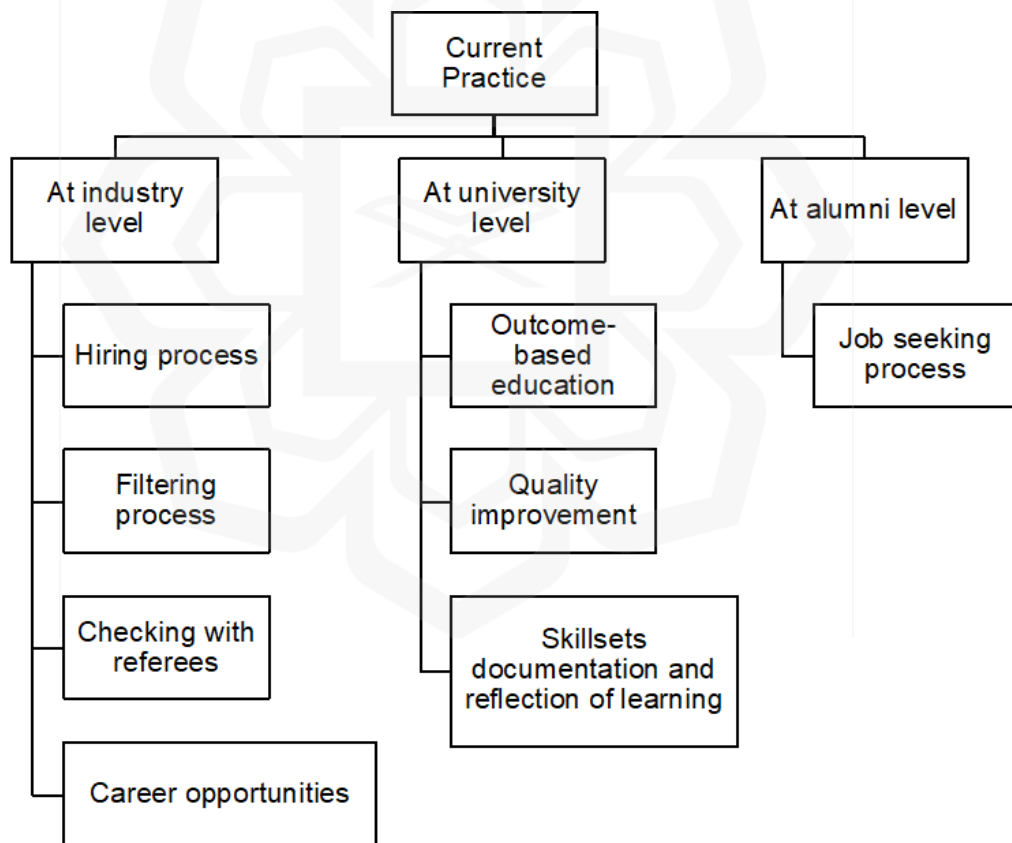


Figure 4.6 Current Practice

4.5.5.1 At Industry level

i. Hiring process

During the interviews, the industrial experts shared the hiring process that is practised in their organisation. Informant 1 shared that her workplace uses sites such as Mudah.my and JobStreet to advertise job vacancies. Social media such as Facebook is also used to seek employees.

“...when, when we have projects, which aa which require manpower, aa more than what we have currently in our office, we will... advertise in Mudah.com, aa in JobStreet, aa in the media, aa Facebook aa of the vacancy...” (DU16I1)

Informant 1, who is an expert in the architecture industry, shared that they expect to receive a portfolio when the applicants send in their resumes. They will look at the applicants' portfolios and those who fit the criteria that they want will be shortlisted for the job interview.

“So attached we want to see what's in their portfolio. So if their portfolio has the things that we want, we call them. If not, then no. Meaning what we expect them to show in their portfolio, but it's not there, they are unable to do it, we won't call them.” (DU80I1)

Another practice in her organisation is to give a task for the applicants to do before the interview. For example, they give a sketch for the applicants to interpret and transform into a drawing using an application called AutoCAD. Informant 1 added that this skill is crucial for a draughtsman role in her organisation.

“Before we interview, we'll ask them, we give them one hour to do it... So we want to see their skill. Aa because when you design a drawing it must be aa from the plan, what are the details that should be put? Because like architects, they just sketch... draughtsmen are the ones who will do the drawing.” (DU88-90I1)

Informant 2 shared that before the HR (human resources) can advertise any job vacancy, they need to ask for approval from Petronas because, in the oil and gas industry, Petronas will cover the cost of the vacant position. Upon approval, Informant 2 will share job descriptions with HR to post on the company portal.

“So usually on the hiring process, aa this one will start from the... our request to HR. So basically, if there's a need to make available aa the vacant position. So we are required to have an approved box... which is the dedicated box, position for that role. So that one also requires aa our... aa Petronas approval lah, because in oil and gas, any box all the cost recovery by Petronas. Alright, so... on the hiring process, aa once we have identified. So that one will cover also by the JDs, sorry, the job description and the position itself lah... Then, HR will start to post aa in the, our company portal.” (DU10-14I2)

Besides posting on the company portal, Informant 2's organisation will also advertise the vacancy on LinkedIn. Those who have connections that are looking for jobs may also submit their CV to the current employees, he added.

“Haa that one another database like LinkedIn lah. So that one also have. So for any close connection, they also can drop a CV.” (DU16I2)

Similar to the practice of Informant 2's organisation, Informant 3 said that they need to get the management approval before the HR can post any job advertisement. The HR will also do the shortlisting process. Then, Informant 3 will be involved in the interview process.

“So normally I need to submit approval to the management. For example, aa to have like replacement candidates or new roles of candidates. And if the management approves, then it will go to the HR. And then HR will do all the recruitment. And they'll arrange back to me during only for the interviewing and selection of the candidates.” (DU12I3)

ii. Filtering process

Informants 2 and 3 shared how they filter the candidates for the interview and then make the decision on which one to hire. Informant 2 stated that he filters candidates to be called for interviews based on their education and experience.

So... once we receive a thousand eh bulks of CV. So there starts the... filtering starts lah where the candidate being selected for the... interview based on the... education experience. So... that's the process. (DU16I2)

During the interview, there are a few points that employers will look for to decide between hiring the candidates. Informant 2 said that the experiences that he values include non-work experiences such as organising workshops or giving talks.

"...let's say, previous, he able to uh, to organize a workshop, health talk, uh, also providing the talk to the public. So this kind of the example lah will be credit." (DU118I2)

Informant 3 added that he will select the candidates based on how the candidates are able to commit to the role during the interview.

"So normally for interviewing is... already selected based on their competency. And during the interview... aa I will see how willing or how commit they are, towards the kind of destiny or... towards the vacancy that has been provided." (DU26I3)

iii. Checking with referees

Informants 2 and 3 said that after the interview is done, they will contact the referees listed in the candidates' resumes. This practice is done to verify the information shared by the candidates as well as their behaviour, as shared by Informant 2.

"And then also on the behaviour, connection. So this one, usually we will aa start contacting the reference to verify all the information, tally, based on the CV, aa provided." (DU42I2)

Similarly, Informant 3 contacts the candidates' referees to check the candidates' previous work attitude and commitment.

“So referral is very important for me. So even though I select, I will call the referral, to justify that either this kind of person is good or not. And sometimes also, when my former colleagues go to other industries, they put me as a reference. So some company called me as a reference, and they also asked me a similar question “Is this person okay or not?”” (DU66I3)

iv. Career opportunities

Based on the interview with Informant 2, it was found that there are lack of career opportunities for fresh graduates in the oil and gas industry. According to him, this industry prefers to hire seniors with more than 15 years of experience. This does not allow fresh graduates to venture into this industry.

“Conclusion is, there is a lot of unemployed fresh grad.” (DU296I2)

“Because usually....they keep hiring the seniors. So... not giving the opportunity to fresh grad lah.” (DU300I2)

“All of them. (All oil and gas industries) For the seniors, with 15 years experience. So, how do the fresh grad want to start a career in oil and gas?” (DU302I2)

He also added that even though fresh graduates can do internships in oil and gas, the position is not available because the role is filled with seniors waiting to meet their retirement age.

“Because they are done with practical, then, it's done. [No opportunities to continue?] Ha because there is no box. So, that's the problem... in the industry. The position is not available in the industry. Because...they need to wait for the person to retire. Then only there's a box. It's happening in other industries as well.” (DU310I2)

Informant 2 believes that the industry should provide more roles to fresh graduates aside from hiring seniors. He suggested universities make a demand for more fresh graduates roles so they will have the opportunity to work in oil and gas.

“Supposedly, we open more roles lah. So, this kind of fresh grad, able to start the first career.” (DU300I2)

“No. Fresh grad roles are very... minimal. So better to have more. Maybe... university can demand to the... industry lah. So that the roles are multiplied.” (DU306I2)

4.5.5.2 At university level

i. Outcome-based education

Informant 6 shared that all public and private HEIs in Malaysia follow an outcome-based education system. Each programme is designed with the intended outcomes that the graduates are able to achieve before they enter the industry.

“And then, if we look at the 12 PO (programme outcomes) actually, which have been set by EAC, they are comprehensive actually. If we look- meaning engineering graduates who are from accredited public universities or even private universities in Malaysia, actually they are supposed to achieve the outcomes. And for us in our university, we really emphasise the students’ achievements of the POs.” (DU22I6)

She added that lecturers have the role of following the syllabus to ensure that the students will achieve the intended outcomes.

“We as the lecturers, we make sure, meaning the first step is we teach following the syllabus, and the syllabus itself is actually designed to prepare students to face the outside world when they graduate soon.” (DU14I6)

ii. Quality improvement

Another practice at the university level is quality improvement. Informant 6 shared that her faculty appoints advisors from the industry and they conduct annual meetings together. The meetings are to obtain feedback from the industry on further improvements in education so that the graduates are able to fulfil the industrial needs.

“We appoint industrial advisors where we’ll have meetings with them. We can say about once or twice a year. So, the advisors are from the outside lah. Meaning consultants or contractors right, who are working in civil engineering. So they will come to the university, or we will set the meeting, to ask for their feedback. So, during that time, we will ask them for their suggestions to improve our education system. So from there, we can see the relationship we have with the industry, there’s no gap actually.” (DU26I6)

Besides feedback from industrial advisors, the university also conducts continuous quality improvement (CQI) rated by the lecturers. The lecturers will fill in the CQI form as well as provide suggestions or action plans on what to improve for future semesters.

“And then we have what we call CQI. Continuous Quality Improvement if I’m not mistaken. So from this CQI sheet, we can evaluate. And from there we can make suggestions. For the next semester, what improvements can we do for better outcomes than the current semester.” (DU84I6)

iii. Skillsets documentation and reflection of learning

There was a mix of findings for skillsets documentation and reflection of learning. Informants 1, 4 and 5 stated that there was skillsets documentation done by the students in the form of a portfolio or e-portfolio. Informant 1 said that it is compulsory for architecture students to have a portfolio for them to graduate. The students also conducted a reflection on learning by presenting their report at the end of each semester.

“They need to have (portfolio). If not... they won’t pass. They won’t get the degree lah. Because, after each semester, they need to present... report.” (DU256I1)

Informant 4 and 5 taught their students to document their learning journey in an e-portfolio. This documentation will be shared with their future employers once they graduate.

“In my class, my students, it is compulsory for them to document their learning progress, for each of the subjects that they are taking with me. And... when this is documented, this can become evidence that they can carry into the job sector, into the job market. Aa... This documentation for my students is in the form of... e-portfolio.” (DU16I4)

“...to all students that I teach, I said, if you want to become a teacher, if you don't want to become a teacher, you should have your own portfolio. You should have your own portfolio to reflect and to showcase yourself to the world, actually.” (DU22I5)

Meanwhile, Informants 2, 3 and 6 shared that only some students compiled their learning journey in the form of a portfolio or e-portfolio. Informant 6 said that it is not compulsory for the students to build their portfolio, rather it depends on the students’ own initiatives whether to do it or not.

“Aa... For now, we don’t compile lah. It depends on them to record it. There are times when we will recheck but lately not so much. Meaning, it’s more on their own documentation. If documents like notes, then no. If they need to submit a report, then yes. Because usually our assignments are problem-based. Or case study.” (DU72-74I6)

From Informant 2’s experience as an interviewer, the graduates only submit resumes. There was no portfolio submitted. In terms of reflection on learning, he said the students learned it during university. However, the industry will still guide them to produce reports because of the difference in report types. The guidance is minimal and the industry has no issue with it.

“No (portfolio). Usually, they send resume lah. They learn (reflection and report). But, because different organizations have different types of reports. They know reports. But we still need to guide them. But very minimum lah. So, I have no issues here.” (DU288I2)

Informant 3 said that sometimes fresh graduates do not know basic things but they are able to perform after being guided, as long as they are independent, adaptable and willing to learn. This is because different industries have different types of reporting or reflection, and the students might not be exposed to all types during university.

“So far, if fresh grad I think, aa the basic thing, sometimes they don't know, but because they are.... When we taught once, then they able to perform it according to whatever we taught. Actually, it's not like a specific format for that. The important things that they willing to learn, they can learn from it. Because if you talk about reporting or reflection of learning, it will be different among the industry. Different industry requires different kinds of reporting.” (DU162I3)

4.5.5.3 At alumni level

i. Job seeking process

The alumni interviewed shared their experiences in looking for jobs. Informant 7 said that she got her first job as a kindergarten teacher through networking. She knew about the vacancy because she used to work part-time on campus and her previous boss told her about the vacancy. For the telemarketing job, she knew about the job from JobStreet.

“I got the job because of communication plus networking. I communicated with her, then I got the job. I know there's a vacancy usually from networking. For the telemarketing, I know from the website and JobStreet.” (DU198I7)

Similar to Informant 7, Informant 8 did not use LinkedIn and got her job as a lecturer from networking as well. Her friend told her about the vacancy and she applied for the job. Before that, she had the experience of working in the broadcasting industry. She knew about the vacancy from a television advertisement and her parents encouraged her to go for the open audition.

“Because I got this job. I got to know about it from my friend. So I don't have LinkedIn. So I know that some of the people might have all these other platforms and they use them. But I cannot say that I used it because I did not. For TV Al-Hijrah, the opening is mentioned on TV... So my parents just like asked me to go and try. So I just walked in for the open audition.” (DU206I8)

In comparison, Informant 9 knew about job vacancies through sites such as LinkedIn and Jobstreet.

“Yeah. I use both (LinkedIn and Jobstreet) every time to find jobs.” (DU98I9)

Informant 9 also shared his decision changing career from engineering to finance industry. He made that decision due to the economic crisis in oil and gas where he previously worked in. He was offered to work as a tax officer at the Inland Revenue Board (IRB) and accepted the offer.

“Basically... the main reason I changed my career is because of the economic situation, past... five years I think, because during that time I worked as a Production Engineer in ABB, one of the leading companies in oil and gas. And I think you also know about that during that time oil and gas industry was not so stable. So mostly what we call they end the service of their workers a lot. So even myself I also worried about my career at that time. I worried about my job at that time and the offer from IRB came right at that time. So without further thinking, I just accepted the offer. So thinking because thinking about the.... future of my job. And I think I made the right decision because I heard that my previous factory had been... shut down because of the unstable situation of the economy at that time. So I think I made the right decision. (DU4I9)

He added that in 2018, IRB no longer relied on employees who come from accounting backgrounds and the tax officer role is opened to those who come from other backgrounds as well. This is because the candidates they chose are able to adapt and develop new skills after they enter the new industry.

“Okay, one of the facts from the past five years in IRB, I heard that they changed the policy of the company... because previously they hired a lot of new staff from the background of accounting. But in 2018, I heard that they... tried to hire from different backgrounds as well as Engineering. In the beginning, I didn't know what the reason behind this lah. But now, when I talk to my senior and other staff, they said that because of the company, they heard that... the students from different backgrounds, they want to utilize the skill and the social skill because they, like this, the things that I experience, normally the staff, even though they come from an Engineering background, they managed to adapt with the job career even though they come from different backgrounds. So that's why the company, hire staff from other than Accounting background.” (DU14I9)

4.6 SUMMARY

This chapter has discussed the findings that the researcher has found based on the data analysis conducted. It was found that there are seven metacognitive strategies that enhance learners' employability and learning sustainability through education 4.0 as shared by the experts, lecturers and alumni. The strategies include: 1. Showcase self, 2. Self-improvement, 3. Exposure, 4. Self-study and study group, 5. Career development and training, 6. Reflection of learning, and 7. Teaching approaches. There are three themes generated to answer how Education 4.0 enhances learners' learning sustainability and employability which are Purpose and Advantages. There are 12 advantages of using Education 4.0: 1. Able to showcase self and enhance employability, 2. Improve and sustain learning, 3. Solve problems, 4. As an exposure, 5. Gain skills, 6. Save cost and time, 7. Convenient, 8. Produce the best result, 9. Customisable, 10. Bite-sized content, 11. Vast knowledge available, and 12. Generate income. Other findings discussed are the themes that emerged from the analysis.

CHAPTER FIVE

QUANTITATIVE DATA COLLECTION ANALYSIS OF DATA AND FINDING

5.1 INTRODUCTION

This chapter discusses the findings of Phase 3 through quantitative data collection and analysis done using the Fuzzy Delphi Method (FDM). The quantitative data collection and FDM were conducted to answer the third research question ‘How does the metacognitive strategies framework affect learning sustainability and employability through Education 4.0 from the perspective of experts?’ As written in Chapter 3, there were two rounds of quantitative data collection and FDM. The research instrument used was a five-point Likert scale questionnaire that was developed based on the findings from semi-structured interviews done in Phase 2. Prior to questionnaire distribution, pre-testing and pilot study have been conducted to ensure the instrument's validity and reliability which have been explained in Chapter 3. To implement the Fuzzy Delphi Method, the researcher translated the collected data into fuzzy numeric data form and analysed it using Microsoft Excel.

5.2 ROUND 1 OF FUZZY DELPHI METHOD

5.2.1 Demographic Information

As discussed in Chapter Three, 20 experts have participated for the first round of FDM. The table below shows an overview of the demographic information of the expert panel.

Table 5.1 Demographic information of expert panel from Round 1

Demographic data	N = 20	Percentage
Gender		
Male	8	40%
Female	12	60%
Academic Qualification		
Bachelor's Degree	7	35%
Master's Degree	5	25%
PhD	8	40%
Years of experience		
6 - 10 years	10	50%
11 - 15 years	2	10%
16 - 20 years	2	10%
More than 20 years	6	30%
Field of expertise		
Higher education		
Public HEI	5	25%
Private HEI	7	35%
New employee hiring	8	40%
Work sector		
Construction	2	10%
Education	17	85%
Finance and economic	1	5%
Total	20	100%

5.2.2 Round 1 FDM Process Results

Overall, there were 98 items in total which were categorised into 14 constructs under four different parts. Out of 98 items, 58 were accepted, and 40 were rejected, representing a 59% acceptance rate and a 41% rejection rate by the expert panel. The table on the next page presents the results of the FDM showing the experts' consensus on all items.

Table 5.2 Summary of Accepted and Rejected Items from Round 1 of FDM

Part	Construct	Items	Accepted	Rejected
Metacognitive Strategies for Graduate Employability and Learning Sustainability	Showcase Self	7	3	4
	Self- improvement	5	4	1
	Exposure	8	7	1
	Self-study and Study Group	8	6	2
	Career Development	2	1	1
	Reflective Practice	5	3	2
	Teaching Approaches	5	4	1
Education 4.0	Purpose of Using Education 4.0	5	4	1
	Advantages of Education 4.0	17	3	14
	Disadvantages of Education 4.0	9	2	7
Skillsets	Personal Qualities	9	9	-
	Employability Skills	4	3	1
	Importance of Skillsets	8	6	2
Current Practice	Current Practice	6	3	3
Total		98	58	40
Percentage		100%	59%	41%

For Part 1: Metacognitive Strategies for Graduate Employability and Learning Sustainability, the panel expressed varying degrees of acceptance and rejection for different items within each construct. The construct Showcase Self received mixed feedback, with 3 items accepted and 4 rejected. Self-improvement and Exposure constructs had positive results, with 4 and 7 items accepted, respectively. Self-study and Study Group demonstrated a favourable response, with 6 items accepted and 2 rejected. Career Development, Reflective Practice, and Teaching Approaches constructs show varying degrees of acceptance and rejection.

In the Education 4.0 category, the Purpose of Using Education 4.0 construct had a majority of items accepted, while Advantages of Education 4.0 showed only 3 accepted items and the other 14 were rejected by the expert panel. Similarly, the Disadvantages of Education 4.0 construct had a mixed response, with 2 items accepted and 7 rejected.

In the Skillsets category, the Personal Qualities construct had all items accepted, indicating a unanimous positive response by the expert panel. Employability Skills and Importance of Skillsets constructs showed mix feedback with 3 and 6 items being accepted.

Under Current Practice, there was a balanced response, with 3 items accepted and 3 rejected.

Part 1: Metacognitive Strategies for Graduate Employability and Learning Sustainability

The items for the Showcase Self-construct are illustrated in the table below:

Table 5.3 Items for the Showcase Self-Construct

	Items
SS1	Students should utilise Education 4.0 tools to build an e-portfolio since Year 1
SS2	Graduates should include success stories (i.e. achievements, awards, participations during university) in their e-portfolio
SS3	E-portfolio should be made compulsory as a part of programme assessment during university
SS4	Video resume should be taught to all students in university
SS5	Video resume acts like a pre-interview before graduates are called for a job interview
SS6	Graduates should practice answering questions before going to the job interview
SS7	Dress up during a job interview affects the chances to be employed

The results of FDM for the above items are shown in the table below, employing triangular fuzzy numbers, the defuzzification process, and expert consensus. Expert consensus decision to accept or reject an item is determined by looking at the threshold value, d-construct which should be ≤ 0.219 and $\geq 75\%$ for expert agreement (Mohd Jamil & Mat Noh, 2020; Manakandan et al., 2017). This means that even if the threshold value is ≤ 0.219 , but if the expert agreement is less than 75%, then the item

will be rejected. The items will then be ranked according to the fuzzy score after the defuzzification process (Mohd Jamil & Mat Noh, 2020; Manakandan et al., 2017).

Table 5.4 Findings of Expert Consensus on Showcase Self

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	SS1	0.2	60%	0.400	0.580	0.780	0.587	REJECTED	7
2	SS2	0.2	95%	0.490	0.680	0.890	0.687	ACCEPTED	3
3	SS3	0.2	35%	0.390	0.590	0.790	0.590	REJECTED	6
4	SS4	0.2	45%	0.420	0.610	0.810	0.613	REJECTED	4
5	SS5	0.2	45%	0.410	0.600	0.800	0.603	REJECTED	5
6	SS6	0.1	100%	0.530	0.730	0.930	0.730	ACCEPTED	1
7	SS7	0.2	90%	0.490	0.690	0.890	0.690	ACCEPTED	2

SS1, with a fuzzy score of 0.587 and a 60% expert agreement, was rejected and assigned a ranking of 7. Conversely, SS2, with a fuzzy score of 0.687 and a higher expert agreement of 95%, was accepted and ranked 3. Items SS3, SS4, and SS5 were rejected due to lower expert agreement percentages (35%, 45%, and 45%, respectively) despite specific fuzzy score values, receiving rankings of 6, 4, and 5. On the other hand, SS6 and SS7, with high expert agreement levels of 100% and 90% and fuzzy scores of 0.730 and 0.690, were accepted and ranked 1 and 2, respectively.

The following table illustrates the items under Self-Improvement construct:

Table 5.5 Items for the Self-Improvement Construct

Items	
SI1	Students submit assignments late because they lack time management skill
SI2	Students ask for assignment extension because they lack time management skill
SI3	During university, students should identify their career goals to increase employability
SI4	During university, students should identify their passion to excel in their programme
SI5	During university, students should identify their potentials to refine skills and talents

The result of FDM for the above items are illustrated in the table below:

Table 5.6 Findings of Expert Consensus on Self-Improvement

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	SI1	0.2	50%	0.400	0.600	0.800	0.600	REJECTED	4
2	SI2	0.2	75%	0.350	0.560	0.750	0.553	ACCEPTED	5
3	SI3	0.1	90%	0.440	0.640	0.840	0.640	ACCEPTED	3
4	SI4	0.2	95%	0.470	0.670	0.870	0.670	ACCEPTED	1
5	SI5	0.2	90%	0.460	0.660	0.860	0.660	ACCEPTED	2

SI2, SI3, SI4, and SI5 received expert agreement percentages of 75%, 90%, 95%, and 90%, respectively, leading to their acceptance with rankings of 5, 3, 1, and 2 based on fuzzy scores. Meanwhile, SI1, with a 50% agreement, was rejected and assigned a ranking of 4.

For the Exposure construct, the items are stated as below:

Table 5.7 Items for the Exposure Construct

Items	
EX1	Students should actively participate in extra-curricular activities to gain experiences
EX2	University should invite alumni to share their working experiences for the current students to gain exposure
EX3	University should organize industrial visit for students to gain exposure of real-life working experiences
EX4	University should have a project-based course for students to gain exposure of real-life working experiences
EX5	Lecturers should have passion in delivering knowledge to produce a highly employable graduate
EX6	Lecturers with prior experience in the industry will be able to provide the exposure to students
EX7	Lecturers should provide exposure to the work process or procedure to be done later in the workforce
EX8	Lecturers should provide additional resources for students to refer

The process results for FDM applied for the above items are tabulated below:

Table 5.8 Findings of Expert Consensus on Exposure

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	EX1	0.2	80%	0.420	0.620	0.820	0.620	ACCEPTED	7
2	EX2	0.2	100%	0.510	0.710	0.910	0.710	ACCEPTED	4
3	EX3	0.1	95%	0.540	0.740	0.940	0.740	ACCEPTED	2
4	EX4	0.1	100%	0.530	0.730	0.930	0.730	ACCEPTED	3
5	EX5	0.1	100%	0.560	0.760	0.960	0.760	ACCEPTED	1
6	EX6	0.2	90%	0.480	0.680	0.880	0.680	ACCEPTED	6
7	EX7	0.2	95%	0.490	0.690	0.890	0.690	ACCEPTED	5
8	EX8	0.3	30%	0.410	0.600	0.800	0.603	REJECTED	8

Almost all items under the Exposure construct were accepted except for EX8. The triangular fuzzy numbers and defuzzification process, with fuzzy scores ranging from 0.620 to 0.760, indicate uniform agreement among experts. Notably, items EX2, EX4, and EX5 achieved expert agreement percentages of 100%, emphasising unanimous acceptance and receiving rankings of 4, 3, and 1, respectively. Items EX3, EX6, and EX7 also showed significant expert agreements, each with a 95% or 90% agreement, and were assigned rankings of 2, 6, and 5, respectively.

The items for the Self-Study and Study Group construct are shown in the table below:

Table 5.9 Items for the Self-Study and Study Group Construct

Items	
SG1	Students should improve note-taking skills to remember what they had learned better
SG2	Annotations (short notes) help students remember what they had learned better
SG3	Students should share their knowledge and passion through social media
SG4	Sharing knowledge and passion improves students' communication skill
SG5	Sharing knowledge and passion improves students' presentation skill
SG6	Sharing knowledge and passion helps students to remember what they learned
SG7	Students should start learning digital skills like graphic designing and video editing during university
SG8	It is easier for younger people like university students to learn digital skills compared to older people

The FDM result for the above items are illustrated in the following table:

Table 5.10 Findings of Expert Consensus on Self-Study and Study Group

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	SG1	0.1	100%	0.540	0.740	0.940	0.740	ACCEPTED	1
2	SG2	0.2	95%	0.500	0.690	0.900	0.697	ACCEPTED	3
3	SG3	0.2	75%	0.340	0.530	0.730	0.533	REJECTED	8
4	SG4	0.1	100%	0.470	0.670	0.870	0.670	ACCEPTED	4
5	SG5	0.2	95%	0.470	0.670	0.870	0.670	ACCEPTED	4
6	SG6	0.2	100%	0.500	0.700	0.900	0.700	ACCEPTED	2
7	SG7	0.2	50%	0.430	0.630	0.830	0.630	REJECTED	6
8	SG8	0.2	50%	0.430	0.630	0.830	0.630	REJECTED	6

There was a mixed consensus among experts for this construct. Items SG1, SG2, SG4, SG5, and SG6 achieved high agreement percentages ranging from 95% to 100% and were accepted with fuzzy scores between 0.697 and 0.740. However, items SG3, SG7, and SG8 were rejected due to lower expert agreement percentages of 75%, 50%, and 50%, respectively, with fuzzy scores ranging from 0.533 to 0.630. Notably, SG1 received perfect consensus and earned the highest ranking, emphasizing its unanimous acceptance.

For the Career Development construct, the items given to the expert panel were as below:

Table 5.11 Items for the Career Development Construct

Items	
CD1	Training and career development programmes encourage employees to feel appreciated
CD2	Besides salary, training and career development programmes encourage employees to stay loyal to the company

The findings of FDM are tabulated below:

Table 5.12 Findings of Expert Consensus on Career Development

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	CD1	0.2	85%	0.470	0.660	0.870	0.667	ACCEPTED	1
2	CD2	0.2	45%	0.430	0.630	0.830	0.630	REJECTED	2

CD1, with an 85% expert agreement, received acceptance with a fuzzy score of 0.667, earning the highest ranking. In contrast, CD2 faced rejection due to a lower 45% agreement and a fuzzy score of 0.630, resulting in a lower ranking.

The table below shows the items in the Reflective Practice construct.

Table 5.13 Items for the Reflective Practice Construct

Items	
RP1	Reflective practice helps the industry to identify the knowledge that graduates have gained during university
RP2	Reflective practice helps the industrial managers to report to their superior
RP3	Reflective practice helps students to remember what they have learned
RP4	Reflective practice helps students to improve on skills that they are lacking
RP5	Reflective practice helps the lecturers to improve future lessons

From the first round of FDM, the findings for the above items are shown in the table on the next page:

Table 5.14 Findings of Expert Consensus on Reflective Practice

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	RP1	0.1	70%	0.420	0.620	0.820	0.620	REJECTED	4
2	RP2	0.1	70%	0.380	0.580	0.780	0.580	REJECTED	5
3	RP3	0.1	100%	0.460	0.660	0.860	0.660	ACCEPTED	2
4	RP4	0.1	95%	0.460	0.660	0.860	0.660	ACCEPTED	2
5	RP5	0.1	100%	0.480	0.680	0.880	0.680	ACCEPTED	1

It can be seen that RP3, RP4, and RP5 received unanimous acceptance with 100% expert agreement and fuzzy scores of 0.660, 0.660, and 0.680, respectively. Whereas, RP1 and RP2 were rejected with 70% expert agreement and fuzzy scores of 0.620 and 0.580. RP5 was the highest in ranking, while RP1 and RP2 received lower rankings due to their rejection.

There were 5 items in the Teaching Approaches construct as shown in this table:

Table 5.15 Items for the Teaching Approaches Construct

Items	
TA1	Lecturers should include more real-life tasks and assessments to help students remember what they had learned better
TA2	Lecturers should provide examples that are relatable to students so they will remember better
TA3	Hands-on activities are better than lecturing for students
TA4	Hands-on activities provide an exposure of what graduates will face in their career later
TA5	Hands-on activities help students to improve problem-solving skill

The FDM result for the above items are as below:

Table 5.16 Findings of Expert Consensus on Teaching Approaches

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	TA1	0.2	95%	0.500	0.700	0.900	0.700	ACCEPTED	2
2	TA2	0.2	90%	0.520	0.700	0.920	0.713	ACCEPTED	1
3	TA3	0.2	45%	0.410	0.610	0.810	0.610	REJECTED	5
4	TA4	0.2	85%	0.460	0.660	0.860	0.660	ACCEPTED	4
5	TA5	0.2	95%	0.480	0.680	0.880	0.680	ACCEPTED	3

TA2 had the highest ranking and unanimous acceptance with a 90% agreement and a fuzzy score of 0.713, followed closely by TA1, which also gained acceptance with a 95% agreement and a fuzzy score of 0.700. TA4 and TA5 received acceptance with 85% and 95% agreement, respectively, while TA3 faced rejection with a 45% expert agreement and a fuzzy score of 0.610.

Part 2: Education 4.0

In terms of the Purpose of Using Education 4.0 construct, the items given to the panel were:

Table 5.17 Items for the Purpose of Using Education 4.0 Construct

Items	
PUR1	Employers should utilise professional network sites like LinkedIn to seek new employees
PUR2	Lecturers should expose students with the knowledge of software used in the workplace
PUR3	Lecturers should expose students with Education 4.0 tools that students can use to build an e-portfolio
PUR4	Exposure to software that are used in the workplace helps graduates to work efficiently
PUR5	Graduates should utilise mobile app to build resume

The FDM results of the above items were as below:

Table 5.18 Findings of Expert Consensus on Purpose of Using Education 4.0

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	PUR1	0.2	50%	0.440	0.630	0.840	0.637	REJECTED	5
2	PUR2	0.2	85%	0.480	0.670	0.880	0.677	ACCEPTED	2
3	PUR3	0.2	90%	0.480	0.680	0.880	0.680	ACCEPTED	1
4	PUR4	0.2	90%	0.460	0.660	0.860	0.660	ACCEPTED	3
5	PUR5	0.2	80%	0.440	0.640	0.840	0.640	ACCEPTED	4

PUR3 achieved the highest ranking with a 90% expert agreement and a fuzzy score of 0.680, closely followed by PUR2, with an 85% expert agreement and a fuzzy score of 0.677. PUR4 and PUR5 also received acceptance with 90% and 80% agreement, respectively, while PUR1 faced rejection with a 50% agreement and a fuzzy score of 0.637.

The Advantages of Education 4.0 construct have the most items which are shown below:

Table 5.19 Items for the Advantages of Education 4.0 Construct

	Items
ADV1	With Education 4.0, employers are able to filter out candidates before selecting them for the job interview
ADV2	Education 4.0 may act as a fastrack for graduates to be called immediately for an interview
ADV3	Education 4.0 adds an added value for graduates to be called for a job interview
ADV4	E-portfolio helps employers to differentiate values between each candidate
ADV5	Education 4.0 tools help to solve problems at the workplace
ADV6	Education 4.0 provides exposure to graduates to be prepared with the software that they will use later in their career
ADV7	Education 4.0 encourages graduates to explore other technology tools to work better
ADV8	Creating resume using an app saves a lot of time
ADV9	During university, students should utilise Microsoft 365 because it is free
ADV10	It is convenient to use Education 4.0 tools to submit assignments which then can be included in graduates' e-portfolio
ADV11	Employers can seek employees easily using professional networking sites like LinkedIn without hiring a recruiter
ADV12	Graduates should utilise Education 4.0 tools to generate income during university
ADV13	By having an e-portfolio, students will produce the best work for their assignments
ADV14	Resume-making apps provide customisation features
ADV15	Reflective practice serves as notes for students to remember what they had learned
ADV16	Learning online saves time for students because there is no commuting to class
ADV17	There is vast knowledge available on Google which allows students to learn everything they are interested to learn

The first round of FDM was conducted and the results of the above items are tabulated below:

Table 5.20 Findings of Expert Consensus on Advantages of Education 4.0

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	ADV1	0.2	55%	0.380	0.580	0.780	0.580	REJECTED	13
2	ADV2	0.2	60%	0.360	0.570	0.760	0.563	REJECTED	14
3	ADV3	0.1	95%	0.440	0.640	0.840	0.640	ACCEPTED	1
4	ADV4	0.1	65%	0.410	0.610	0.810	0.610	REJECTED	9
5	ADV5	0.2	70%	0.340	0.540	0.740	0.540	REJECTED	16
6	ADV6	0.2	55%	0.420	0.620	0.820	0.620	REJECTED	8
7	ADV7	0.1	75%	0.430	0.630	0.830	0.630	ACCEPTED	3
8	ADV8	0.2	90%	0.440	0.640	0.840	0.640	ACCEPTED	1
9	ADV9	0.2	30%	0.430	0.630	0.830	0.630	REJECTED	4
10	ADV10	0.2	50%	0.400	0.600	0.800	0.600	REJECTED	10
11	ADV11	0.2	50%	0.380	0.580	0.780	0.580	REJECTED	11
12	ADV12	0.2	60%	0.380	0.580	0.780	0.580	REJECTED	11
13	ADV13	0.3	60%	0.340	0.540	0.740	0.540	REJECTED	16
14	ADV14	0.2	55%	0.430	0.630	0.830	0.630	REJECTED	4
15	ADV15	0.1	65%	0.430	0.630	0.830	0.630	REJECTED	4
16	ADV16	0.3	60%	0.370	0.560	0.760	0.563	REJECTED	15
17	ADV17	0.2	50%	0.420	0.620	0.820	0.620	REJECTED	7

Only three items were accepted which were ADV3, ADV8, and ADV7. They had the highest rankings and unanimous acceptance with 95%, 90%, and 75% agreement, respectively, each receiving a fuzzy score of 0.640. Meanwhile, the rest of the items

were rejected with agreement percentages ranging from 30% to 60%, accompanied by fuzzy scores of 0.540 to 0.580.

There were nine items in the Disadvantages of Education 4.0 construct which can be seen in this table:

Table 5.21 Items for the Disadvantages of Education 4.0 Construct

Items	
DIS1	Graduates will become inefficient in their work because they know they can just search everything online
DIS2	Some Education 4.0 tools that graduates learn during university will become outdated by the time they join the workforce
DIS3	There is no variety in resumes when graduates use templates from resume-making apps
DIS4	With professional networking sites like LinkedIn, employers may waste time during hiring process due to bad candidates who faked details on their profile
DIS5	Technology-dependent graduates may fail to work efficiently when there are limitations like poor internet connection
DIS6	Freedom of speech on social media is affected because employers may do background checks before hiring
DIS7	Miscommunication may occur more due to online meetings and trainings
DIS8	Students may misinterpret some information because what they learn from social media is incomplete
DIS9	With social media learning, students will get easily distracted from pop-up ads and unrelated contents

The FDM results of the above items are illustrated in the table below:

Table 5.22 Findings of Expert Consensus on Disadvantages of Education 4.0

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	DIS1	0.3	45%	0.290	0.450	0.670	0.470	REJECTED	9
2	DIS2	0.3	70%	0.330	0.510	0.720	0.520	REJECTED	8
3	DIS3	0.3	60%	0.340	0.530	0.730	0.533	REJECTED	7
4	DIS4	0.3	65%	0.350	0.540	0.740	0.543	REJECTED	6
5	DIS5	0.2	50%	0.400	0.590	0.790	0.593	REJECTED	3
6	DIS6	0.2	45%	0.380	0.570	0.770	0.573	REJECTED	5
7	DIS7	0.1	55%	0.390	0.590	0.790	0.590	REJECTED	4
8	DIS8	0.2	95%	0.470	0.670	0.870	0.670	ACCEPTED	1
9	DIS9	0.2	90%	0.470	0.670	0.870	0.670	ACCEPTED	2

Only two items were accepted which were DIS8 and DIS9 with 95% and 90% expert agreement, respectively, receiving the highest rankings with fuzzy scores of 0.670. In contrast, DIS1 until DIS7 were rejected with agreement percentages ranging from 45% to 70%, accompanied by lower fuzzy scores ranging from 0.470 to 0.593.

Below are the items in the Personal Qualities construct:

Table 5.23 Items for the Personal Qualities Construct

Items	
PQ1	Knowledgeable
PQ2	Independent
PQ3	Hardworking
PQ4	Confident
PQ5	Passionate
PQ6	Persevering (Tough)
PQ7	Ethical
PQ8	Respectful
PQ9	Quality worker

The findings from the first round of FDM for the above items are shown below:

Table 5.24 Findings of Expert Consensus on Personal Qualities

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	PQ1	0.1	95%	0.540	0.740	0.940	0.740	ACCEPTED	1
2	PQ2	0.2	95%	0.480	0.690	0.880	0.683	ACCEPTED	9
3	PQ3	0.1	95%	0.530	0.730	0.930	0.730	ACCEPTED	3
4	PQ4	0.2	95%	0.500	0.700	0.900	0.700	ACCEPTED	7
5	PQ5	0.2	95%	0.510	0.710	0.910	0.710	ACCEPTED	6
6	PQ6	0.2	90%	0.490	0.690	0.890	0.690	ACCEPTED	8
7	PQ7	0.1	95%	0.540	0.740	0.940	0.740	ACCEPTED	1
8	PQ8	0.2	90%	0.520	0.720	0.920	0.720	ACCEPTED	4
9	PQ9	0.2	95%	0.520	0.720	0.920	0.720	ACCEPTED	4

All items are unanimously accepted by the expert panel for this construct. Notably, items PQ1 and PQ7 attained the highest rankings, achieving a 95% agreement and fuzzy scores of 0.740. Additionally, PQ2, PQ3, PQ4, PQ5, PQ6, PQ8, and PQ9 received acceptance with 90% to 95% expert agreement, each securing a fuzzy score between 0.683 and 0.720.

The items for Employability Skills construct are shared in the table below:

Table 5.25 Items for the Employability Skills Construct

Items	
ES1	Communication and presentation
ES2	Critical and creative thinking
ES3	Digital
ES4	Teamwork

The table below shows the FDM findings for the above items:

Table 5.26 Findings of Expert Consensus on Employability Skills

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	ES1	0.2	95%	0.500	0.700	0.900	0.700	ACCEPTED	1
2	ES2	0.2	95%	0.470	0.660	0.870	0.667	ACCEPTED	3
3	ES3	0.1	65%	0.430	0.630	0.830	0.630	REJECTED	4
4	ES4	0.2	95%	0.500	0.700	0.900	0.700	ACCEPTED	1

ES1 and ES4 were accepted with a high 95% expert agreement, both achieving the top ranking and a fuzzy score of 0.700. Similarly, ES2 received acceptance with a 95% agreement and a slightly lower fuzzy score of 0.667, securing the third ranking. In contrast, ES3 was rejected due to a low percentage of agreement, 65%, and a fuzzy score of 0.630, i.e. the lowest ranking.

For the the Importance of Skillsets Construct, the items were as below:

Table 5.27 Items for the Importance of Skillsets Construct

	Items
IMP1	Working experience is more important than having a degree
IMP2	Problem-solving and creative thinking are not compulsory for all industries
IMP3	Being independent is important because industries provide minimal guidance
IMP4	Quality workers are important because time is money to the employers
IMP5	Graduates who are adaptable can adapt well even with low technology
IMP6	Low confidence will give a bad impression towards the company
IMP7	Good communication helps to solve problems in the workplace
IMP8	When employees are passionate, they will produce high quality work

The FDM results for the above items are shown in this table:

Table 5.28 Findings of Expert Consensus on the Importance of Skillsets

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	IMP1	0.3	50%	0.330	0.530	0.730	0.530	REJECTED	7
2	IMP2	0.3	50%	0.140	0.300	0.480	0.307	REJECTED	8
3	IMP3	0.2	90%	0.450	0.650	0.850	0.650	ACCEPTED	5
4	IMP4	0.2	100%	0.500	0.700	0.900	0.700	ACCEPTED	2
5	IMP5	0.2	95%	0.490	0.690	0.890	0.690	ACCEPTED	3
6	IMP6	0.1	95%	0.440	0.640	0.840	0.640	ACCEPTED	6
7	IMP7	0.2	95%	0.490	0.690	0.890	0.690	ACCEPTED	4
8	IMP8	0.1	100%	0.510	0.710	0.910	0.710	ACCEPTED	1

IMP8 was accepted with a perfect 100% expert agreement, securing the top ranking and a fuzzy score of 0.710. Additionally, IMP4, until IMP7 achieved acceptance with a high agreement of 95%, each earning rankings from 2 to 6 and fuzzy scores ranging from 0.640 to 0.690. IMP3 was also accepted with a 90% expert agreement, positioning it in the middle range with a ranking of 5 and a fuzzy score of 0.650. In contrast, IMP1 and IMP2 were rejected with a 50% expert agreement, with rankings of 7 and 8 and lower fuzzy scores of 0.530 and 0.307, respectively.

Part 4: Current Practice

Last but not least, the items for the Current Practice construct in the first round were as below:

Table 5.29 Items for the Current Practice Construct

Items	
CP1	Employers use professional networking sites like LinkedIn to find potential employees
CP2	E-portfolio alone is enough for employers to determine the candidates' abilities to work
CP3	Employers always call the referees to check the graduates' behaviour in the previous company/university
CP4	E-portfolio should be made compulsory for all programmes in universities
CP5	Graduates always update their resume for easier job application process later
CP6	Graduates always do a prior research on the company that called them for a job interview

Table 5.30 Findings of Expert Consensus on Current Practice

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	CP1	0.2	70%	0.330	0.530	0.730	0.530	REJECTED	5
2	CP2	0.3	75%	0.120	0.280	0.490	0.297	REJECTED	6
3	CP3	0.3	60%	0.350	0.550	0.750	0.550	REJECTED	3
4	CP4	0.2	75%	0.340	0.540	0.740	0.540	ACCEPTED	4
5	CP5	0.2	80%	0.460	0.660	0.860	0.660	ACCEPTED	1
6	CP6	0.2	80%	0.440	0.640	0.840	0.640	ACCEPTED	2

CP5 achieved unanimous acceptance with an 80% agreement, securing the top ranking and a fuzzy score of 0.660. Similarly, CP6 and CP4 received acceptance with an 80% and 75% agreement, respectively, earning rankings of 2 and 4, with fuzzy scores of 0.640 and 0.540. In contrast, CP1, CP2, and CP3 faced rejection with agreement percentages ranging from 60% to 75%, resulting in rankings of 5, 6, and 3, accompanied by lower fuzzy scores of 0.530, 0.297, and 0.550.

5.2.3 Accepted Items from Round 1 of FDM

In summary, there were 58 accepted items from the first round of FDM. The table below shows all the accepted items which have been sorted according to their ranking within each construct. The order of the ranking is based on the fuzzy score for each item. The higher the fuzzy score, the higher the ranking. The items can be seen in the following table:

Table 5.31 Accepted Items from Round 1 of FDM Sorted by Ranking

No	Part	Construct	Ranking	Fuzzy score	Item	Item No
1	Metacognitive Strategies for Graduate Employability and Learning Sustainability	Showcase Self	1	0.730	Graduates should practice answering questions before going to the job interview	SS6
2			2	0.690	Dress up during a job interview affects the chances to be employed	SS7
3			3	0.687	Graduates should include success stories (i.e. achievements, awards, participations during university) in their e-portfolio	SS2
4		Self-improvement	1	0.670	During university, students should identify their passion to excel in their programme	SI4
5			2	0.660	During university, students should identify their potentials to refine skills and talents	SI5
6			3	0.640	During university, students should identify their career goals to increase employability	SI3
7			4	0.553	Students ask for assignment extension because they lack time management skill	SI2
8		Exposure	1	0.760	Lecturers should have passion in delivering knowledge to produce a highly employable graduate	EX5
9			2	0.740	University should organize industrial visit for students to gain exposure of real-life working experiences	EX3

10			3	0.730	University should have a project-based course for students to gain exposure of real-life working experiences	EX4
11			4	0.710	University should invite alumni to share their working experiences for the current students to gain exposure	EX2
12			5	0.690	Lecturers should provide exposure to the work process or procedure to be done later in the workforce	EX7
13			6	0.680	Lecturers with prior experience in the industry will be able to provide the exposure to students	EX6
14			7	0.620	Students should actively participate in extra-curricular activities to gain experiences	EX1
15		Self-study and Study Group	1	0.740	Students should improve note-taking skill to remember what they had learned better	SG1
16			2	0.700	Sharing knowledge and passion helps students to remember what they learned	SG6
17			3	0.697	Annotations (short notes) help students remember what they had learned better	SG2
18			4	0.670	Sharing knowledge and passion improves students' communication skill	SG4
19			4	0.670	Sharing knowledge and passion improves students' presentation skill	SG5
20			6	0.533	Students should share their knowledge and passion through social media	SG3
21		Career Development	1	0.667	Training and career development programmes encourage employees to feel appreciated	CD1
22		Reflective Practice	1	0.680	Reflective practice helps the lecturers to improve future lessons	RP5
23			2	0.660	Reflective practice helps students to remember what they have learned	RP3

24			2	0.660	Reflective practice helps students to improve on skills that they are lacking	RP4
25		Teaching Approaches	1	0.713	Lecturers should provide examples that are relatable to students so they will remember better	TA2
26			2	0.700	Lecturers should include more real-life tasks and assessments to help students remember what they had learned better	TA1
27			3	0.680	Hands-on activities help students to improve problem-solving skill	TA5
28			4	0.660	Hands-on activities provide an exposure of what graduates will face in their career later	TA4
29	Education 4.0	Purpose of Using Education 4.0	1	0.680	Lecturers should expose students with Education 4.0 tools that students can use to build an e-portfolio	PUR3
30			2	0.677	Lecturers should expose students with the knowledge of software used in the workplace	PUR2
31			3	0.660	Exposure to software that are used in the workplace helps graduates to work efficiently	PUR4
32			4	0.640	Graduates should utilise mobile app to build resume	PUR5
33		Advantages of Education 4.0	1	0.640	Education 4.0 adds an added value for graduates to be called for a job interview	ADV3
34			1	0.640	Creating resume using an app saves a lot of time	ADV8
35			3	0.630	Education 4.0 encourages graduates to explore other technology tools to work better	ADV7
36		Disadvantages of Education 4.0	1	0.670	Students may misinterpret some information because what they learn from social media is incomplete	DIS8
37			1	0.670	With social media learning, students will get easily distracted from pop-up ads and unrelated contents	DIS9

38	Skillsets	Personal Qualities	1	0.740	Knowledgeable	PQ1
39			1	0.740	Ethical	PQ7
40			3	0.730	Hardworking	PQ3
41			4	0.720	Quality worker	PQ9
42			4	0.720	Respectful	PQ8
43			6	0.710	Passionate	PQ5
44			7	0.700	Confident	PQ4
45			8	0.690	Persevering (Tough)	PQ6
46			9	0.683	Independent	PQ2
47		Employability Skills	1	0.700	Communication and presentation	ES1
48			1	0.700	Teamwork	ES4
49			3	0.667	Critical and creative thinking	ES2
50		Importance of Skillsets	1	0.710	When employees are passionate, they will produce high quality work	IMP8
51			2	0.700	Quality workers are important because time is money to the employers	IMP4
52			3	0.690	Graduates who are adaptable can adapt well even with low technology	IMP5
53			3	0.690	Good communication helps to solve problems in the workplace	IMP7
54			5	0.650	Being independent is important because industries provide minimal guidance	IMP3
55			6	0.640	Low confidence will give a bad impression towards the company	IMP6
56	Current Practice	Current Practice	1	0.660	Graduates always update their resume for easier job application process later	CP5
57			2	0.640	Graduates always do a prior research on the company that called them for a job interview	CP6
58			3	0.540	E-portfolio should be made compulsory for all programmes in universities	CP4

According to Mohamad et al. (2016) researchers have to decide to remove the rejected items or conduct another round of FDM for the rejected items. Since this study intends to conduct two rounds of FDM, the Google Form was edited containing only the 40

rejected items. Then, the questionnaire was given to an expert panel for the second round of FDM. The findings for the second round of FDM are discussed in the next section.

5.3 ROUND 2 OF FUZZY DELPHI METHOD

5.3.1 Demographic Information

As discussed in Chapter Three, for the second round of the Fuzzy Delphi Method, 22 participants were selected as the expert panel. The table below shows an overview of the demographic information of the 22 experts.

Table 5.32 Demographic information of expert panel from Round 2

Demographic data	N = 22	Percentage
Gender		
Male	6	27%
Female	16	73%
Academic Qualification		
Bachelor's Degree	8	36%
Master's Degree	9	41%
PhD	5	23%
Years of experience		
6 - 10 years	11	50%
11 - 15 years	4	18%
16 - 20 years	1	5%
More than 20 years	6	27%
Field of expertise		
Higher education		
Public HEI	5	23%
Private HEI	7	32%
New employee hiring	10	45%
Work sector		
Construction	1	5%
Education	17	77%
Food and beverage	1	5%
Hospitality and tourism	1	5%
Manufacturing	2	9%
Total	22	100%

5.3.2 Round 2 FDM Process Results

Overall, there were 40 items in total for Round 2 of the Fuzzy Delphi Method. The items were categorised into 13 constructs under four different parts. Out of the 40 items, 15 were accepted, and 25 were rejected, representing a 38% acceptance rate and a 63% rejection rate by the expert panel. The table on the next page presents the summary of the FDM results for Round 2.

Table 5.33 Summary of Accepted and Rejected Items from Round 2 of FDM

Part	Construct	Items	Accepted	Rejected
Metacognitive Strategies for Graduate Employability and Learning Sustainability	Showcase Self	4	2	2
	Self- improvement	1	1	-
	Exposure	1	-	1
	Self-study and Study Group	2	1	1
	Career Development	1	-	1
	Reflective Practice	2	-	2
	Teaching Approaches	1	1	-
Education 4.0	Purpose of Using Education 4.0	1	1	-
	Advantages of Education 4.0	14	8	6
	Disadvantages of Education 4.0	7	-	7
Skillsets	Personal Qualities	NA	NA	NA
	Employability Skills	1	1	-
	Importance of Skillsets	2	-	2
Current Practice	Current Practice	3	-	3
Total		40	15	25
Percentage		100%	38%	63%

In the first part, there was 100% acceptance for all the items under the constructs Self-Improvement, and Teaching Approaches. Meanwhile, only 2 items were accepted for the Showcase Self construct. In comparison, 1 item was accepted and 1 was rejected under the Self-study and Study Group constructs. Whereas no items were accepted under Exposure, Career Development, and Reflective Practice constructs.

For the second part, 1 item under the Purpose of Using Education 4.0 construct and 8 items under the Advantages of Education 4.0 construct were accepted. In contrast, all 7 items under the Disadvantages of Education 4.0 construct were rejected by the experts.

Looking at Skillsets category, there were no items in the Personal Qualities construct because all the items were unanimously accepted in the first round of FDM. Under the Employability Skills construct, the item was accepted. In comparison, the items under Importance of Skillsets were rejected. Similarly, the items under the Current Practice construct were all rejected.

Part 1: Metacognitive Strategies for Graduate Employability and Learning Sustainability

The table below illustrates the items under Showcase Self construct for Round 2 of FDM.

Table 5.34 Items for the Showcase Self construct

Items	
SS1	Students should utilise Education 4.0 tools to build an e-portfolio since Year 1
SS3	E-portfolio should be made compulsory as a part of programme assessment during university
SS4	Video resume should be taught to all students in university
SS5	Video resume acts like a pre-interview before graduates are called for a job interview

The findings for the second round of FDM for the above items are shown in the table below:

Table 5.35 Findings of Expert Consensus on Showcase Self

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	SS1	0.2	91%	0.500	0.700	0.900	0.700	ACCEPTED	1
2	SS3	0.2	77%	0.445	0.645	0.845	0.645	ACCEPTED	2
3	SS4	0.2	45%	0.409	0.609	0.809	0.609	REJECTED	4
4	SS5	0.2	45%	0.418	0.618	0.818	0.618	REJECTED	3

Among the items evaluated, SS1 and SS3 received high expert agreement percentages of 91% and 77%, respectively. These items fulfilled the established threshold of 0.2 with fuzzy scores of 0.700 and 0.645. SS1 is ranked at number one as a result of its fuzzy score. However, SS4 and SS5, with lower expert agreement percentages of 45%, have been rejected.

The following table illustrates the item under the Self-Improvement construct during Round 2.

Table 5.36 Item for the Self-Improvement Construct

Items	
SI1	Students submit assignments late because they lack time management skill

The FDM result of this item is shared below:

Table 5.37 Findings of Expert Consensus on Self-Improvement

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	SI1	0.2	77%	0.445	0.645	0.845	0.645	ACCEPTED	1

In the Self-Improvement construct, the expert panel reached a consensus on the acceptance of the only item evaluated. SI1 had a threshold value of 0.2 and an expert agreement percentage of 77%, which indicates its acceptance.

Similarly, for the Exposure construct, there was only one item given to the experts:

Table 5.38 Item for the Exposure Construct

Items	
EX8	Lecturers should provide additional resources for students to refer

The FDM result of these items is tabulated:

Table 5.39 Findings of Expert Consensus on Exposure

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	EX8	0.2	45%	0.427	0.627	0.827	0.627	REJECTED	1

The expert panel provided a clear consensus on the rejection of the evaluated item. EX8, with an expert agreement percentage of 45%, fell below the established percentage of 75%. The rejection of EX8 indicates that the experts did not find this particular element within the Exposure construct to be significantly important to enhancing graduate employability and learning sustainability.

There were two items evaluated under the Self-study and Study Group constructs:

Table 5.40 Items for the Self-study and Study Group Construct

Items	
SG7	Students should start learning digital skills like graphic designing and video editing during university
SG8	It is easier for younger people like university students to learn digital skills compared to older people

Below is the FDM result of the two items:

Table 5.41 Findings of Expert Consensus on Self-study and Study Group

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	SG7	0.2	86%	0.455	0.655	0.855	0.655	ACCEPTED	1
2	SG8	0.3	77%	0.445	0.645	0.845	0.645	REJECTED	2

SG7 was accepted by the expert panel with a threshold value of 0.2 and 86% of expert agreement. Meanwhile, SG8 was not accepted due to its threshold value of 0.3 which is more than the cut-off value of 0.219. Hence, it is not accepted even though the percentage of expert agreement is 77%.

The following shows the item evaluated under the Career Development construct:

Table 5.42 Item for the Career Development Construct

Items	
CD2	Besides salary, training and career development programmes encourage employees to stay loyal to the company

The result of FDM for this item is illustrated on the next page.

Table 5.43 Findings of Expert Consensus on Career Development

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	CD2	0.2	59%	0.418	0.618	0.818	0.618	REJECTED	-

In the Career Development construct, the expert panel did not reach a consensus on the acceptance of the evaluated item. The expert agreement percentage for CD2 was 59%, indicating a lack of substantial consensus among the panel members regarding the inclusion of this item in the construct. This suggests that the experts did not collectively perceive it as a crucial element within the context of career development for fostering graduate employability and learning sustainability.

Two items were given to the experts under the Reflective Practice construct:

Table 5.44 Items for the Reflective Practice Construct

Items	
RP1	Reflective practice helps the industry to identify the knowledge that graduates have gained during university
RP2	Reflective practice helps the industrial managers to report to their superior

The findings of FDM for the above items can be seen below:

Table 5.45 Findings of Expert Consensus on Reflective Practice

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	RP1	0.2	50%	0.409	0.609	0.809	0.609	REJECTED	1
2	RP2	0.2	50%	0.391	0.591	0.791	0.591	REJECTED	2

Both evaluated items, RP1 and RP2, failed to achieve consensus among the expert panel and were consequently rejected. Though their threshold values were 0.2, the expert agreement percentages for RP1 and RP2 were both 50%, indicating a lack of agreement among the experts.

The table below illustrates the items evaluated under the Teaching Approaches construct for the second round of FDM.

Table 5.46 Item for the Teaching Approaches Construct

Items	
TA3	Hands-on activities are better than lecturing for students

The FDM result of the item is shared below:

Table 5.47 Findings of Expert Consensus on Teaching Approaches

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	TA3	0.2	86%	0.445	0.645	0.845	0.645	ACCEPTED	1

In the Teaching Approaches construct, the evaluated item TA3 achieved consensus among the expert panel and was accepted. The threshold value was 0.2, and the expert agreement percentage was 86%, indicating a high level of consensus among the experts regarding its inclusion in the Teaching Approaches construct. The acceptance of TA3 suggests that the expert panel collectively views hands-on activities are better for students compared to lecturing.

Part 2: Education 4.0

For the Purpose of Using Education 4.0 construct, the item evaluated is shared in this table:

Table 5.48 Item for the Purpose of Using Education 4.0 Construct

Items	
PUR1	Employers should utilise professional network sites like LinkedIn to seek new employees

Below is the FDM result of the said item:

Table 5.49 Findings of Expert Consensus on Purpose of Using Education 4.0

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	PUR1	0.2	95%	0.482	0.673	0.873	0.676	ACCEPTED	1

For this construct, item PUR1 demonstrated a high level of agreement among the expert panel and was accepted. The threshold value was 0.2, and its expert agreement

percentage was 95%. This result suggests that the panel agrees that employers should utilise professional network sites like LinkedIn to seek new employees.

14 items were evaluated in the second round under the Advantages of Education 4.0 construct. The items are illustrated in the table below:

Table 5.50 Items for the Advantages of Education 4.0 Construct

Items	
ADV1	With Education 4.0, employers are able to filter out candidates before selecting them for the job interview
ADV2	Education 4.0 may act as a fastrack for graduates to be called immediately for an interview
ADV4	E-portfolio helps employers to differentiate values between each candidate
ADV5	Education 4.0 tools help to solve problems at the workplace
ADV6	Education 4.0 provides exposure to graduates to be prepared with the software that they will use later in their career
ADV9	During university, students should utilise Microsoft 365 because it is free
ADV10	It is convenient to use Education 4.0 tools to submit assignments which then can be included in graduates' e-portfolio
ADV11	Employers can seek employees easily using professional networking sites like LinkedIn without hiring a recruiter
ADV12	Graduates should utilise Education 4.0 tools to generate income during university
ADV13	By having an e-portfolio, students will produce the best work for their assignments
ADV14	Resume-making apps provide customisation features
ADV15	Reflective practice serves as notes for students to remember what they had learned
ADV16	Learning online saves time for students because there is no commuting to class
ADV17	There is vast knowledge available on Google which allows students to learn everything they are interested to learn

The FDM results of the items are shown in the following table:

Table 5.51 Findings of Expert Consensus on Advantages of Education 4.0

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	ADV1	0.2	36%	0.400	0.600	0.800	0.600	REJECTED	12
2	ADV2	0.2	41%	0.382	0.582	0.782	0.582	REJECTED	14
3	ADV4	0.2	41%	0.427	0.618	0.818	0.621	REJECTED	9
4	ADV5	0.2	32%	0.409	0.609	0.809	0.609	REJECTED	11
5	ADV6	0.2	82%	0.455	0.655	0.855	0.655	ACCEPTED	5
6	ADV9	0.2	86%	0.455	0.655	0.855	0.655	ACCEPTED	5
7	ADV10	0.2	91%	0.482	0.682	0.882	0.682	ACCEPTED	2
8	ADV11	0.2	86%	0.473	0.673	0.873	0.673	ACCEPTED	3
9	ADV12	0.3	27%	0.400	0.600	0.800	0.600	REJECTED	12
10	ADV13	0.2	45%	0.418	0.618	0.818	0.618	REJECTED	10
11	ADV14	0.2	91%	0.445	0.645	0.845	0.645	ACCEPTED	7
12	ADV15	0.2	95%	0.473	0.673	0.873	0.673	ACCEPTED	3
13	ADV16	0.2	91%	0.445	0.645	0.845	0.645	ACCEPTED	7
14	ADV17	0.2	95%	0.491	0.691	0.891	0.691	ACCEPTED	1

Out of the 14 items assessed, six were rejected due to low percentages that fell below 75%. The expert agreement percentages were ranging from 27% to 45%. Notably, ADV6, ADV9, ADV10, ADV11, ADV14, ADV15, ADV16, and ADV17 were all accepted, with high percentages of expert agreement ranging from 82% to 95%. ADV17 had the highest Fuzzy score of 0.691 resulting in its ranking as number 1, followed by ADV10, ADV11 and ADV15, as number 2 and 3 in ranking.

There were seven items evaluated under construct Disadvantages of Education 4.0:

Table 5.52 Items for the Disadvantages of Education 4.0 Construct

Items	
DIS1	Graduates will become inefficient in their work because they know they can just search everything online
DIS2	Some Education 4.0 tools that graduates learn during university will become outdated by the time they join the workforce
DIS3	There is no variety in resumes when graduates use templates from resume-making apps
DIS4	With professional networking sites like LinkedIn, employers may waste time during hiring process due to bad candidates who faked details on their profile
DIS5	Technology-dependent graduates may fail to work efficiently when there are limitations like poor internet connection
DIS6	Freedom of speech on social media is affected because employers may do background checks before hiring
DIS7	Miscommunication may occur more due to online meetings and trainings

The following table shows the FDM result of the above items:

Table 5.53 Findings of Expert Consensus on Disadvantages of Education 4.0

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	DIS1	0.3	55%	0.300	0.473	0.673	0.482	REJECTED	6
2	DIS2	0.3	59%	0.355	0.536	0.755	0.548	REJECTED	4
3	DIS3	0.3	41%	0.273	0.464	0.664	0.467	REJECTED	7
4	DIS4	0.3	64%	0.364	0.555	0.755	0.558	REJECTED	3
5	DIS5	0.2	45%	0.391	0.591	0.791	0.591	REJECTED	1
6	DIS6	0.2	64%	0.364	0.564	0.764	0.564	REJECTED	2
7	DIS7	0.3	64%	0.336	0.518	0.718	0.524	REJECTED	5

All of these items were rejected due to low percentages of expert agreement which were less than 75%. The percentages ranged from 41% to 64%. The majority of the threshold values were 0.3 which was more than the cut-off value of 0.219.

Part 3: Skillsets

The following table illustrates the evaluated item under the Employability Skills construct:

Table 5.54 Item for the Employability Skills Construct

Items	
ES3	Digital

The table below shows its FDM result:

Table 5.55 Findings of Expert Consensus on Employability Skills

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	ES3	0.2	86%	0.436	0.636	0.836	0.636	ACCEPTED	1

For this round, item ES3, Digital skill, was accepted by the experts as one of the most important Employability Skills for graduates to have. It had a high level of expert agreement of 86% with a threshold value of 0.2.

For the Importance of Skillsets construct, the items evaluated were as follows:

Table 5.56 Items for the Importance of Skillsets Construct

Items	
IMP1	Working experience is more important than having a degree
IMP2	Problem-solving and creative thinking are not compulsory for all industries

The results of FDM for these items are displayed below:

Table 5.57 Findings of Expert Consensus on the Importance of Skillsets

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	IMP1	0.3	45%	0.264	0.464	0.664	0.464	REJECTED	1
2	IMP2	0.3	59%	0.145	0.309	0.509	0.321	REJECTED	2

Both items IMP1 and IMP2 had threshold values of 0.3 which were less than 0.219. There was also a low percentage of expert agreement (45% and 59%, respectively). Due to the failure to fulfil the prerequisites of FDM, these two items were both rejected.

Part 4: Current Practice

Three items were given to the experts for the Current Practice construct:

Table 5.58 Items for the Current Practice Construct

Items	
CP1	Employers use professional networking sites like LinkedIn to find potential employees
CP2	E-portfolio alone is enough for employers to determine the candidates' abilities to work
CP3	Employers always call the referees to check the graduates' behaviour in the previous company/university

The results of the second round of FDM are shown in the following table:

Table 5.59 Findings of Expert Consensus on Current Practice

No	Item	Triangular fuzzy numbers		Defuzzification process				Expert consensus	Ranking
		Threshold, d	% Expert agreement	m1	m2	m3	Fuzzy score (A)		
1	CP1	0.2	64%	0.364	0.564	0.764	0.564	REJECTED	1
2	CP2	0.2	68%	0.173	0.355	0.555	0.361	REJECTED	3
3	CP3	0.3	55%	0.282	0.464	0.664	0.470	REJECTED	2

In the Current Practice construct, all three items failed to meet the expert agreement of 75%. The percentages of expert agreement for CP1, CP2 and CP3 were 64%, 68% and 55% respectively. In terms of threshold value, CP3 exceeded the cut-off value of 0.219. CP1 and CP2 had threshold values of 0.2 but were still rejected due to a low percentage of expert agreement.

5.3.3 Accepted Items from Round 2

In summary, there were 15 accepted items from the second round of FDM. The table below shows all the accepted items which have been sorted according to their ranking within each construct. The order of the ranking is based on the fuzzy score for each item. The higher the fuzzy score, the higher the ranking. The items can be seen in the following table:

Table 5.60 Accepted Items from Round 2 of FDM Sorted by Ranking

No	Part	Construct	Ranking	Fuzzy score	Item	Item No
1	Metacognitive Strategies for Graduate Employability and Learning Sustainability	Showcase Self	1	0.700	Students should utilise Education 4.0 tools to build an e-portfolio since Year 1	SS1
2			2	0.645	E-portfolio should be made compulsory as a part of programme assessment during university	SS3
3		Self-improvement	1	0.645	Students submit assignments late because they lack time management skill	SI1
4		Self-study and Study Group	1	0.655	Students should start learning digital skills like graphic designing and video editing during university	SG7
5		Teaching Approaches	1	0.645	Hands-on activities are better than lecturing for students	TA3
6	Education 4.0	Purpose of Using Education 4.0	1	0.676	Employers should utilise professional network sites like LinkedIn to seek new employees	PUR1
7		Advantages of Education 4.0	1	0.691	There is vast knowledge available on Google which allows students to learn everything they are interested to learn	ADV17
8			2	0.655	During university, students should utilise Microsoft 365 because it is free	ADV9

9			3	0.673	Reflective practice serves as notes for students to remember what they had learned	ADV15
10			3	0.673	Employers can seek employees easily using professional networking sites like LinkedIn without hiring a recruiter	ADV11
11			5	0.655	During university, students should utilise Microsoft 365 because it is free	ADV9
12			5	0.655	Education 4.0 provides exposure to graduates to be prepared with the software that they will use later in their career	ADV6
13			7	0.645	Resume-making apps provide customisation features	ADV14
14			7	0.645	Learning online saves time for students because there is no commuting to class	ADV16
15	Skillsets	Employability Skills	1	0.636	Digital	ES3

5.4 OVERALL ACCEPTED ITEMS FROM ROUNDS 1 AND 2 OF FDM

In total, there are 73 accepted items from both Round 1 and Round 2 of FDM. Constructs with a 100% acceptance rate include Self-improvement, Teaching Approaches, Purpose of Using Education 4.0, Employability Skills, and Personal Qualities. These findings indicate overall expert agreement on the significance of these constructs in the context of the study. The summary of items from Round 1 and Round 2 FDM can be seen in the following table.

Table 5.61 Summary of Accepted Items from Round 1 and Round 2 of FDM

Part	Construct	Items before FDM	Accepted Items		Total	Percentage
			Round 1	Round 2		
Metacognitive Strategies for Graduate Employability and Learning Sustainability	Showcase Self	7	3	2	5	71%
	Self- improvement	5	4	1	5	100%
	Exposure	8	7	-	7	88%
	Self-study and Study Group	8	6	1	7	88%
	Career Development	2	1	-	1	50%
	Reflective Practice	5	3	-	3	60%
	Teaching Approaches	5	4	1	5	100%
Education 4.0	Purpose of Using Education 4.0	5	4	1	5	100%
	Advantages of Education 4.0	17	3	8	11	65%
	Disadvantages of Education 4.0	9	2	-	2	22%
Skillsets	Personal Qualities	9	9	NA	9	100%
	Employability Skills	4	3	1	4	100%
	Importance of Skillsets	8	6	-	6	75%
Current Practice	Current Practice	6	3	-	3	50%
Total		98	58	15	73	

After the second round of the Fuzzy Delphi Method, the researcher removed the rejected items from this round. Then, the accepted items from Round 1 and Round 2 are tabulated. These items are sorted according to the ranking within each construct. The order of the ranking is based on the fuzzy score calculated in Excel during FDM analysis. Higher fuzzy scores will rank on top compared to the lower fuzzy scores. The items can be seen in the following table:

Table 5.62 Accepted Items from Round 1 and Round 2 of FDM Sorted by Ranking

No	Part	Construct	Ranking	Fuzzy score	Item	Item No
1	Metacognitive Strategies for Graduate Employability and Learning Sustainability	Showcase Self	1	0.730	Graduates should practice answering questions before going to the job interview	SS6
2			2	0.700	Students should utilise Education 4.0 tools to build an e-portfolio since Year 1	SS1
3			3	0.690	Dress up during a job interview affects the chances to be employed	SS7
4			4	0.687	Graduates should include success stories (i.e. achievements, awards, participations during university) in their e-portfolio	SS2
5			5	0.645	E-portfolio should be made compulsory as a part of programme assessment during university	SS3
6		Self-improvement	1	0.670	Students submit assignments late because they lack time management skill	SI4
7			2	0.660	During university, students should identify their passion to excel in their programme	SI5
8			3	0.645	During university, students should identify their potentials to refine skills and talents	SI1
9			4	0.640	Students submit assignments late because they lack time management skill	SI3
10			5	0.553	During university, students should identify their career goals to increase employability	SI2
11		Exposure	1	0.760	Lecturers should have passion in delivering knowledge to produce a highly employable graduate	EX5

12	Metacognitive Strategies for Graduate Employability and Learning Sustainability		2	0.740	University should organize industrial visit for students to gain exposure of real-life working experiences	EX3
13			3	0.730	University should have a project-based course for students to gain exposure of real-life working experiences	EX4
14			4	0.710	University should invite alumni to share their working experiences for the current students to gain exposure	EX2
15			5	0.690	Lecturers should provide exposure to the work process or procedure to be done later in the workforce	EX7
16			6	0.680	Lecturers with prior experience in the industry will be able to provide the exposure to students	EX6
17			7	0.620	Students should actively participate in extra-curricular activities to gain experiences	EX1
18		Self-study and Study Group	1	0.740	Students should improve note-taking skill to remember what they had learned better	SG1
19			2	0.700	Sharing knowledge and passion helps students to remember what they learned	SG6
20			3	0.697	Annotations (short notes) help students remember what they had learned better	SG2
21			4	0.670	Sharing knowledge and passion improves students' communication skill	SG4
22			4	0.670	Sharing knowledge and passion improves students' presentation skill	SG5

23			6	0.655	Students should start learning digital skills like graphic designing and video editing during university	SG7
24			7	0.533	Students should share their knowledge and passion through social media	SG3
25		Career Development	1	0.667	Training and career development programmes encourage employees to feel appreciated	CD1
26		Reflective Practice	2	0.680	Reflective practice helps the lecturers to improve future lessons R	RP5
27			2	0.660	Reflective practice helps students to remember what they have learned	RP3
28			3	0.660	Reflective practice helps students to improve on skills that they are lacking	RP4
29		Teaching Approaches	1	0.713	Lecturers should provide examples that are relatable to students so they will remember better	TA2
30			2	0.700	Lecturers should include more real-life tasks and assessments to help students remember what they had learned better	TA1
31			3	0.680	Hands-on activities help students to improve problem-solving skill	TA5
32			4	0.660	Hands-on activities provide an exposure of what graduates will face in their career later	TA4
33			5	0.645	Hands-on activities are better than lecturing for students	TA3
34		Purpose of Using Education 4.0	1	0.680	Lecturers should expose students with Education 4.0 tools that students can use to build an e-portfolio	PUR3

35	Education 4.0		2	0.677	Lecturers should expose students with the knowledge of software used in the workplace	PUR2
36			3	0.676	Employers should utilise professional network sites like LinkedIn to seek new employees	PUR1
37			4	0.660	Exposure to software that are used in the workplace helps graduates to work efficiently	PUR4
38			5	0.640	Graduates should utilise mobile app to build resume	PUR5
39	Advantages of Education 4.0		1	0.691	There is vast knowledge available on Google which allows students to learn everything they are interested to learn	ADV3
40			2	0.682	It is convenient to use Education 4.0 tools to submit assignments which then can be included in graduates' e-portfolio	ADV6
41			3	0.673	Employers can seek employees easily using professional networking sites like LinkedIn without hiring a recruiter	ADV7
42			3	0.673	Reflective practice serves as notes for students to remember what they had learned	ADV8
43			5	0.655	Education 4.0 provides exposure to graduates to be prepared with the software that they will use later in their career	ADV9
44			5	0.655	During university, students should utilise Microsoft 365 because it is free	ADV10
45			7	0.645	Resume-making apps provide customisation features	ADV11

46			7	0.645	Learning online saves time for students because there is no commuting to class	ADV14
47			9	0.640	Education 4.0 adds an added value for graduates to be called for a job interview	ADV15
48			9	0.640	Creating resume using an app saves a lot of time	ADV16
49			11	0.630	Education 4.0 encourages graduates to explore other technology tools to work better	ADV17
50		Disadvantages of Education 4.0	1	0.670	Students may misinterpret some information because what they learn from social media is incomplete	DIS8
51			1	0.670	With social media learning, students will get easily distracted from pop-up ads and unrelated contents	DIS9
52	Skillsets	Personal Qualities	1	0.740	Knowledgeable	PQ1
53			1	0.740	Ethical	PQ7
54			3	0.730	Hardworking	PQ3
55			4	0.720	Respectful	PQ8
56			4	0.720	Quality worker	PQ9
57			6	0.710	Passionate	PQ5
58			7	0.700	Confident	PQ4
59			8	0.690	Persevering (Tough)	PQ6
60			9	0.683	Independent	PQ2
61		Employability Skills	1	0.700	Communication and presentation	ES1
62			1	0.700	Teamwork	ES4
63			2	0.667	Digital	ES2
64			3	0.636	Critical and creative thinking	ES3
65		Importance of Skillsets	1	0.710	When employees are passionate, they will produce high quality work	IMP8
66			2	0.700	Quality workers are important because time is money to the employers	IMP4

67			3	0.690	Graduates who are adaptable can adapt well even with low technology	IMP5
68			3	0.690	Good communication helps to solve problems in the workplace	IMP7
69			5	0.650	Being independent is important because industries provide minimal guidance	IMP3
70			6	0.640	Low confidence will give a bad impression towards the company	IMP6
71	Current Practice	Current Practice	1	0.660	Graduates always update their resume for easier job application process later	CP5
72			2	0.640	Graduates always do a prior research on the company that called them for a job interview	CP6
73			3	0.540	E-portfolio should be made compulsory for all programmes in universities	CP4

5.5 ATTRIBUTES OF A VALID INSTRUMENT TO EVALUATE THE EFFECTIVENESS OF A METACOGNITIVE STRATEGY FRAMEWORK FOR LEARNING SUSTAINABILITY AND GRADUATE EMPLOYABILITY THROUGH EDUCATION 4.0

The following table shows the attributes of the final instrument validated by the experts from both rounds of FDM.

Table 5.63 Final Validated Instrument

Effectiveness of Metacognitive Strategies for Learning sustainability and Employability through Education 4.0

Part	Domain	Definition/Instruction	No	Tested Item
1. Metacognitive Strategies for Graduate Employability and Learning Sustainability	SS	Showcase self is a strategy that graduates use to showcase themselves to be more visible towards employers through resume, portfolio/e-portfolio, preparation before job interview and self-presentation during job interview.	1	Graduates should practice answering questions before going to the job interview
			2	Students should utilise Education 4.0 tools to build an e-portfolio since Year 1
			3	Dress up during a job interview affects the chances to be employed
			4	Graduates should include success stories (i.e. achievements, awards, participations during university) in their e-portfolio
			5	E-portfolio should be made compulsory as a part of programme assessment during university
	SI	Self-improvement is a strategy that graduates use to improve themselves to increase the chance of employment through improving time management and stress management skills as well as identifying goals, passions and potentials.	6	Students submit assignments late because they lack time management skill
			7	During university, students should identify their passion to excel in their programme
			8	During university, students should identify their potentials to refine skills and talents
			9	Students submit assignments late because they lack time management skill
			10	During university, students should identify their career goals to increase employability
	EX	Exposure is a strategy used by graduates/students, lecturers, universities and industries to help students gain experience related to career; through part-	11	Lecturers should have passion in delivering knowledge to produce a highly employable graduate
			12	University should organize industrial visit for students to gain exposure of real-life working experiences

	time job, participation, courses offered in university, engagement with alumni, university-industry engagement, and guidance and resources.	13	University should have a project-based course for students to gain exposure of real-life working experiences
		14	University should invite alumni to share their working experiences for the current students to gain exposure
		15	Lecturers should provide exposure to the work process or procedure to be done later in the workforce
		16	Lecturers with prior experience in the industry will be able to provide the exposure to students
		17	Students should actively participate in extra-curricular activities to gain experiences
SG	Self-study and Study Group are strategies that graduates use during self-learning and individual revision or together with friends in study groups through finding the right circle, reading, note-taking, annotations (remarks on any topic/paragraph being studied) and sharing of knowledge/passion.	18	Students should improve note-taking skill to remember what they had learned better
		19	Sharing knowledge and passion helps students to remember what they learned
		20	Annotations (short notes) help students remember what they had learned better
		21	Sharing knowledge and passion improves students' communication skill
		22	Sharing knowledge and passion improves students' presentation skill
		23	Students should start learning digital skills like graphic designing and video editing during university
		24	Students should share their knowledge and passion through social media
CD	Career Development and Training are strategies that graduates use to upskill themselves or trainings that employers provide to help employees upskill themselves with new knowledge and technology to match the current industrial needs.	25	Training and career development programmes encourage employees to feel appreciated

2. Education 4.0	RP	Reflective practice is a strategy that graduates and lecturers use to help students sustain their learning, remember what they have learned and apply the knowledge in their career.	26	Reflective practice helps the lecturers to improve future lessons R
			27	Reflective practice helps students to remember what they have learned
			28	Reflective practice helps students to improve on skills that they are lacking
	TA	Teaching approaches are a strategy that lecturers use to help students sustain their learning and become highly employable when they graduate later.	29	Lecturers should provide examples that are relatable to students so they will remember better
			30	Lecturers should include more real-life tasks and assessments to help students remember what they had learned better
			31	Hands-on activities help students to improve problem-solving skill
			32	Hands-on activities provide an exposure of what graduates will face in their career later
			33	Hands-on activities are better than lecturing for students
	PUR	How Education 4.0 tools are used by graduates, lecturers and employers to help graduate employability and learning sustainability.	34	Lecturers should expose students with Education 4.0 tools that students can use to build an e-portfolio
			35	Lecturers should expose students with the knowledge of software used in the workplace
			36	Employers should utilise professional network sites like LinkedIn to seek new employees
			37	Exposure to software that are used in the workplace helps graduates to work efficiently
			38	Graduates should utilise mobile app to build resume
	ADV	How Education 4.0 tools benefit graduates, lecturers and employers in terms of graduate employability and learning sustainability.	39	There is vast knowledge available on Google which allows students to learn everything they are interested to learn
			40	It is convenient to use Education 4.0 tools to submit assignments which then can be included in graduates' e-portfolio
			41	Employers can seek employees easily using professional networking sites like LinkedIn without hiring a recruiter

			42	Reflective practice serves as notes for students to remember what they had learned
			43	Education 4.0 provides exposure to graduates to be prepared with the software that they will use later in their career
			44	During university, students should utilise Microsoft 365 because it is free
			45	Resume-making apps provide customisation features
			46	Learning online saves time for students because there is no commuting to class
			47	Education 4.0 adds an added value for graduates to be called for a job interview
			48	Creating resume using an app saves a lot of time
			49	Education 4.0 encourages graduates to explore other technology tools to work better
	DIS	The drawbacks of using Education 4.0 tools affect graduates, lecturers and employers in terms of graduate employability and learning sustainability.	50	Students may misinterpret some information because what they learn from social media is incomplete
			51	With social media learning, students will get easily distracted from pop-up ads and unrelated contents
3. Skillsets	PQ	Personal Qualities that make up the skillsets of a graduate. Listed below are 9 Personal Qualities that make up the skillsets of a graduate. Please rank each quality with 1 as the most important through 5 as the least important for graduates to have to be highly employable.	52	Knowledgeable
			53	Ethical
			54	Hardworking
			55	Respectful
			56	Quality worker
			57	Passionate
			58	Confident
			59	Persevering (Tough)
			60	Independent

	ES	Employability Skills that make up the skillsets of a graduate.	61	Communication and presentation
			62	Teamwork
			63	Digital
		Listed below are 4 Employability Skills that make up the skillsets of a graduate. Please rank each skill with 1 as the most important through 5 as the least important for graduates to have to be highly employable.	64	Critical and creative thinking
	IMP	Importance of Skillsets describes why the skillset is important or not important according to graduates, lecturers and industrial experts.	65	When employees are passionate, they will produce high quality work
			66	Quality workers are important because time is money to the employers
			67	Graduates who are adaptable can adapt well even with low technology
			68	Good communication helps to solve problems in the workplace
			69	Being independent is important because industries provide minimal guidance
			70	Low confidence will give a bad impression towards the company
4. Current Practice	CP	Current practices at three levels: industry, university and alumni	71	Graduates always update their resume for easier job application process later
			72	Graduates always do a prior research on the company that called them for a job interview
			73	E-portfolio should be made compulsory for all programmes in universities

5.6 DEVELOPMENT OF METACOGNITIVE STRATEGIES FRAMEWORK FOR GRADUATE EMPLOYABILITY AND LEARNING SUSTAINABILITY THROUGH EDUCATION 4.0

The attributes of the instrument have been presented to and validated by the experts during Round 1 and Round 2 of Fuzzy Delphi Method. With these attributes, the researcher has developed a framework of Metacognitive Strategies for Graduate Employability and Learning Sustainability through Education 4.0. The attributes to evaluate the effectiveness of a metacognitive strategy framework for learning sustainability and graduate employability through Education 4.0 can be seen in the following figure:



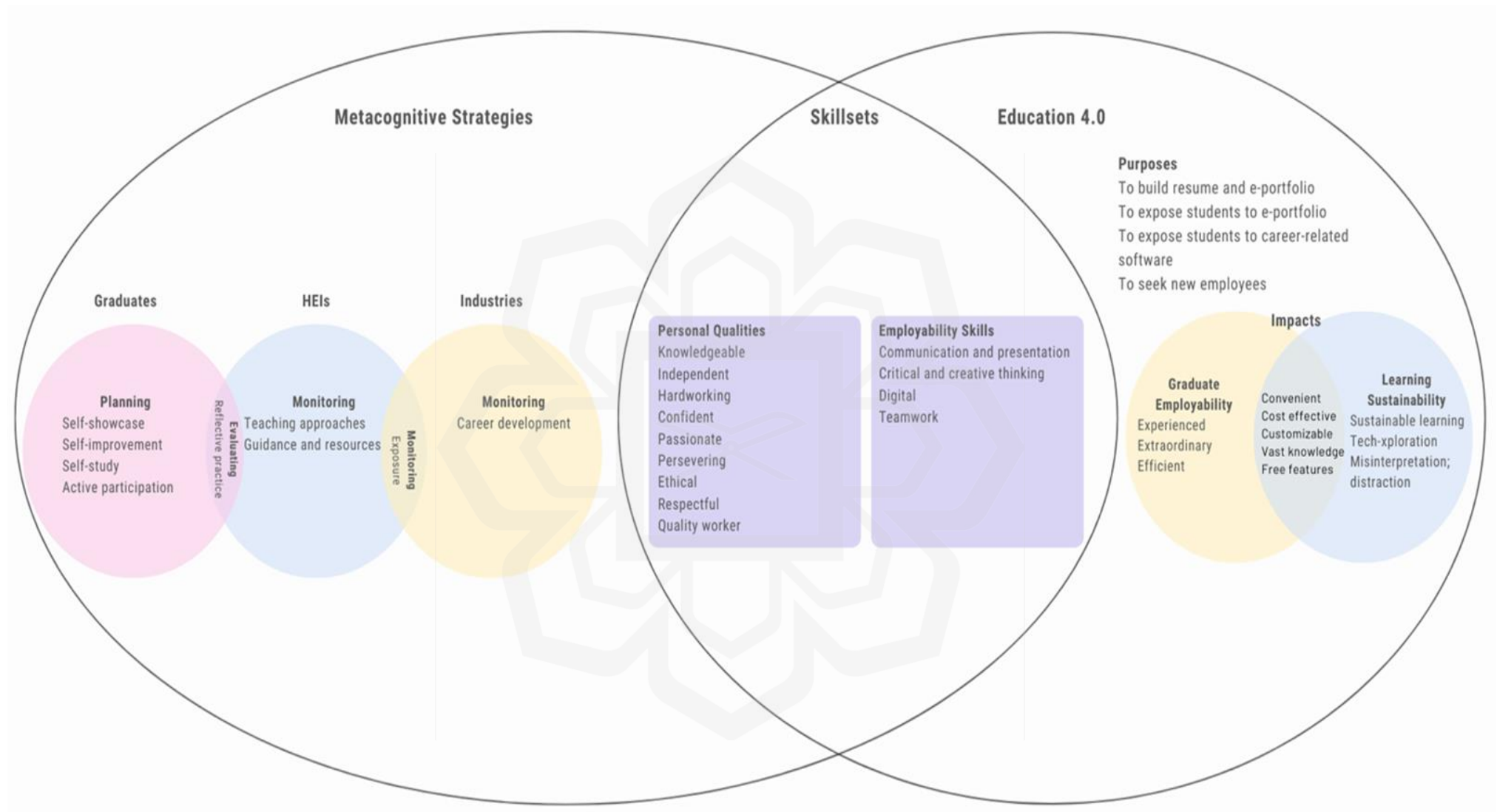


Figure 5.1 Metacognitive Strategies Framework for Graduate Employability and Learning Sustainability through Education 4.0

The framework illustrates a comprehensive approach to enhancing graduate employability and learning sustainability by integrating Brown's (1987) Regulation of Cognition and Education 4.0. The circle on the left encompasses seven metacognitive strategies which are further divided into three steps of Regulation of Cognition which are 1. Planning, 2. Monitoring, and 3. Evaluating. Under Planning, the researcher includes four metacognitive strategies that are mainly applied by the graduates such as Self-showcase, Self-improvement, Self-study, and Active Participation.

As for Monitoring, the metacognitive strategies are mainly applied by HEIs and Industries. The metacognitive strategies include Teaching Approaches and Guidance and Resources employed in HEIs. Whereas the industries provide Career Development opportunities to enhance graduate employability and learning sustainability. HEIs and industries collaborate to provide exposure to students/graduates to enhance their employability.

The third step in Brown's Regulation of Cognition is Evaluating. The metacognitive strategy under this step is Reflective Practice which is practiced among graduates and HEIs. This practice helps graduates to sustain learning which helps in enhanced employability.

The circle on the right named Education 4.0 overlaps with the left circle of Metacognitive Strategies, showing both constructs should be integrated to produce graduates who will possess the skillsets that can be seen in the overlapped part of the circles.

Based on the findings, Education 4.0 tools are used for four purposes which are: 1. To build a resume and e-portfolio, 2. To expose students to e-portfolios, 3. To expose students to career-related software, and 4. To seek employees. Incorporating Education 4.0 tools will help graduates to become experienced, extraordinary and efficient which will enhance their employability. Education 4.0 also sustains their learning and helps them to explore technology (tech exploration). However, the downsides of Education 4.0 tools which might affect learning sustainability are misinterpretation and distraction. There are five overlapping impacts of Education 4.0 that both enhance graduate employability and learning sustainability which are: 1.

Convenient, 2. Cost effective, 3. Customisable, 4. Vast knowledge, and 5. Free features.

With the successful integration of both metacognitive strategies and Education 4.0 highlighted earlier, it is hoped that this framework would produce graduates who are knowledgeable, ethical, hardworking, respectful, quality workers, passionate, confident, persevering (tough), and independent. Besides that, the integration will help graduates to develop employability skills like communication and presentation skills, teamworking skills, digital skills, and critical and creative thinking skills. These skill sets will be an added value for the graduates to become more visible to the employers which will enhance their employability in the future. In order to achieve this goal, graduates, HEIs and industries play crucial roles in fostering this integration to ensure graduates are equipped with the skillsets demanded by the contemporary job market.

Both the instrument and framework developed from this study would benefit stakeholders namely students, institutions and graduates to enhance employability and learning sustainability through the integration of metacognitive strategies and Education 4.0. Furthermore, the instrument could be used to help future researchers to evaluate the effectiveness of the framework applied.

5.7 SUMMARY

This chapter discussed the findings of Phase 3 through quantitative data collection and analysis done using the Fuzzy Delphi Method. Two rounds of Fuzzy Delphi Method were conducted and this chapter discusses the findings for Round 1 and Round 2 in detail. Lastly, this chapter discussed the attributes to evaluate the effectiveness of a metacognitive strategy framework for learning sustainability and graduate employability through education 4.0. This chapter also explained the framework and how the integration of metacognitive strategies and Education 4.0 affect graduate employability and learning sustainability.

CHAPTER SIX

DISCUSSION, RECOMMENDATION AND CONCLUSION

6.1 INTRODUCTION

This chapter discusses the findings of the study which provide the answers to the research questions. As stated earlier, this study was conducted to explore the required metacognitive strategies to enhance learners' employability and learning sustainability through Education 4.0 from the perspective of experts, lecturers and alumni. Furthermore, this study also investigated how Education 4.0 enhances learners' learning sustainability and employability from the perspective of experts, lecturers and alumni. Lastly, the researcher proposed a valid instrument to evaluate the effectiveness of metacognitive framework for learning sustainability towards employability through Education 4.0. Apart from the discussion, the researcher suggests a few recommendations for students, higher education institutions (HEIs) and industries to graduate employability and learning sustainability. Recommendations for future research are discussed in this chapter at the end.

6.2 DISCUSSION OF FINDINGS

The findings of this study are discussed according to the research questions: 1. What are the required metacognitive strategies to enhance learners' employability and learning sustainability through Education 4.0 from the perspective of experts, lecturers and alumni? 2. How does Education 4.0 enhance learners' learning sustainability and employability from the perspective of experts, lecturers and alumni? and 3. What are the attributes of a valid instrument to evaluate the effectiveness of a metacognitive strategy framework for learning sustainability and graduate employability through Education 4.0? Qualitative data collection through semi-structured interviews was conducted to find the answers to Research Questions 1 and 2. Whereas, Research Question 3 is answered through two rounds of quantitative survey and Fuzzy Delphi Method (FDM).

6.2.1 Research Question 1

What are the required metacognitive strategies to enhance learners' employability and learning sustainability through Education 4.0 from the perspective of experts, lecturers and alumni?

Nine participants were interviewed to find out the metacognitive strategies used to enhance graduate employability and learning sustainability through Education 4.0. The interviews found seven strategies which are: 1. Showcase self, 2. Self-improvement, 3. Exposure, 4. Self-study and study group, 5. Career development and training, 6. Reflection of learning, and 7. Teaching approaches.

These findings are related to the Regulation of Cognition which is a component of Brown's (1987) Model of Metacognition. As discussed in Chapter 2, Brown (1987) introduces the Model of Metacognition which divides metacognition into two components: 1. Knowledge of Cognition and 2. Regulation of Cognition. Knowledge of Cognition means the knowledge that learners have regarding their cognitive process. Whereas, Regulation of Cognition consists of "metacognitive activities that help regulate and control one's thinking and learning" (Nordin, 2016, p. 143). In other words, this regulation is also known as 'metacognitive strategies' which is one of the main variables in this study. This component is divided into three categories which are planning, monitoring and evaluating.

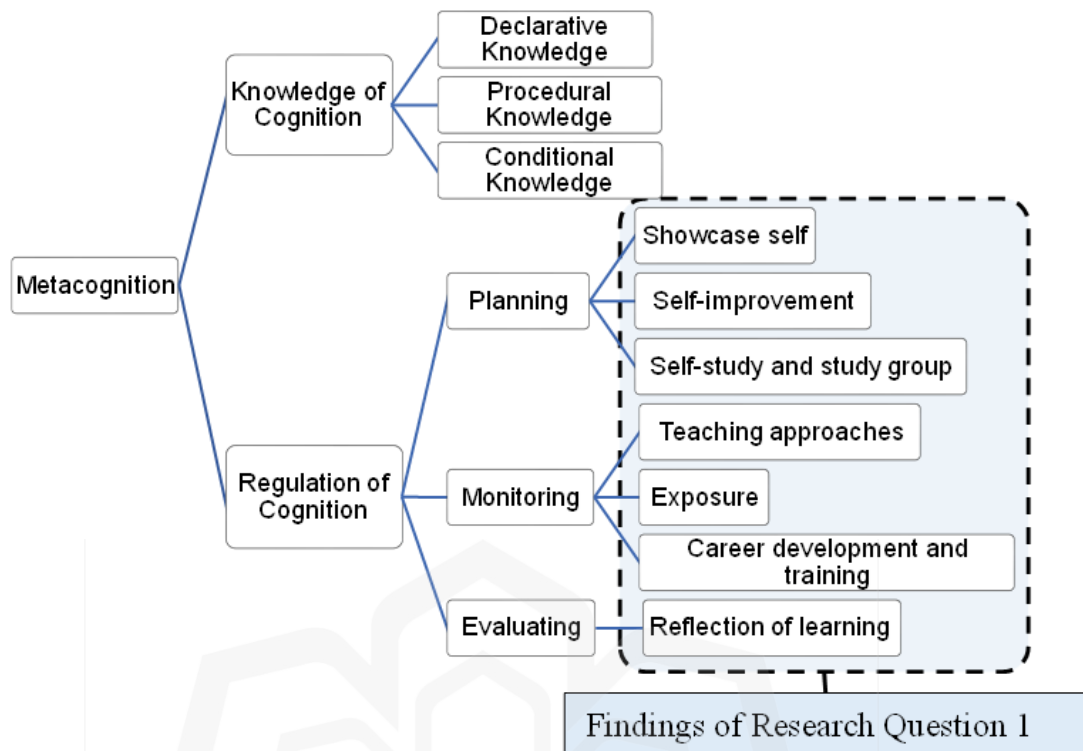


Figure 6.1 Brown's (1987) Model of Metacognition (adapted)

Planning

Planning is conducted before the process whereby learners will pick relevant cognitive strategies and resources. In this study, the students or graduates make the decision to **showcase themselves** before they are hired through their resume, portfolio/e-portfolio, preparation before the interview as well as how they present themselves during the interview.

Building an effective resume is important in enhancing employability. This finding supports a study conducted by Shore et al. (2021). They investigated the impact of resume writing quality on employment decisions. Participants were given fabricated resumes to evaluate and some of the resumes have errors while the others are error-free. Resumes with errors had less chance of being shortlisted compared to those with error-free resumes. The study findings suggest applicants to ensure error-free resumes to enhance their employability (Shore et al., 2021).

Another study was conducted by Green et al. (2020) addressing the challenges faced by college students, particularly in Information Technology (IT) and cybersecurity when seeking their first major-related job. The researchers introduced a tool called e-RAP (Electronic Resume Analyzer Portal), applying machine learning and natural language processing, to analyse and provide feedback on students' resumes. Over 60 resumes were processed through e-RAP, with the results indicating potential improvements. The tool aims to assist students in strengthening their portfolios by offering automatic feedback and rating reports.

Building an e-portfolio is crucial in showcasing oneself and enhancing graduate employability. Hokkanen (2023) found a similar finding when investigating the perceived benefits of electronic portfolios for students in gaining employment, and whether there were differences in perceptions between employers and students. It was a mixed-method study among Master's degree students in the Full Stack Development programme at Jamk University of Applied Sciences as well as industry employers. The findings indicated that both employers and students perceived e-portfolios as advantageous. Employers value them regardless of the candidate's industry work experience. It was discussed that students may underestimate the positive impact of e-portfolios on their employability. The study also emphasises the need to create an e-portfolio during their studies.

Holtzman et al. (2022) did a similar study assessing the perceived value of portfolios in the hiring process by representatives from small and large businesses in New Jersey. The study also investigated the portfolio's benefit on applicants in the hiring process. A survey conducted with 109 small businesses and 71 large businesses revealed that representatives from both small and large businesses expressed a belief that submitting a portfolio of exemplary work could be advantageous for both the applicant and the employer in the hiring process.

Besides building a resume and e-portfolio, **preparation for a job interview** plays a role in enhancing employability. This finding supports Anaza et al. (2023) who investigated the effectiveness of a mock interview assignment on students' perceptions of their interview skills and career preparation. The mock interview assignment was given to entry-level undergraduate students to practice it with upper-

level students acting as hiring managers. The results highlight the positive impact of mock interviews where the students received feedback for them to improve on future preparation before going to a job interview.

Additionally, **self-presentation** or how graduates present themselves during a job interview affects graduate employability. Answering questions with confidence during a job interview will enhance their chances of being hired. A study was done by Dimopoulos (2020) which is parallel with the findings of this study. The study explored the significance of candidates' self-confidence during job interviews and its effect on employers' hiring decisions. The study sample was 260 participants in Greece measuring the candidates' self-confidence in three areas of recruiters' decisions: the likelihood of hiring them, suitability for the position, and shortlisting them for a second interview. The study found that candidates' self-confidence significantly influenced recruiters' decisions across all three dimensions, emphasising the importance of self-confidence in the hiring process.

The second metacognitive strategy categorised under Planning is Self-improvement. **Self-improvement** is done through a process of continuous learning and upskilling on various skills. One of the skills highlighted in this study is for graduates to improve on time management skills. This finding agrees with Bennett et al. (2020) which suggested the need for graduates to smartly handle their limited time. This is especially challenging for students who may not have enough information to make smart choices. Bennett et al. (2020) highlighted a way of teaching for employability which should clearly show why each learning task and experiential development opportunity (EDO) is important for students' future lives and jobs. This means turning existing tasks, such as team-based assessments, feedback exchange, and critical reflection, into moments that will help students with employability.

Self-study and study group is another metacognitive strategy under Planning. Students or graduates who continue to study independently as well as in groups will develop critical thinking and problem-solving skills. These skills will help to enhance their employability and learning sustainability. In terms of self-study, the finding is different from the finding from research by Jin and Ji (2021). In comparison, in terms of a study group, this finding is similar to their finding. They investigated the

relationship between metacognitive ability, self-directed learning ability, and critical thinking among nursing students. The study found that the overall metacognitive capability of the nursing students was relatively low, with moderate levels of self-directed learning and critical thinking abilities. In light of that, Jin and Ji (2021) believe that learning in groups will promote their engagement and enhance the professional recognition of nursing students. They also suggested educators in health vocations to foster students' self-confidence and interest in nursing.

Monitoring

Monitoring deals with the learners' knowledge of their performance during the learning process (Brown, 1987). In this study, monitoring is done by effective **teaching approaches** whereby the lecturers provide real-life tasks and relatable examples to help students sustain their learning and improve employability. Miller and Konstantinou (2022) did a study that has a similar finding. The study explored the gap in students' ability for formal reflection on performance and progress in higher education. Based on the student's reflection, the study emphasises the value of authentic assessment in bridging academic and professional practice. Real-life tasks or authentic assessments will improve students' academic performance as well as develop their skills to fulfil the needs of graduates and employers.

Besides teaching approaches, monitoring is done by continuous exposure to the graduates in HEIs and industries. The exposures include: 1. Part-time job, 2. Active participation, 3. Courses offered in university, 4. Engagement with alumni, 5. University-industry engagement and, 6. Guidance and resources.

From the interviews with the participants, this study found that students will develop skills that enhance their employability through **working part-time** during their studies. Similarly, employers favour candidates who have working experience compared to those who do not. Harun et al. (2020) found evidence that aligns with this finding. They conducted a study aimed to explore the factors influencing employment among individuals with learning disabilities (LDs) in Malaysia. Face-to-face interviews were carried out with 90 individuals aged 18 to 25 in Kuala Lumpur and

Selangor. After excluding 13 respondents with a high likelihood of intellectual disability, the analysis concentrated on 77 young adults. Results showed that 74.0% had work experience, and 64.9% were employed at the time of the interview. Statistical analysis revealed significant associations between individual, family, and community factors and respondents' employment. Gender and financial support emerged as statistically significant contributors to the model. The study recommends improvements to current school-to-work transition programmes to better equip graduates with essential skills for the job market.

Besides working part-time, **active participation in co-curricular activities** is reported to enhance employability skills among students. This finding supports the finding in a study by Ismail et al. (2021). They did research investigating the correlation between co-curricular involvement and academic performance, leadership role, and perceived development of employability skills among undergraduate students. An online survey questionnaire was distributed to 652 students who registered at the Centre of Co-curriculum. The study found a positive relationship between co-curricular involvement and academic performance, leadership role, and employability skills development. The study highlights the importance of co-curricular activities in enhancing various aspects of students' university experiences.

From the interview, the participants highlighted the importance of the **courses offered at the university** in enhancing graduate employability and learning sustainability. Courses offered in HEIs should be updated with technological knowledge and skills development to produce graduates who match the needs of the industries. In 2020, Ma'dan et al. did a study with a similar finding. They investigated strategies employed by public universities in Malaysia to improve graduates' competency levels and reduce unemployment. Utilising an exploratory research approach and qualitative methods, the study conducted face-to-face interviews with expert informants from eight selected public universities in Malaysia. The experts include deputy vice-chancellors, directors of graduate employability, and alumni centre representatives. The results indicate an increasing recognition among university faculty that certain courses and programs require restructuring to align with current market trends, aiming to tackle the issue of unemployment among graduates. This is

due to the rapid technological changes which may compromise graduates' education and readiness for current industry demands (Ma'dan et al., 2020).

Engagement with alumni also plays a vital role in enhancing graduate employability. Programmes with alumni will help the current students to be prepared for what they will face later when working in the industry. This finding is similar to the finding of a study by Nanda et al. (2021). They highlighted the role of alumni in producing high-quality graduates. The study explored the role of alumni in optimizing the soft skills of prospective graduates. Through interviews and discussions with experienced alumni, the research identifies key soft skills needed in the industry, including communication, leadership, personal, creative, and interpersonal skills. Additionally, the study recommends training programs designed by alumni to impart these skills to students, facilitating their transition to the workforce.

Other than that, **university-industry engagement** plays a role in enhancing graduate employability. With university-industry engagement initiatives, HEIs will be informed of what is needed by the industries. This helps them to take necessary actions to produce graduates that will fulfil their needs. A study by Goteng et al. (2022) had a similar objective to incorporate industry-based labs to enhance students' practical knowledge and skills. In collaboration with Amazon Web Services Academy, they redesigned the curriculum of a Cloud Computing module for undergraduate students. The study highlighted the effectiveness of combining academic theories with real-world applications through industry collaboration. The industry-based labs have increased student engagement and learning outcomes achievement.

Additionally, **guidance and resources** provided by lecturers help to enhance graduate employability and learning sustainability. From the interviews, the participants highlighted the importance of lecturers sharing stories of what the students will face later when they enter the workforce. This finding supports Ranaraja et al. (2022). They conclude that lecturers can significantly motivate students by raising awareness about the nature of the industry, career journeys, and the competencies required for employability. Similarly, Ma'dan et al. (2020) highlight the need to provide lecturers with industry-specific skills. This is because lecturers who

have industry-specific skills will enhance the quality of students and improve their preparedness for the job market.

The industries also play an important role in enhancing graduate employability by providing **career development and training** opportunities to upskill or reskill the graduates. Likewise, Colaco (2023) did a study that is parallel to this finding. The purpose of the study was to assess the impact of upskilling and retraining initiatives on job satisfaction and staff retention in the industrial sector. Utilizing a mixed-methods approach, including a literature review and questionnaire research, the study found that upskilling and retraining initiatives were associated with improved productivity, efficiency, and job performance, offering new career opportunities. There were also communication and awareness issues regarding available training programmes. The study concluded that upskilling and retraining programs are essential for both organizational and employee benefit due to the transformative impact of automation and AI (Artificial Intelligence) in the manufacturing sector.

Evaluating

Lastly, evaluating means the learning is evaluated by looking at how well a strategy is in accomplishing the objectives. In this study, evaluating is done through **reflection of learning** where students share their thoughts at the end of a learning session or graduates write as reports to their superiors while working in the industry. This practice helps the students and graduates to identify which skill or knowledge area they should improve. This finding supports the finding by Cavilla (2017) who investigates the connection between students' self-reflection and their academic performance and motivation. It was indicated that the use of reflection as a method to enhance metacognition leads to better academic performance or increased motivation for completing assignments. The study findings suggest that the use of reflection as a tool for enhanced metacognition to maintain and improve students' academic performance and motivation. The study suggests reflection to be implemented intentionally and consistently throughout students' academic journey to help them with skills and strategies for realising their full potential.

In parallel, reflection of learning helps the lecturers to improve future lessons. Göbel et al. (2021) did a study and found a result that aligns with this finding. The study aimed to understand how student feedback contributes to the reflection on teaching and the professional development of pre-service teachers. The findings suggested that pre-service teachers generally hold positive attitudes towards using student feedback for reflection. Discussions between teachers and students on reflection are deemed promising for pre-service teacher development.

6.2.2 Research Question 2

How does Education 4.0 enhance learners' learning sustainability and employability from the perspective of experts, lecturers and alumni?

Education 4.0 helps to enhance graduate employability and learning sustainability through 12 advantages. Each advantage is discussed below:

1. Able to showcase self and enhance employability

The interviews conducted revealed Education 4.0 tools such as e-portfolios and video resumes will benefit the graduates to showcase their strengths and stand out more among other candidates who do not have them. This finding agrees with Gutiérrez-Santiuste et al. (2022). They investigated the effectiveness of e-portfolios in preparing higher education students for the job market and explored students' perspectives before and after creating their e-portfolios, using means analysis, t-tests, and correlation analysis. The findings highlighted the strengths of e-portfolios in aiding students' planning to enter the workforce. E-portfolios also expand professional networks, enhancing visibility in the job market, and facilitating communication with employers.

In comparison, the role of video resumes in graduate employability is different compared to the findings of Apers and Derous (2017). They investigated whether recruiters could accurately judge candidates' personalities from different resume formats, including video, audio, and paper resumes. It was reported that resume

formats and the perceived attractiveness of applicants did not impact the recruiters' judgments. The study suggests that recruiters may not be able to reliably judge candidates' personalities from various resume formats.

2. Improve and sustain learning

From the interviews conducted, the participants shared how Education 4.0 tools help to improve and sustain learning. With Education 4.0, lecturers are able to improve their teaching and future lessons, particularly through students' projects, e-portfolios, and weekly reflections. Lecturers are also able to guide the students which helps their learning sustainability. These findings support the findings by Lawrence et al. (2019). They examined the advantages and disadvantages of Education 4.0 within the Malaysian education sector through interviews with lecturers from selected institutions. The study found that Education 4.0 creates an opportunity for educators to engage students better by incorporating new technology tools. With Education 4.0, educators can design engaging tasks to promote independent learning through methods like flipped classrooms. This technology allows educators to expand their teaching and develop students' learning through collaborative approaches.

3. Solve problems

The participants stated that Education 4.0 tools help to solve problems in education. During the COVID-19 pandemic, lecturers did not have to postpone lab sessions as they could be conducted virtually. Darma et al. (2020) found a result similar to this finding. They investigated the impacts of Covid-19 on education and it was found that Education 4.0 is able to address the challenges that come from the pandemic. Some of the ways that educators utilise Education 4.0 are through implementing various learning approaches such as blended learning, project-based learning, and flipped classrooms.

4. As an exposure

Besides solving problems, Education 4.0 and digital tools act as exposures which enhance graduates' future employability. Metilda and Neena (2017) did a study with a similar finding investigating the impact of digital tools and networking on graduates' employability skills. The study sample was business graduates. The findings reveal a positive correlation between exposure to digital technology and enhanced process skills development. This emphasises the role of digital exposure in enhancing graduates' employability and overall success in their careers.

5. Gain skills

Based on the interviews, it was shared that students and graduates are able to gain new skills when using Education 4.0 tools. This finding supports the finding by Budu et al. (2021). Their study aims to enhance understanding of the impact of information and communication technologies (ICTs) in higher education on graduates' employability, with a specific focus on E-learning environments. A survey was distributed to 319 respondents recent graduates from tertiary education institutions in Ghana. The findings show interactive and collaborative learning as the most significant feature of E-learning environments, positively influencing students' career development toward employability. It was added that graduates who experienced more interaction during their studies expressed more positive views on gaining employability skills. Utilising technology-based learning methods has developed graduates' technical skills and proficiency with digital equipment as they get ready to enter the workforce. The study suggests the potential of E-learning environments to address skill mismatch in developing economies.

6. Save cost and time

Education 4.0 also saves cost and time in graduate employability. The participants said that employers are also able to save costs because they can use professional sites like JobStreet and LinkedIn to seek new employees, without having to hire recruiters. Unlike this study which discusses employers' perception, the study by Hosain and Liu (2020) explored jobseekers' perceived experience towards LinkedIn as a job searching platform. Through focused group discussions with 150 respondents from Bangladesh and India, the study finds that LinkedIn is the preferred platform for job-seeking. Similar to this study's findings, the study highlighted cost-effectiveness as one of the aspects that influence the usage of LinkedIn. This is because there is no charge to create and use LinkedIn accounts for both job seekers and employers. Privacy, fairness, and ethics on LinkedIn are reported to be less of a concern for the participants. This finding is the opposite of the finding of the current study where lack of privacy is a concern among the participants when using Education 4.0 tools.

In this study, the participants shared the role of an AI (Artificial Intelligence) tool called ChatGPT in facilitating work and studies and this finding aligns with Haleem et al. (2022). ChatGPT is a versatile tool that can generate content quickly based on prompts, aiding users in refining their writing and accomplishing literary goals (Haleem et al., 2022). One notable advantage of ChatGPT is its ability to handle unstructured data efficiently, transforming it into a structured format. While its text-generation feature attracts public attention, the real impact lies in its capacity to comprehend content. Similarly, the current study also found that there is a lack of human touch in using ChatGPT as the participants reported the tool's inability to read human emotion (Haleem et al., 2022).

7. Convenient

Education 4.0 tools offer the advantage of accessibility which is convenient for lecturers. With cloud storage technology, lecture notes, assignments, learning artefacts and so on are documented in one place. This technology makes mobile learning possible as documents are easily accessible anytime anywhere using mobile phones.

Karim et al. (2018) conducted a study to investigate students' viewpoints and engagement in mobile learning within the context of higher education. The result was found to be similar to this finding. In terms of mobile learning, the research revealed a positive outlook and engagement among tertiary students. The majority of students expressed a belief that mobile devices are beneficial for their learning, which results in learning sustainability.

8. Produce the best result

Based on the interviews, the participants stated that students are also likely to produce the best result when using Education 4.0 tools like e-portfolios. Students will produce the best assignment when they are aware that it will be included in their portfolio. These findings align with the findings of Segaran and Hasim (2021). A meta-analysis was conducted to identify trends and deficiencies in research within self-regulated learning and portfolios. The study found a correlation between self-regulated learning and motivation. When applying suitable skills in self-regulated learning, students effectively utilise their time and energy to accomplish tasks and do well for their portfolios.

9. Customisable

This study found that Education 4.0 and technology tools such as a resume-builder app are customisable which is a reason why graduates use the apps. This finding is similar to the tool applied in a study by Tucker et al. (2020). The study analysed an e-portfolio tool called Digication, by exploring its features and utilisation among second-year students in engineering. Digication is chosen as an e-portfolio tool as it can be customised to fulfil the needs of the students and faculty for individualised assessment. Student evaluation questionnaires indicate that e-portfolios successfully integrate teaching, learning, and personalised assessment, establishing them as a valuable pedagogical approach in engineering education.

10. Bite-sized content

This study found that Education 4.0 and technology tools like social media provide bite-sized content which are preferred by some learners to sustain learning. Similarly, there was a similar finding by Manning et al. (2021). They investigated the impact of Bite-Sized Teaching (BST) on students' attitudes and immediate knowledge recall. BST is an instructional strategy utilising peer teaching and bite-sized learning principles to handle cognitive load effectively. The study shows the positive effects of BST on students' attitudes and knowledge recalled compared to case-based teaching.

11. Vast knowledge available

The interviews with the participants revealed that searching on Google is a popular strategy for self-study due to the vast knowledge available. This helps the students to learn independently and sustain their learning. This finding does not support the finding by Atkinson and Barker (2021). They found that searching the Internet for information will lead users to easily accept judgments and information with little thought or reasoning.

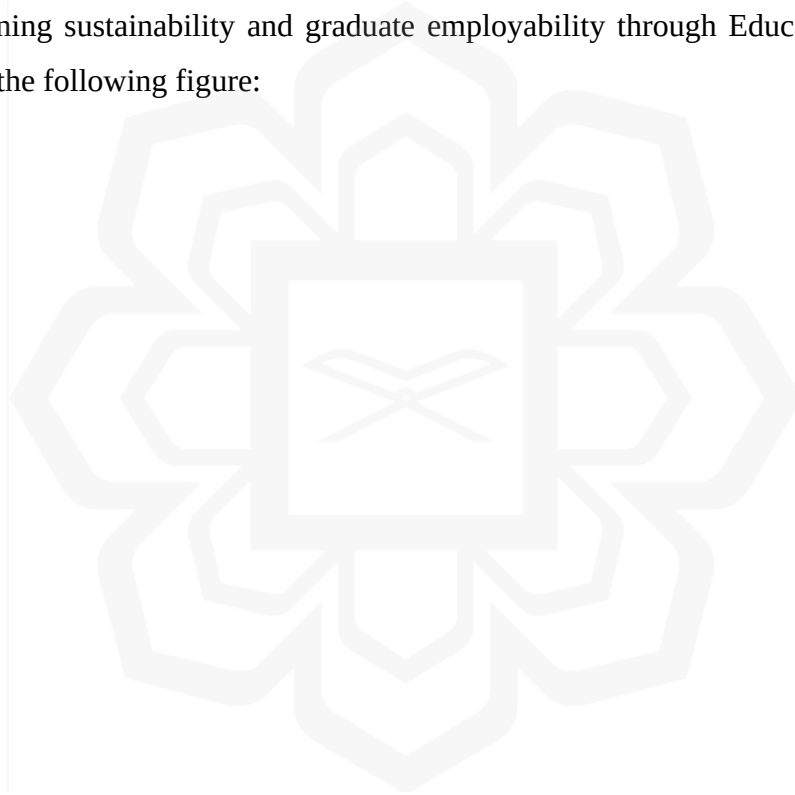
12. Generate income

The participants in the current study have highlighted the benefit of generating income from technology and Education 4.0 tools like Freelance and Upwork. Students are able to generate income through part-time work using the said tools. Caballero-Morales et al. (2020) revealed a finding similar to this finding. They studied the implementation of Education 4.0 on entrepreneurship and social development. The study found Education 4.0 to be crucial in providing the workforce with the necessary skills needed. It also found that Education 4.0 contributes to social development in environmental care, job creation, knowledge dissemination, and sustainable product development. Interconnectivity efforts have been enhanced globally during the COVID-19 pandemic and it has since increased achievement in entrepreneurship, social welfare, and engineering education.

6.2.3 Research Question 3

What are the attributes of a valid instrument to evaluate the effectiveness of a metacognitive strategy framework for learning sustainability and graduate employability through Education 4.0?

As discussed in Chapter Five, the attributes of the instrument have been presented to and validated by the experts during Round 1 and Round 2 of Fuzzy Delphi Method. With these attributes, the researcher has developed a framework of Metacognitive Strategies for Graduate Employability and Learning Sustainability through Education 4.0. The attributes to evaluate the effectiveness of a metacognitive strategy framework for learning sustainability and graduate employability through Education 4.0 can be seen in the following figure:



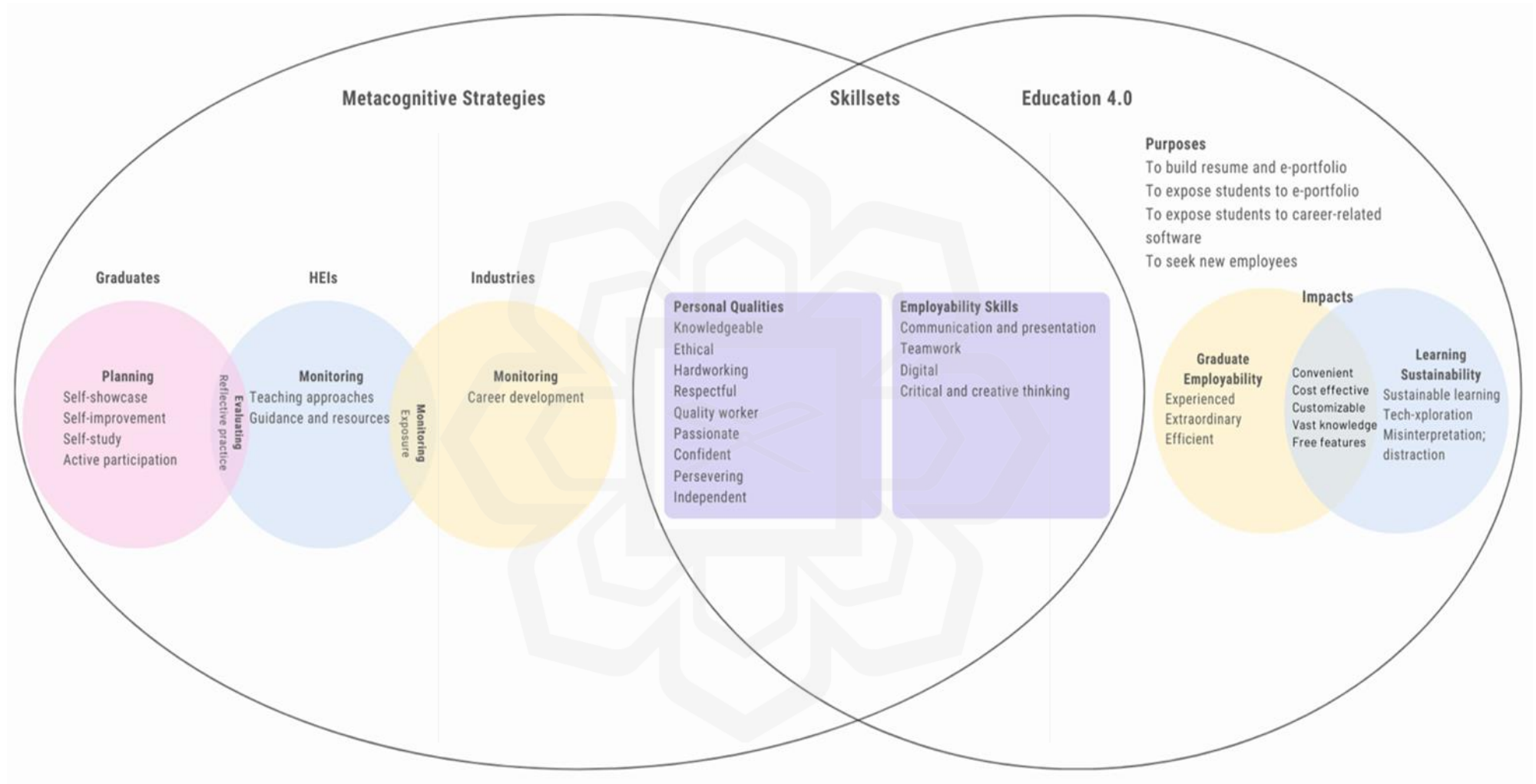


Figure 6.2 Framework of Metacognitive Strategies for Graduate Employability and Learning Sustainability through Education 4.0

The framework illustrates a comprehensive approach to enhancing graduate employability and learning sustainability by integrating Brown's (1987) Regulation of Cognition and Education 4.0. The circle on the right named Education 4.0 overlaps with the left circle of Metacognitive Strategies, showing both constructs should be integrated to produce graduates who will possess the skillsets that can be seen in the overlapped part of the circles.

With the successful integration of both metacognitive strategies and Education 4.0 highlighted earlier, it is hoped that this framework will produce graduates with the personal qualities and employability skills needed to enhance their employability and learning sustainability.

Table 6.1 Skillsets that graduates will have with successful integration

Personal Qualities	Employability Skills
Knowledgeable	Communication and presentation
Ethical	Teamwork
Hardworking	Digital
Respectful	Critical and creative thinking
Quality worker	
Passionate	
Confident	
Persevering	
Independent	

The birth of graduates with these skill sets would realise the student aspirations highlighted in Malaysian Education Blueprint Higher Education (MEB HE) (2015-2025). The Ministry of Education has outlined the attributes that graduates should have to fulfil the aspirations of higher education in Malaysia (Ministry of Education, 2015). These attributes are designed based on the vision of the National Education Philosophy of a balanced education as its foundation for individual student aspirations. The Ministry underscores the importance of achieving a balance between knowledge and skills (*ilmu*) and ethics and morality (*akhlak*). The student aspirations outlined in the MEB HE are centred around six core attributes: ethics and spirituality,

leadership skills, national identity, language proficiency, critical thinking skills, and knowledge. The following figure portrays how some of the skill sets discussed in this study can be connected to four of the core attributes mentioned, particularly to ethics and spirituality, leadership skills, critical thinking skills, and knowledge. In this study, there are no skill sets to be associated with the other two attributes namely national identity and language proficiency.

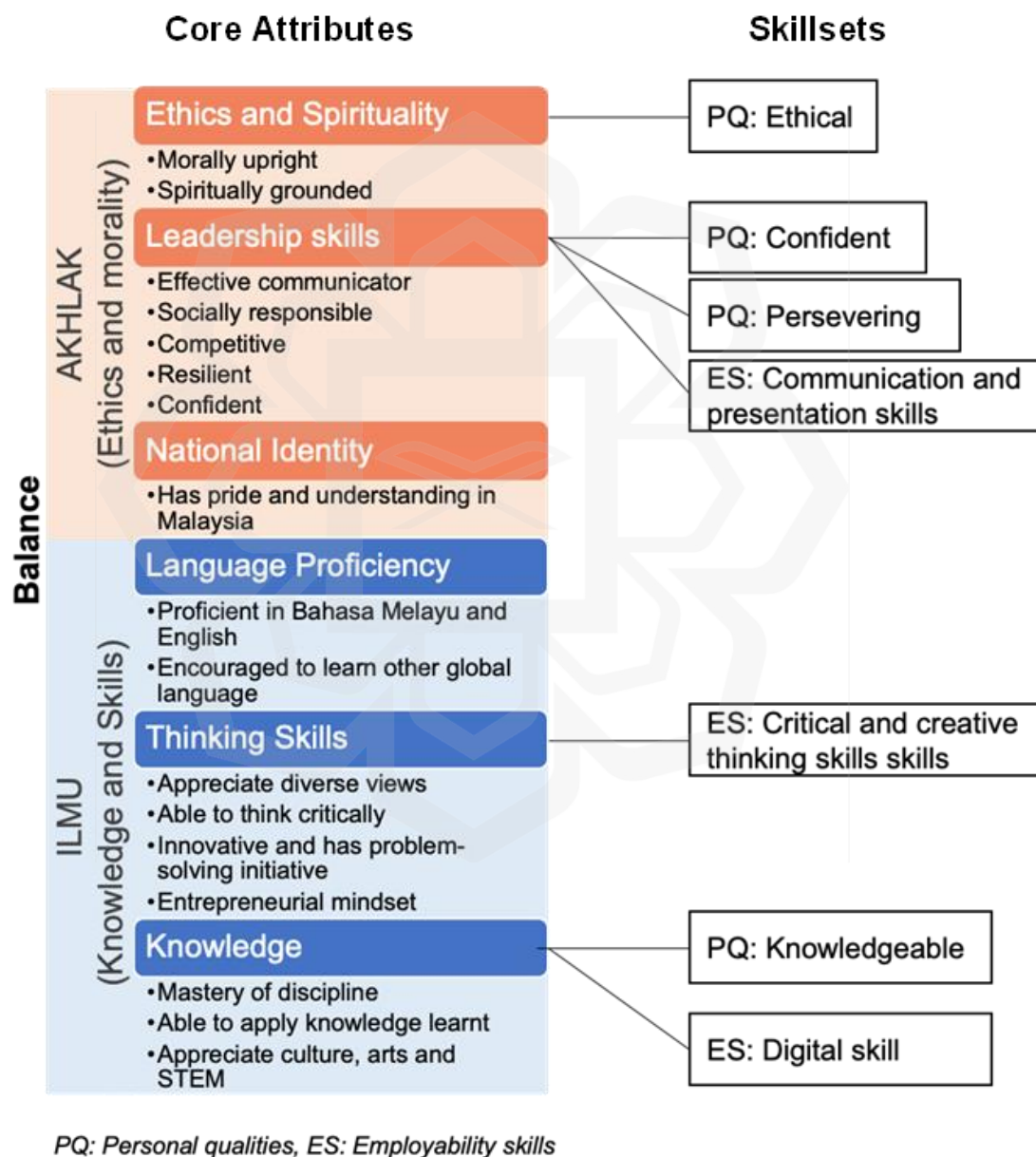


Figure 6.3 The Relationship between Skillsets and Core Attributes of Graduates

(adapted from Ministry of Education, 2015, p.10)

In terms of personal qualities, there are several findings that are parallel with the findings from previous studies. Sadiq et al. (2023) conducted a study identifying the professional attributes and behaviours of healthcare educators in distance learning programs in Pakistan. Professional attributes are examined based on personal and social characteristics, emphasising the importance of an effective educator's character, personality, obligations, topic expertise, pedagogical understanding, and commitment to continuous improvement. The study also revealed that social qualities, such as adaptability and flexibility in working interactions outside the classroom, are considered important for healthcare educators. These findings are similar to the personal qualities highlighted in this study which include being knowledgeable and independent which requires a high level of topic expertise and adaptability.

Likewise, another study with a similar objective was conducted by Walker and Rossi (2021). They explored students' perceptions concerning their personal attributes and success requirements in Work Integrated Learning (WIL). An online questionnaire was distributed to 421 third-year students taking Bachelor of Nursing. The results revealed a three-year Bachelor of Nursing program. Six personal qualities were identified as success requirements including enthusiasm, commitment to learning, self-motivation, confidence, communication skills, and lastly, compassion. These findings align with the personal qualities discussed in the current study which are being passionate, confident, and hardworking as well as having the communication and presentation skills for employability.

Kichula et al. (2019) did a study among a sample with a similar background. The researchers conducted an experiment comparing two groups of medical students—one using experimental teaching methods and the other using traditional methods to emphasise the importance of not only theoretical knowledge but also practical skills, ethical values, and personal qualities. The results showed that the group exposed to experimental teaching had a significant improvement in their professional qualities, including applying knowledge in practice, working with specialised literature, and handling stress. The study highlights the crucial role of both professional and volitional qualities, such as responsibility, quick decision-making, and emotional resilience, in shaping competent and effective doctors. These findings

are similar to the current findings which highlight the importance of being knowledgeable, respectful, persevering and independent.

Additionally, in terms of employability skills, previous studies were conducted and the results found are similar to the current study. Hosain et al. (2023) explored the key employability factors impacting the overall graduate employability from private universities in Bangladesh. Six key employability factors were chosen based on an extensive literature review namely academic performance, technical skills, communication skills, personality, leadership and motivational skills, and teamwork and problem-solving skills. 360 hiring managers were surveyed and the results showed that academic performance, personality, communication skills, and teamwork and problem-solving skills significantly and positively influence the overall graduate employability. Conversely, leadership and motivational skills, and technical skills were deemed statistically insignificant in relation to overall graduate employability. The current study also highlighted skills like communication and presentation skills, teamwork, and critical and creative thinking skills as important for the graduates to possess for enhanced employability. However, this study highlighted digital skills as important which is not parallel to the previous finding as technical skills are found to be insignificant to graduate employability.

In a different study by Nanda et al. (2021), they address the increasing demand for skilled graduates post-COVID-19, to emphasise the importance of soft skills alongside academic qualifications. Through interviews and discussions with experienced alumni, the research identifies key soft skills needed in the business industry, including communication, leadership, personal, creative, and interpersonal skills. In comparison with the current study, two of the employability skills are similar which are communication and presentation skills, and critical and creative thinking skills. Teamwork and digital skills were not discussed in the previous study.

Meanwhile, Nadarajah (2021) did a study to identify the employability gap among graduates and the competencies required in job markets. The employment market seeks a range of skills, with communication skills being the most in-demand, necessary for 70 percent of jobs. Analytical skills are a requirement for almost 31 percent of positions, and organizational, planning, writing, and report-writing skills

hold importance for 27.9 percent. Numeracy skills are critical in 26.5 percent of jobs, accompanied by the need for time management and meeting deadlines. Accuracy and attentiveness are specified by 25 percent of employers, while teamwork is a crucial aspect in 23.5 percent of jobs. Motivation and leadership skills are essential for nearly 20 percent of positions, and computer skills and flexibility are prerequisites for 17.6 percent of jobs. These findings are parallel with the current findings that highlight the role of communication and presentation skills, teamwork, digital skills, and critical and creative thinking skills in enhancing graduate employability.

6.3 RECOMMENDATIONS

Both the instrument and framework developed from this study would benefit stakeholders namely students, institutions and graduates to enhance employability and learning sustainability through the integration of metacognitive strategies and Education 4.0. Therefore, the researcher would like to suggest a few recommendations:

6.3.1 Recommendation to Students and Graduates

The findings of this study showed that the first metacognitive strategy named Planning, is done mainly by the students and graduates. Proper planning before students graduate or before they plan to find jobs is crucial to enhance employability. To enhance graduate employability and learning sustainability, here are some recommendations for students and graduates:

Start Early with Resume and E-Portfolio

It is crucial to begin building a resume and e-portfolio during studies, rather than waiting until the final year. Students should start documenting their academic achievements, projects, and skills as they progress for a comprehensive representation of their capabilities. This proactive approach not only ensures accuracy but also gives them the opportunity to continuously update and tailor their portfolio for specific career paths.

Continuous Learning and Upskilling

Students and graduates should take advantage of online courses, particularly those available through platforms like Microsoft accounts, to continuously improve and upskill. Employers value candidates who demonstrate a commitment to learning and adapting to new technologies. Adding relevant certifications and skills to their portfolio enhances their competitiveness in the job market and contributes to ongoing professional development.

Thorough Interview Preparation

Before any job interview, students and graduates should conduct thorough research on the company, its values, and the specific role they are applying for. They should also anticipate potential interview questions and practice how to respond to the questions. This preparation not only showcases their genuine interest but also demonstrates their dedication and enthusiasm for the position. They should also be ready to discuss how their skills are valuable to fulfil the company's needs.

Self-Presentation During Interview

Students and graduates should learn how to present themselves confidently in both written communication and face-to-face interactions. They should clearly articulate their achievements, skills, and aspirations. Additionally, professional image is crucial and they should dress appropriately for interviews and professional events. A polished and well-groomed appearance contributes to a positive first impression, reflecting their seriousness and respect for the professional environment.

By implementing these recommendations, students and graduates can significantly enhance their visibility to future employers, ultimately improving their employability and fostering continuous learning and development.

6.3.2 Recommendation to HEIs

Teaching Improvement

Lecturers play a crucial role in shaping students' readiness for the industry. They should incorporate real-life tasks and relatable examples into their teaching methods, providing students with practical exposure. It is equally important for lecturers to stay up-to-date on what is trending and needed in the industry. Lecturers should also continuously update their knowledge to ensure they impart the latest insights to students.

Skill-development Courses

Higher education institutions should proactively address the soft skills gap by integrating courses that help to develop students' skills. The courses should focus on soft skills like communication and presentation skills. Recognising the significance of software in various industries, institutions should also offer courses that familiarize students with relevant software applications. This not only equips students with technical know-how but also enhances their adaptability to enter the workforce later.

Collaboration with Alumni

Additionally, fostering engagement with alumni is a valuable strategy. Inviting successful alumni for sharing sessions will bridge the gap between current students and industry professionals. The alumni invited could provide first-hand experience and insights into the challenges and expectations of the workforce. These sessions will offer valuable guidance for the current students to improve on the skills needed for success. This connection not only inspires students but also provides them with a realistic view of what they will face soon.

These recommendations collectively address the current skillset gap and prepare students for the future job market. By aligning academic curriculum with industrial demands, emphasising soft skills development, and integrating alumni connections,

higher education institutions can significantly enhance students' employability and learning sustainability.

6.3.3 Recommendation to Industries

Collaboration with Industries

Experts from the industries should be invited to engage in regular feedback meetings with academic faculties, to have open discussions about what is needed in the industry. Besides that, they could also be invited to be the judges or panels during students' final-year project presentations. This will help students to identify the skills that require further improvement for them to be prepared for future employment. Other than internship programmes, projects that require students to visit the industries or workplaces could be conducted to allow students to predict what their working experience will be like in the future.

Career Development and Training Opportunities

Providing training and career development opportunities is essential for both employee growth and industrial needs. Industries should establish comprehensive training programmes that address the current industrial demands like training on technical skills, soft skills, and industry-specific knowledge. These programmes will equip the employees, especially recent graduates, with the latest skills and knowledge necessary for their roles. Mentorship programmes should be introduced as this not only fosters a sense of community within the workplace but also facilitates knowledge transfer and skill development. A continuous learning culture should be encouraged by partnerships with educational institutions, online learning platforms, in-house training sessions or incentives for further education to further motivate employees to upskill themselves.

By investing in feedback meetings, comprehensive training programmes, mentorship, and a continuous learning culture, industries can contribute significantly to the upskilling and career development of graduates, helping them to become valuable assets in their work sector.

6.3.4 Recommendation for Future Studies

The researcher would like to suggest a few recommendations for studies to be conducted in the future.

Evaluate Framework Effectiveness

As a result of this study, a metacognitive strategies framework has been developed to enhance learning sustainability and employability through Education 4.0. Additionally, this study has also developed an instrument to evaluate the effectiveness of the framework. However, the effectiveness of the framework has yet to be evaluated. It is recommended for future researchers to adopt or even adapt the instrument as a part of their research methodology. It is hoped that the research findings will add value to the existing body of knowledge regarding metacognitive strategies and Education 4.0 integration on learning sustainability and employability.

Diversify Sample Sources

Future studies could benefit from diversifying the sources of qualitative data collection. Instead of focusing on public Malaysian higher education institutions, future studies could include samples from private institutions as well as polytechnic and community colleges. This is because some work sectors do not require graduates to hold a bachelor's degree. Expanding future studies to include a broader range of institutions would provide a more comprehensive understanding of the perspectives and experiences.

Include Various Work Fields

The current study is limited in terms of participants coming from a few work fields like education, construction and manufacturing. In light of that, future research could involve a more extensive pool of employers coming from a wider range of work fields. This would provide a deeper understanding of the skills and attributes valued across different industries which will be a valuable addition to the current findings.

Other Methods of Data Collection and Analysis

The current study employed the Fuzzy Delphi Method with participation from 20 to 22 experts. Future studies could consider collecting data among a bigger number of participants with a different quantitative analysis technique. With another method, the findings could be generalised and provide richer insights into the unique contexts and practices within Malaysian higher education.

Other Setting

The current study is conducted in a Malaysian setting. The same study could be replicated in other countries as different countries have different values and cultures. This means that the findings in other settings might not be the same as the current findings. This could contribute to sharing different perspectives and additional values to the study of metacognitive strategies, graduate employability and learning sustainability.

6.4 CONCLUSION

In a nutshell, this study has discussed as well as developed a framework on metacognitive strategies for graduate employability and learning sustainability. Based on the findings, it can be concluded that there are seven metacognitive strategies employed to enhance graduate employability and learning sustainability which include

Showcase self, Self-improvement, Exposure, Self-study and study group, Career development and training, Reflection of learning, and Teaching approaches. There are two themes generated to answer how Education 4.0 enhances learners' learning sustainability and employability which are Purpose and Advantages. The advantages of using Education 4.0 are: 1. Able to showcase self and enhance employability, 2. Improve and sustain learning, 3. Solve problems, 4. As an exposure, 5. Gain skills, 6. Save cost and time, 7. Convenient, 8. Produce the best result, 9. Customisable, 10. Bite-sized content, 11. Vast knowledge available, and 12. Generate income. A framework has been developed integrating both metacognitive strategies and Education 4.0. It is hoped that this framework will produce graduates who possess the skillsets needed to become more visible to the employers which will enhance their employability in the future. With these findings, it is hoped that this study is able to fill in the gap of skills mismatch and inadequate literature written on metacognitive strategies for graduate employability and learning sustainability through Education 4.0; especially in Malaysia.

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APPENDIX A

INTERVIEW PROTOCOL (INDUSTRIAL EXPERT)

Time of Interview:
Date:
Place:
Interviewer: Nur Sakinah
Interviewee: Informant.....
Position of Interviewee:
<i>Tick each item once said:</i> <i>Give salam, ask "how are you?" and have a short chat</i> <i>Thank the interviewee and appreciate their willingness to be an informant</i> <i>Describe the project and the purpose of the interview</i> <i>Inform them of the estimated duration of the interview</i> <i>Reiterate on my interest of in-depth information and not on correct answers</i> <i>Inform them that their identity will remain anonymous and confidential</i> <i>Ask permission to record the conversation and get their verbal consent</i>
Lead in: <i>Can you share a little bit about your current industry and your experience/roles as an industrial expert? How long have you been interviewing candidates for new employees? What's your hiring process?</i>
Questions: <i>Tick once interviewee provided an in-depth information</i> ☐ How do you decide whether a graduate is employable or not? Could you share your hiring process for new employees? ☐ What do you think are some of the attributes and competencies that you consider important among graduates? ☐ Out of the attributes mentioned earlier, rank them from the most to the least important for employability and learning sustainability. Why do you arrange in that order? ☐ Why do you think these attributes are important for employability and learning sustainability? Kindly elaborate. ☐ Out of the candidates that you have interviewed, what did they showcase that make them stand out from the rest? Can you share an example of skills or evidence? ☐ Did the graduates use Education 4.0 tools like e-portfolio, video resume, e-certificates and etc.? Did the tools help them for employability? ☐ What are the strategies that you think graduates should practice to enhance the attributes mentioned, particularly through Education 4.0? ☐ For employment opportunities, does it matter which university the graduates are from and why? ☐ What are the skillsets that you want to see in graduates' e-portfolio?
☐ How well did the university prepared graduates for the job market? What else could be done to enhance their chances to be employed? ☐ What are some Education 4.0 tools that graduates are using for employability and learning sustainability? ☐ How are the Education 4.0 tools above being used for graduate employability and learning sustainability? ☐ What are the advantages and disadvantages of each Education 4.0 tool stated earlier

for graduate employability?

- ☐ What are the advantages and disadvantages of each Education 4.0 tool stated earlier for learning sustainability?
- ☐ Were the graduates taught how to document skillsets and reflect learning (i.e. using Education 4.0 tools like e-portfolio or video resume)? How did these help the industry?



APPENDIX B

INTERVIEW PROTOCOL (LECTURER)

Time of Interview:
Date:
Place:
Interviewer: Nur Sakinah
Interviewee: Informant.....
Position of Interviewee:
<i>Tick each item once said:</i> ☐ Give salam, ask “how are you?” and have a short chat ☐ Thank the interviewee and appreciate their willingness to be an informant ☐ Describe the project and the purpose of the interview ☐ Inform them of the estimated duration of the interview ☐ Reiterate on my interest of in-depth information and not on correct answers ☐ Inform them that their identity will remain anonymous and confidential ☐ Ask permission to record the conversation and get their verbal consent
Lead in: <i>Can you share a little bit about your experience as a lecturer - Kindly share the programme and subjects that you’re teaching? What about your students – what are their levels, general attitudes in learning and expected career pathway?</i>
Questions: <i>Tick once interviewee provided an in-depth information</i> ☐ 1) How does the degree prepare your graduated students for employment? ☐ 2) How well are you preparing your students for the job market? What else could be done to enhance the chances to be employed? ☐ 3) What skills have your students gained during their degree that make them attractive to employers in their field? ☐ 4) What do you think are some of the attributes and competencies that employers consider important among your graduates? ☐ 5) Out of the attributes mentioned earlier, rank them from the most to the least important for employability and learning sustainability. Why do you arrange in that order? ☐ 6) Why do you think these attributes are important for employability and learning sustainability? Kindly elaborate. ☐ 7) What are the strategies that you think graduates should practice to enhance the attributes mentioned, particularly through Education 4.0? ☐ 8) What are the skills that you are teaching your students to help them learn better? ☐ 9) Throughout the years you’ve been teaching, have you ever predicted students who will stand out and will be highly employable in the future? What made you predict that? Do they showcase skills or evidence that made you predict this?

How are they now in their career?
☐ 1) What are some Education 4.0 tools that your students are using for graduate employability and learning sustainability? ☐ 2) How are the Education 4.0 tools above being used for graduate employability and learning sustainability? ☐ 3) What are the advantages and disadvantages of each Education 4.0 tool stated earlier for graduate employability? ☐ 4) What are the advantages and disadvantages of each Education 4.0 tool stated earlier for learning sustainability? ☐ 5) Do you teach your students to document skillsets and reflect learning (i.e. using Education 4.0 tools like e-portfolio or video resume)? How did these help you in teaching and your students for their employability and learning sustainability?



APPENDIX C

INTERVIEW PROTOCOL (ALUMNI)

Time of Interview:
Date:
Place:
Interviewer: Nur Sakinah
Interviewee: Informant.....
Position of Interviewee:
<i>Tick each item once said:</i> ☐ Give salam, ask “how are you?” and have a short chat ☐ Thank the interviewee and appreciate their willingness to be an informant ☐ Describe the project and the purpose of the interview ☐ Inform them of the estimated duration of the interview ☐ Reiterate on my interest of in-depth information and not on correct answers ☐ Inform them that their identity will remain anonymous and confidential ☐ Ask permission to record the conversation and get their verbal consent
Lead in: <i>Can you share a little bit about your educational background? What is your qualification? What was your process in finding a job(s)? Were you hired immediately?</i>
Questions: <i>Tick once interviewee provided an in-depth information</i> ☐ 1) How does your Bachelor’s degree prepare you for employment? ☐ 2) What can be done by the university and lecturers for better learning sustainability and employment? ☐ 3) What do you think are some of the attributes and competencies that employers consider important among graduates? ☐ 4) Out of the attributes mentioned earlier, rank them from the most to the least important for employability and learning sustainability. Why do you arrange in that order? ☐ 5) Why do you think these attributes are important for employability and learning sustainability? Kindly elaborate. ☐ 6) What are the strategies that you think graduates should develop and practice earlier during academic years to increase employability and learning sustainability? ☐ 7) What have you learnt in the industry currently that you wished you have learnt earlier during university? ☐ 8) To what extent does your degree help you in the current industry? If not, how

do you upskill yourself to match the industry's expectations?

- ☐ 9) Do you have a lecturer in mind that taught you something really valuable, that impacted your employability? What was the knowledge taught that you wish this knowledge should be taught in universities so everyone will be highly employable?
-
- ☐ 1) What skills have you gained during your degree that makes you attractive to employers in your field?
 - ☐ 2) How do you package yourself that influence employer(s) to hire you?
 - ☐ 3) What are some Education 4.0 tools that you are using for graduate employability and learning sustainability?
 - ☐ 4) How are the Education 4.0 tools above being used for graduate employability and learning sustainability?
 - ☐ 5) What are the advantages and disadvantages of each Education 4.0 tool stated earlier for graduate employability?
 - ☐ 6) What are the advantages and disadvantages of each Education 4.0 tool stated earlier for learning sustainability?
 - ☐ 7) When you were in university, were you taught how to document skillsets and reflect learning (i.e. using Education 4.0 tools like e-portfolio or video resume)? How did these help you in employability and learning sustainability?

APPENDIX D

QUESTIONNAIRE

Survey: Effectiveness of Metacognitive Strategies for Sustainable Learning and Employability through Education 4.0

Survey: Effectiveness of Metacognitive Strategies for Sustainable Learning and Employability through Education 4.0

* Indicates required question

Dear respondent,

I am a Ph.D candidate from the Department of Curriculum and Instruction, Kullyyah of Education, IUM. I am surveying to examine the effectiveness of metacognitive strategies for sustainable learning and employability through Education 4.0. This research is under Dr. Mohd Shukri Nordin and Prof. Ts. Dr. Muhammad Sabri Sahric. Your taking the survey will help to develop a framework that will assist future graduates with skills necessary for employability and learning sustainability. It will also assist lecturers to plan their teaching to help students preparation for employability and sustain their learning. The survey will provide a new finding for universities and Ministry of Higher Education to reconstruct the syllabus and courses offered to enhance graduates employability and learning sustainability particularly through Education 4.0.

This survey is being done among experts in Education or New Employee Hiring. If you choose to participate in this survey, your answers will be treated as confidential, and the data will be used solely for academic purposes. This survey will take approximately 15 - 20 minutes of your time.

Your kind cooperation to take the time to answer this survey is greatly appreciated.

Researcher:
Nur Sakinah Ahmad Nasaruddin (019-3739150)
nsakinah.an@gmail.com

1. Do you agree to participate in this survey? *

Mark only one oval.

☐ I agree
☐ I disagree

2. Gender: *

Mark only one oval.

☐ Male
☐ Female

3. Level of Education: *

Mark only one oval.

☐ Diploma
☐ Bachelor's Degree
☐ Master's Degree
☐ PhD
☐ Other:

4. Years of working experience: *

Mark only one oval.

☐ 5 years or less
☐ 6-10 years
☐ 11-15 years
☐ 16-20 years
☐ More than 20 years

5. Field of Expertise: *

Mark only one oval.

☐ Education (as a lecturer) Skip to question 6
☐ New Employee Hiring (as an interviewer, a recruiter or hiring manager)
Skip to question 7

Institution:

6. Work sector: *

Mark only one oval.

☐ Public university / college
☐ Private university / college

Skip to question 8

Work sector:

Demographic Data

Please provide information about yourself.

7. *

Mark only one oval.

☐ Advertising and marketing
☐ Agriculture
☐ Computer and technology
☐ Construction
☐ Education
☐ Energy
☐ Entertainment
☐ Fashion
☐ Finance and economic
☐ Food and beverage
☐ Healthcare
☐ Hospitality and Tourism
☐ Manufacturing
☐ Media and news
☐ Mining (Oil and gas)
☐ Pharmaceutical
☐ Telecommunication
☐ Transportation
☐ Other:

Part 1: Metacognitive Strategies for Graduate Employability and Learning Sustainability

FREQUENTLY USED TERMS

Metacognitive strategies: Strategies, steps, actions or methods used to increase employment, remember the knowledge learned and apply the knowledge in career

Graduate employability: The qualities and skills that graduates have which make them employable to employers

Learning sustainability: An effective learning process that helps students to remember the knowledge learned and apply the knowledge in their career

Education 4.0: Tools or technology used in learning to increase employment, remember the knowledge learned and apply the knowledge in career

Resume/video resume: A document containing a summary of a person's education, working experiences and skills. A video resume is a resume in the form of a video

Portfolio/e-portfolio: A collection of work samples and learning evidence made by students. An e-portfolio is a portfolio in an electronic form (via websites, PDF form or other apps)

Key to Likert Scale:

- 1 - Strongly Disagree
- 2 - Disagree
- 3 - Neutral
- 4 - Agree
- 5 - Strongly Agree

a. Showcase self

Definition: Showcase self is a strategy that graduates/students use to showcase themselves to be more visible to employers through a resume, portfolio/e-portfolio, preparation before job interview and self-presentation during job interview.

To what extent do you agree/disagree with the following statements?

8. Students should utilise Education 4.0 tools to build an e-portfolio since Year 1 *

Mark only one oval

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mClyyvo0U32r6c_FlgKM2dFRvYd5M/edit

5/40

13. Graduates should practice answering questions before going to the job interview *

Mark only one oval

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

14. Dress up during a job interview affects the chances to be employed *

Mark only one oval

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

b. Self-improvement

FREQUENTLY USED TERMS

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b. Self-improvement

Definition: Self-improvement is a strategy that graduates/students use to improve themselves to increase their chance of employment through improving time management and stress management skills as well as identifying goals, passions and potentials.

To what extent do you agree/disagree with the following statements?

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mClyyvo0U32r6c_FlgKM2dFRvYd5M/edit

7/40

9. Graduates should include success stories (i.e. achievements, awards, participations during university) in their e-portfolio *

Mark only one oval

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

10. E-portfolio should be made compulsory as a part of programme assessment during university *

Mark only one oval

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

11. Video resume should be taught to all students in university *

Mark only one oval

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

12. Video resume acts like a pre-interview before graduates are called for a job interview *

Mark only one oval

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mClyyvo0U32r6c_FlgKM2dFRvYd5M/edit

6/40

15. Students submit assignments late because they lack time management skill *

Mark only one oval

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

16. Students ask for assignment extension because they lack time management skill *

Mark only one oval

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

17. During university, students should identify their career goals to increase employability *

Mark only one oval

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

18. During university, students should identify their passion to excel in their programme *

Mark only one oval

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mClyyvo0U32r6c_FlgKM2dFRvYd5M/edit

8/40

19. During university, students should identify their potentials to refine skills and talents *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

c. Exposure

FREQUENTLY USED TERMS

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Portfolio/e-portfolio: A collection of work samples and learning evidence made by students. An e-portfolio is a portfolio in an electronic form (via websites, PDF form or other apps)

c. Exposure

Definition: Exposure is a strategy used by graduates/students, lecturers, universities and industries to help students gain experience related to careers: through part-time jobs, participation, courses offered in university, engagement with alumni, university-industry engagement, and guidance and resources.

To what extent do you agree/disagree with the following statements?

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mCjYseootU32rKc_FlgKM2nFRvV8tM/edit

9/40

20. Students should actively participate in extra-curricular activities to gain experiences *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

21. University should offer courses that provide exposure to the latest software and technology that will be used in the job sector later *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

22. University should invite alumni to share their working experiences for the current students to gain exposure *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

23. University should organize industrial visit for students to gain exposure of real-life working experiences *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mCjYseootU32rKc_FlgKM2nFRvV8tM/edit

10/40

24. University should have a project-based course for students to gain exposure of real-life working experiences *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

25. Lecturers should have passion in delivering knowledge to produce a highly employable graduate *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

26. Lecturers with prior experience in the industry will be able to provide the exposure to students *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

27. Lecturers should provide exposure to the work process to be done later in the workforce *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mCjYseootU32rKc_FlgKM2nFRvV8tM/edit

11/40

28. Lecturers should provide additional resources for students to refer *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

d. Self-study and Study Group

FREQUENTLY USED TERMS

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Portfolio/e-portfolio: A collection of work samples and learning evidence made by students. An e-portfolio is a portfolio in an electronic form (via websites, PDF form or other apps)

d. Self-study and study group

Definition: Self-study and Study Group are strategies that graduates/students use during self-learning and individual revision or together with friends in study groups through finding the right circle, reading, note-taking, annotations (short notes on any topic/paragraph being studied) and sharing of knowledge/passion.

To what extent do you agree/disagree with the following statements?

29. Students should improve note-taking skill to remember what they had learned better *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mCjYseootU32rKc_FlgKM2nFRvV8tM/edit

12/40

30. Annotations (short notes) help students to remember what they had learned better *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

31. Students should share their knowledge and passion through social media *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

32. Sharing knowledge and passion improves students' communication skill *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

33. Sharing knowledge and passion improves students' presentation skill *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq7mCjYseotU32r6c_FlgKM2nFRvYd5M/edit

13/40

34. Sharing knowledge and passion helps students to remember what they learned *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

35. Students should start learning digital skills like graphic designing and video editing during university *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

36. It is easier for younger people like university students to learn digital skills compared to older people *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq7mCjYseotU32r6c_FlgKM2nFRvYd5M/edit

14/40

e. Career Development and Training

FREQUENTLY USED TERMS

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Education 4.0: Tools or technology used in learning to increase employment, remember the knowledge learned and apply the knowledge in career
Resume/video resume: A document containing a summary of a person's education, working experiences and skills. A video resume is a resume in the form of a video
Portfolio-e-portfolio: A collection of work samples and learning evidence made by students. An e-portfolio is a portfolio in an electronic form (via websites, PDF form or other apps)

e. Career Development and Training

Definition: Career Development and Training are strategies that graduates use to upskill (learn new skills) themselves or employers who provide training to help employees to upskill to match the current industrial needs.

To what extent do you agree/disagree with the following statements?

37. Training and career development programmes encourage employees to feel appreciated *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq7mCjYseotU32r6c_FlgKM2nFRvYd5M/edit

15/40

38. Besides salary, training and career development programmes encourage employees to stay loyal to the company *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

f. Reflective practice

FREQUENTLY USED TERMS

Metacognitive strategies: Strategies, steps, actions or methods used to increase employment, remember the knowledge learned and apply the knowledge in career
Graduate employability: The qualities and skills that graduates have which make them employable to employers
Learning sustainability: An effective learning process that helps students to remember the knowledge learned and apply the knowledge in their career
Education 4.0: Tools or technology used in learning to increase employment, remember the knowledge learned and apply the knowledge in career
Resume/video resume: A document containing a summary of a person's education, working experiences and skills. A video resume is a resume in the form of a video
Portfolio-e-portfolio: A collection of work samples and learning evidence made by students. An e-portfolio is a portfolio in an electronic form (via websites, PDF form or other apps)

f. Reflective practice

Definition: Reflective practice is a strategy that graduates and lecturers use after learning or working is done. Reflections are done to help remember what they have learned and apply the knowledge in their career.

To what extent do you agree/disagree with the following statements?

https://docs.google.com/forms/d/1-6ZL7Q4-Qq7mCjYseotU32r6c_FlgKM2nFRvYd5M/edit

16/40

39. Reflective practice (doing a reflection) helps the industry to identify the knowledge that graduates have gained during university *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

40. Reflective practice helps the industrial managers to report to their superior *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

41. Reflective practice helps students to remember what they have learned *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

42. Reflective practice helps students to improve on skills that they are lacking *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

43. Reflective practice helps the lecturers to improve future lessons *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

g. Teaching approaches

FREQUENTLY USED TERMS

Metacognitive strategies: Strategies, steps, actions or methods used to increase employment, remember the knowledge learned and apply the knowledge in career
Graduate employability: The qualities and skills that graduates have which make them employable to employers

Learning sustainability: An effective learning process that helps students to remember the knowledge learned and apply the knowledge in their career
Education 4.0: Tools or technology used in learning to increase employment, remember the knowledge learned and apply the knowledge in career

Resume/video resume: A document containing a summary of a person's education, working experiences and skills. A video resume is a resume in the form of a video

Portfolio/e-portfolio: A collection of work samples and learning evidence made by students. An e-portfolio is a portfolio in an electronic form (via websites, PDF form or other apps)

g. Teaching approaches

Definition: Teaching approaches are strategies that lecturers use to help students to remember what they have learned and become highly employable when they graduate later.

To what extent do you agree/disagree with the following statements?

44. Lecturers should include more real-life tasks and assessments to help students * remember what they had learned better

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

45. Lecturers should provide examples that are relatable to students so they will remember better *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

46. Hands-on activities are better than lectures *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

47. Hands-on activities provide an exposure of what graduates will face in their career later *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

48. Hands-on activities help students to improve problem-solving skill *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

Part 2: Education 4.0 Used in Metacognitive Strategies

FREQUENTLY USED TERMS

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Portfolio/e-portfolio: A collection of work samples and learning evidence made by students. An e-portfolio is a portfolio in an electronic form (via websites, PDF form or other apps)

Purpose of using Education 4.0

Definition: How Education 4.0 tools are used by graduates, lecturers and employers to help graduate employability and learning sustainability.

To what extent do you agree/disagree with the following statements?

49. Employers should utilise professional network sites like LinkedIn to seek new employees *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

50. Lecturers should expose students with the knowledge of software used in the workplace *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

51. Lecturers should expose students with Education 4.0 tools that students can use to build an e-portfolio *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

52. Exposure to software that are used in the workplace helps graduates to work efficiently *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

53. Graduates should utilise mobile app to build resume *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-QqB7mCUyresotU32rKc_FlgKM2dFRvYd8M/edit

21/40

55. Education 4.0 may act as a fasttrack for graduates to be called immediately for an interview *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

56. Education 4.0 gives an added value for graduates to be called for a job interview *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

57. E-portfolio helps employers to differentiate values between each candidate *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

58. Education 4.0 tools help to solve problems at the workplace *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-QqB7mCUyresotU32rKc_FlgKM2dFRvYd8M/edit

23/40

b. Advantages of Education 4.0 tools

FREQUENTLY USED TERMS

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b. Advantages of Education 4.0 tools

Definition: How Education 4.0 tools benefit graduates/students, lecturers and employers in terms of graduate employability and learning sustainability.

To what extent do you agree/disagree with the following statements?

54. With Education 4.0, employers are able to filter out candidates before selecting them for the job interview *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

59. Education 4.0 provides exposure to graduates to be prepared with the software that they will use later in their career *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

60. Education 4.0 encourages graduates to explore other technology tools to work better *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

61. Creating resume using an app saves a lot of time *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

62. During university, students should utilise Microsoft 365 because it is free *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-QqB7mCUyresotU32rKc_FlgKM2dFRvYd8M/edit

24/40

63. It is convenient to use Education 4.0 tools to submit assignments which then can be included in graduates' e-portfolio *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

64. Employers can seek employees easily using sites like LinkedIn without hiring a recruiter *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

65. Graduates should utilise Education 4.0 tools to generate income during university *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

66. By having an e-portfolio, students will produce the best work for their assignments *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mClyseootU32r6c_FlgKM2nFRvV8tM/edit

25/40

67. Resume-making apps provide customisation features *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

68. Reflective practice serves as notes for students to remember what they had learned *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

69. Learning online saves time for students because there is no commuting to class *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

70. There is vast knowledge available on Google which allows students to learn everything they are interested to learn *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mClyseootU32r6c_FlgKM2nFRvV8tM/edit

26/40

c. Disadvantages of Education 4.0 tools

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c. Disadvantages of Education 4.0 tools

Definition: The drawbacks of using Education 4.0 tools which affect graduates/students, lecturers and employers in terms of graduate employability and learning sustainability.

To what extent do you agree/disagree with the following statements?

71. Graduates will become inefficient in their work because they know they can just search everything online *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mClyseootU32r6c_FlgKM2nFRvV8tM/edit

27/40

72. Some Education 4.0 tools that graduates learn during university will become outdated by the time they join the workforce *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

73. There is no variety in resumes when graduates use templates from resume-making apps *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

74. With sites like LinkedIn, employers may waste time during hiring process due to bad candidates who faked details on their profile *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

75. Technology-dependent graduates may fail to work efficiently when there are limitations like poor internet connection *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mClyseootU32r6c_FlgKM2nFRvV8tM/edit

28/40

76. Freedom of speech on social media is affected because employers may do background checks before hiring *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

77. Miscommunication may occur more due to online meetings and trainings *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

78. Students may misunderstand some information because what they learn from social media is incomplete *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

79. With social media learning, students will get easily distracted from pop-up ads and unrelated contents *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

https://docs.google.com/forms/d/1-6ZL7Q4-Qq7mClyresotU32rhc_FlgKMDzFRvYd8M/edit

29/02

81. Independent *

Mark only one oval.

1 2 3 4 5
Not ☐ ☐ ☐ ☐ ☐ Extremely important

82. Hardworking *

Mark only one oval.

1 2 3 4 5
Not ☐ ☐ ☐ ☐ ☐ Extremely important

83. Confident *

Mark only one oval.

1 2 3 4 5
Not ☐ ☐ ☐ ☐ ☐ Extremely important

84. Passionate *

Mark only one oval.

1 2 3 4 5
Not ☐ ☐ ☐ ☐ ☐ Extremely important

https://docs.google.com/forms/d/1-6ZL7Q4-Qq7mClyresotU32rhc_FlgKMDzFRvYd8M/edit

31/00

Part 3: Skillsets

FREQUENTLY USED TERMS

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Personal Qualities

Likert scale:

1 - Not at all important

2 - Slightly important

3 - Moderately important

4 - Very important

5 - Extremely important

Listed below are 9 Personal Qualities that make up the skillsets of a graduate.

Please rate each quality for graduates to have to be highly employable.

80. Knowledgeable *

Mark only one oval.

1 2 3 4 5
Not ☐ ☐ ☐ ☐ ☐ Extremely important

https://docs.google.com/forms/d/1-6ZL7Q4-Qq7mClyresotU32rhc_FlgKMDzFRvYd8M/edit

30/00

85. Persevering (Tough) *

Mark only one oval.

1 2 3 4 5
Not ☐ ☐ ☐ ☐ ☐ Extremely important

86. Ethical *

Mark only one oval.

1 2 3 4 5
Not ☐ ☐ ☐ ☐ ☐ Extremely important

87. Respectful *

Mark only one oval.

1 2 3 4 5
Not ☐ ☐ ☐ ☐ ☐ Extremely important

88. Quality worker *

Mark only one oval.

1 2 3 4 5
Not ☐ ☐ ☐ ☐ ☐ Extremely important

https://docs.google.com/forms/d/1-6ZL7Q4-Qq7mClyresotU32rhc_FlgKMDzFRvYd8M/edit

32/00

b. Employability Skills

FREQUENTLY USED TERMS

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Employability Skills

Likert scale:

- 1 - Not at all important
- 2 - Slightly important
- 3 - Moderately important
- 4 - Very important
- 5 - Extremely important

Listed below are 4 Employability Skills that make up the skillsets of a graduate.

Please rate each skill for graduates to have to be highly employable.

89. Communication and presentation *

Mark only one oval.

1 2 3 4 5

Not ☐ ☐ ☐ ☐ ☐ Extremely important

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33/40

https://docs.google.com/forms/d/1-6ZL7Qd-Qqk7mClyseootU32rhc_FlgKM2nFRvVd8M/edit

34/40

c. Importance of Skillsets

FREQUENTLY USED TERMS

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Key to Likert Scale:

- 1 - Strongly Disagree
- 2 - Disagree
- 3 - Neutral
- 4 - Agree
- 5 - Strongly Agree

Importance of Skillsets

Definition: Importance of Skillsets describe why the skillset is important or not important according to graduates, lecturers and industrial experts.

To what extent do you agree/disagree with the following statements?

93. Working experience is more important than having a degree *

Mark only one oval.

1 2 3 4 5

Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

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35/40

https://docs.google.com/forms/d/1-6ZL7Qd-Qqk7mClyseootU32rhc_FlgKM2nFRvVd8M/edit

36/40

90. Critical and creative thinking *

Mark only one oval.

1 2 3 4 5

Not ☐ ☐ ☐ ☐ ☐ Extremely important

91. Digital *

Mark only one oval.

1 2 3 4 5

Not ☐ ☐ ☐ ☐ ☐ Extremely important

92. Teamwork *

Mark only one oval.

1 2 3 4 5

Not ☐ ☐ ☐ ☐ ☐ Extremely important

94. Problem-solving and creative thinking are not compulsory for all industries *

Mark only one oval.

1 2 3 4 5

Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

95. Being independent is important because industries provide minimal guidance *

Mark only one oval.

1 2 3 4 5

Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

96. Quality workers are important because time is money to the employers *

Mark only one oval.

1 2 3 4 5

Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

97. Graduates who are adaptable can adapt well even with low technology *

Mark only one oval.

1 2 3 4 5

Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

98. Low confidence will give a bad impression towards the company *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

99. Good communication helps to solve problems in the workplace *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

100. When employees are passionate, they will produce high quality work *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

Part 4: Current Practice

FREQUENTLY USED TERMS

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37/40

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mClyyeeotU32rhc_FlgKM2nFRvYd8M/edit

38/40

105. Graduates always update their resume for easier job application process later *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

106. Graduates always do a prior research on the company that called them for a job interview *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

Click Submit to end the survey.

Thank you so much for taking the time to answer this survey and assist me with my Ph.D research.

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Current Practices

Definition: Current practices at three levels which are industry, university and alumni

To what extent do you agree/disagree with the following practices?

101. Employers use sites like LinkedIn to find potential employees *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

102. E-portfolio alone is enough for employers to determine the candidates' abilities to work *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

103. Employers always call the referees to check the graduates' behaviour in the previous company/university *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

104. E-portfolio is made compulsory for all programmes in universities *

Mark only one oval.

1 2 3 4 5
Stro ☐ ☐ ☐ ☐ ☐ Strongly agree

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39/40

https://docs.google.com/forms/d/1-6ZL7Q4-Qq87mClyyeeotU32rhc_FlgKM2nFRvYd8M/edit

40/40

APPENDIX E

VERBATIM TRANSCRIPTION INFORMANT 1

Name: Expert 1

Place: Informant's house

Date: 18 May 2023, 8.05 p.m.

DU	R/I	Transcription
1	R	Okay, can you share a little bit about your current industry... as well as your... how long have you been in the industry... and so on.
2	I	Okay, aa I've been in architectural industry for 35 years... aa and we are doing a construction aa starting from designing, aa submission to authorities, getting all the approval from respective aa departments, aa awarding aa awarding the contract to the contractor, monitoring and supervision construction at site, and... follow up with the authority to get aa CCC which is Certificate of Certificate of Compliance aa before the building can be occupied, aa which was formerly known as Certificate of Fitness, CF. Aa and after that, monitoring defects liability period, aa to make sure contractor rectify all the work... done during their construction and also aa making sure other final account closed aa for the client.
3	R	Okay. So, aa all the...
4	I	Process.
5	R	Process that you mentioned just now, are these your roles...
6	I	Yeah.
7	R	Are all of these are your roles...
8	I	Yeah.
9	R	So, you need to- starting from the designing up until erm... up until aa CCC and what this is the final [Defect] oh defect, final defect. So, all of these are your roles aa can you share [Monitoring] what's your designation in your...
10	I	Project Architect.
11	R	Project Architect eh. Okay. So, erm how long have you been interviewing candidates?
12	I	30 years.
13	R	30 years? So, you have been interviewing for new architects or ... assistant architect...
14	I	Various.
15	R	Various. So, can you share what's your hiring process? From the beginning... until erm.. ha.
16	I	Okay, when when we have projects, which aa which require manpower, aa more than what we have currently in our office, we will... advertise in Mudah.com, aa in JobStreet, aa in the media, aa Facebook aa of the vacancy and... aa you know, in our advertisement, we will highlight how many years experience we want, and the range of salary that we are willing to pay, aa and... the aa certificate requirement whether Diploma in Architecture, whether aa a Degree in Architecture, or even aa a <i>Sijil</i> stert-cert ha. It can be a- you know from from Degree, aa Diploma and as as well as a certificate. If the candidate possess all these, of course it will be a bonus to us. You know, but aa you know, aa sometimes a Diploma... who has- a Diploma holder who has experience aa going through the process of what an architecture firm should be doing, that is a bonus to us as well.
17	R	So based on your answer, are you saying experience is more superior than their...
18	I	Oh yes, definitely. Definitely.

19	R	So let's say, if they only have certificate.. but they have five years of experience [Better] you will choose them?
20	I	Yes, better than erm erm aa people having Diploma but do not know what they are doing or they don't understand what their- they are supposed to do.
21	R	Okay, so how do you decide whether aa a graduate is employable or not? I mean, what makes them...
22	I	Their skill.
23	R	Skills? Can you share the examples of skills that you are looking for?
24	I	We we you, we want to see their portfolio, what they have done during their study, aa and we want to see the depths, you know, aa because in architecture, you can design beautiful building, but it doesn't work or it will be costly. Aa aa, at the end, the client they don't have money, you know to spend, and it will be a wasteful effort... So, aa... that means someone who who... who dream based on reality, something that works, not something that that that is not workable. You know, you can dream the sky, but if it cannot be built, then we are wasting our time. And time is money.
25	R	Hm hm. Okay. So, why do you say that, why do you say time is money?
26	I	 We have to pay, every month, how much is their salary. The longer they take the more we are paying, yet the production? What kind of production, the result... that they are giving us? If we have only three months in design, and when we present it to our client, they are happy... you know whether financially... design wise... workability and functional of the building, workable, then it's better than taking six months, how much whe- the company has to spend, to pay them just to get the design approved by the client.
27	R	Okay, so meaning to say, you are looking for... [Skill] candidates who are [Experienced] efficient in their time management?
28	I	Exactly. Efficient, skill, knowledge, experience aa apa, creative, innovative...
29	R	Okay, so erm out of the candidates that you have interviewed, what did that... they showcase that make them stand out from the rest? So meaning you have interviewed a lot <i>kan</i> for aa <i>apa</i> these past 30 years? So... do you have any candidate that pop up in your mind, that really... stand out stood out from the rest and aa you feel like every candidate should be like this, should be like him or her? [Yeah. Yeah] So what did he or she showcase that make you... think of him right now? Or her.
30	I	They are very, very creative. Aa..
31	R	What what do you mean by "very creative"? Like, is it the design that they have in their portfolio?
32	I	Yeah, design. The skill. Aa <i>boleh harap apa? Boleh harap?</i>
33	R	Dependable.
34	I	Yeah. Aa...
35	R	How do you know that they are dependable? They haven't started working.
36	I	We have to test.
37	R	So meaning?
38	I	We gave them three months probation, [Okay]. We have to test. So, if they perfo- I mean, if they do not perform, aa they will be aa we extend the probation period. To see whether there will be an improvement. Aa if there is no improvement, that means we do not aa <i>apa? Dia</i> under probation, that mean <i>kita tak tak</i> continue <i>lah.</i> [<i>Tak</i> continue].
39	R	So, during the probation, do you provide.. like training or guidance, so that-
40	I	We don't. Aa we advise. We highlight their flaws, their weaknesses. So, if there is no improvement, then we let them go.
41	R	Okay. So, just now, when when you mentioned about the portfolio, erm what are examples of aa evidence that they showcase in their portfolio?
42	I	So, in the portfolio, there must be aa comprehensive <i>apa maksudnya pendedahan</i> , the exposure of the architectural process, aa aa from designing, <i>maksudnya dalam</i> portfolio <i>tu, mesti ada lukisan-lukisan yang menunjukkan</i> they are exposed and they have been... they have been aa <i>apa nama?</i> Aa exercise <i>lah.</i> [Okay.] <i>Dekat, masa belajar tu, dia orang ni terdedah dah, dah diberi pendedahan aa dah belajar daripada peringkat</i> design, aa design, the design process <i>lah.</i> They must be able to aa perform at every stage <i>tadi. Maksudnya, daripada</i> design, <i>daripada</i> preparing drawing, working drawing, submission drawing..... aa contract drawing, construction drawing ha. So

		<i>dalam portfolio tu mesti menunjukkan that they have undergone all these during aa what whatever courses they take, the course tu mesti complete process macam tu.</i>
43	R	Okay, so aa all of these they were shown in the candidate that were- that stood out?
44	I	That means sometimes, <i>susah lah nak dapat semua ni ada pendedahan. Aa tapi the most kita akan select yang paling banyak terdedah pada proses daripada A ke Z ni.</i> [Okay] <i>Maksudnya dia dah terdedah dia dah tau lah aa apa yang expected kan. Maksudnya bukan kita nak ajar. They come to work, bukannya nak jalan latihan apa praktikal. Indus- [Hmm] Ha bukan. Kita nak hire untuk work. So they must know apa what they're supposed to do. Kita hanya takat tegur untuk nak improve kan, tapi bukan kita nak ngajar dia orang aa tak. They are supposed to know they're supposed to learn masa Degree or Diploma dia orang.</i>
45	R	Hm. Okay, so fast learner? Are you saying... or they're already- they already learned-
46	I	They are exposed to the process of architecture <i>punya apa aa firm punya requirement. They are already exposed. Maksudnya, their courses should aa menjurus aa guide aa manoeuvre them ha tu, ke arah dalam reality, this is what they're supposed to know. Bukan amik course-course yang irrelevant tu kita tak mau.</i> [Okay]. <i>Maksudnya, dia mesti daripada because macam architecture building dia banyak aa you know, housing, commercial, hotel, institution, so dia orang mesti terdedah design process for all these different type. [Hmm] Ha sebab dia punya aa dia punya difficulty, dia punya scope dia berbeza. You design rumah berbanding dengan you design commercial building. Aa requirement dia berbeza. Aa ha. So, dalam dalam kita nak tengoklah, masa dia tunjuk portfolio tu ada dak perbezaan building types, that means they have been exposed to residential, they've been exposed to commercial. They've been exposed to institutional. Atau pun bangunan-bangunan traditional, cultural ha...</i>
47	R	Okay. Okay. So, aa what do you think are some of the attributes, or skills, or competencies, that you consider important among graduates? So for example, aa when when you told me this now, you you are talking about efficient, right? Efficient, creative, [innovative], innovative and then aa fast learner meaning when they when they when they [boleh adapt] when they- yes, adaptable and fast learner when they go into the industry, they don't waste their time learning new things, they already know what they're supposed to do.
48	I	<i>Tapi kalau tak tau pun kalau bertanya, kalau dia rajin, dia pandai search, ha maksudnya dia dia bukan bukan tunggu orang spoon-feed.</i> [Okay] <i>Ha kita..maksudnya dia haa innovative.</i>
49	R	Aa kita panggil apa ni? Aa dia ada initiative nak belajar.
50	I	Ha. Yeah. That means dia ada- bukan kita tau semua benda. Sebab sekarang ni, dalam Google, you boleh Google anything. [Betul]. Kan? Maksudnya, you can-
51	R	Self directed learner, betul tak? Meaning they they take the initiative to learn-
52	I	<i>Dia mesti ada ha dia mesti ada tu. Dia tak tunggu orang comment, dia tak tunggu orang bagi feedback, tak. Dia sendiri aa itu lah dia dia ada effort. Ha dia usaha. Lepas tu, dia tak berkira time. Kan macam kita ada apa aa office hour punya time. Tapi dia sanggup stay back semata-mata aa nak give good result, aa nak explore nak give the best solution. Ha tu.</i>
53	R	So out of the attributes that you mentioned earlier, creative, innovative, adaptable semua tu kan, can you rank... from the most important, meaning to say out of the candidates, mesti ada ni to the list?
54	I	Hardworking.
55	R	Hardworking. Okay, so hardworking would be the most erm...
56	I	And then passion lah. You buat dengan passion, kalau you buat lepas batuk di tangga, tak mau lah. Kan maksudnya orang tu mesti ada passion dia, dia macam engrossed bila dia buat tu, dia, lain kan kalau orang tu buat kerja dengan sungguh-sungguh dengan orang buat kerja lepas batuk di tangga. Tu.
57	R	Okay, so hard-working will be the most important and then passion and then aa yang bawah-bawah tu apa dia? Apa yang macam aa [Creative]. Okay, and then?
58	I	<i>Tulah apa tu, rajin rajin search lah. Maksudnya dia ada innovative tu dia ada.</i> [Okay] <i>Dia tak dia tak tunggu orang bagi feedback. Dia tak tunggu orang. Dia ada initiative. Ha.</i>
59	R	Okay. Aa what about skills macam critical thinking ke problem-solving atau pun- ke

		<i>yang tu-</i>
60	I	<i>Memang memang architecture is problem solving. People I mean client they have a land, they give you, you're supposed to solve for them. Aa they have requirements I mean, they have a land, contohnya okay dia orang nak buat sekolah. So dia bagi sekolah tu 30 bilik darjah, ha you kena, you kena solve you kena...</i>
61	R	<i>Bersama-sama solve? So is it like all the staffs brainstorm together, atau pun siapa yang pegang project tu dia yang kena fikir?</i>
62	I	<i>Yeah. Siapa yang pegang project tu je lah.</i>
63	R	<i>And then dia kena present dia punya proposal to dekat boss [Yeah yeah]. Kalau boss setuju, [Hm hm] boss ni lah... okay. Erm.. So can you elaborate or can you share why why do you say hardworking is the most important? And then what's the least, the least important? Ada ke tak ada ke, tak kisah. Yang tadi most important is hardworking, passion kan. Kalau the least important attribute yang you don't really mind is it their degree? Dia punya...</i>
64	I	<i>Ha, sijil tu tak penting. Betul. [Okay]. Dia hanya yang tu aa gaji lah.</i>
65	R	<i>Kalau dia tak ada? Macam like dia SPM je. Tak apa?</i>
66	I	<i>Tapi boleh buat kerja. Boleh.</i>
67	R	<i>Tak apa? Boleh? Walaupun dia tak ada-</i>
68	I	<i>Tapi dia kena prove lah tunjuk.</i>
69	R	<i>Tunjuk melalui portfolio tadi?</i>
70	I	<i>Yeah. Dia tunjuk walaupun dia SPM, tapi dia boleh buat semua-semua, pengalaman dia, dia buktikan, boleh.</i>
71	R	<i>So, kalau macam ni aa gaji mereka macam mana? Is it depending on...</i>
72	I	<i>On number of experience and the product yang dia orang produce.</i>
73	R	<i>So maksudnya in your in your in your industry, I mean, in your company, you will consider experience juga lah? [Betul] Bukan sahaja consider the... [qualification] qualification. [Yeah.] All right. Okay, so erm... out of the candi- Okay, I think I've asked you about this just now. So, did they- graduates, did they use Education 4.0 tools for example, like a portfolio that you said just now is it printed or E-portfolio, online?</i>
74	I	<i>Printed. Printed.</i>
75	R	<i>Did they give you a link and then you can view before they come for interview? [No. No]</i>
76	I	<i>We want printed because we don't have time. Dalam virtual tu tak mau. Kita nak yang printed.</i>
77	R	<i>So, did they have like e-portfolio tak ada kan? Erm video resume? Aa e-certificates..what ever [No. No.]</i>
78	I	<i>Of course lah masa kita iklan tu, dia submit aa email lah. Tapi bila datang interview bawa printed.</i>
79	R	<i>Alright okay. So before they come to the interview, how do you vet? Amik dia ni, amik dia. You look for what in their e-portfolio?</i>
80	I	<i>They they must they must submit. That means bila dia apply tu, dia mesti hantar dia punya resume, kat situ ada tulis kan dia punya latar belakang, experience berapa tahun, dia habis graduate tahun berapa, dia dah experience berapa lama. So attached kita nak tengok portfolio dia ada apa. So kalau portfolio dia tu aa apa kita nak tadi, ada di dalam tu, we call them. Kalau tak ada, aa dia tak tak ada lah. Maksudnya benda yang kita nak dalam portfolio dia tak ada, dia tak mampu buat, kita tak panggil.</i>
81	R	<i>Okay. So do you do you erm meaning they send their portfolio tu through email? [Yeah] Or do they give a link? [email] Email? So what are the kind of things that they send? Macam images ke? Images of their design?</i>
82	I	<i>Aa report lah. Macam kalau macam for example, your report aa your thesis thesis your last semester. Contohnya dalam thesis tu, contohnya you design museum. So we want to see the plan of the museum. [Okaay]. Aa apa yang kerja dia orang buat. We want to see apa yang kerja dia orang buat. So from that, from that aa kita punya sebab architecture kita boleh tengok lah sebab dia kena buat drawing. [Hmm] Tapi drawing tu aa of course lah, that means plan aa maklumat apa yang ada. That means kita tau dia ni knowledgeable ke tidak, kan? Dia ni teliti ke tidak. Aa dia ni detailed ke tidak. Kan sekadar, macam tadi lah, buat tak sungguh-sungguh, sekadar lulus saja. Ha kita tau lah daripada drawing tu.</i>

83	R	Hmm. So memang aa tak ada ke yang aa e-portfolio ke... video resume, e-certificates atau pun any...
84	I	Tak tak. They send email tu e (electronic) lah. Dia send. Sebelum kita panggil tu dalam email tu we go through lah. Tapi so far kita tak ada aa apa, video resume tu tak ada. Memang that means PDF format lah, we can scroll and see... and then daripada situ kita dah tau lah, kita shortlist, and then kita call bila dia datang interview mesti bawa printed. We don't want to see in the laptop. No.
85	R	Okay. So aa on eh- after the interview, if you want them, do you have like a second stage interview ke atau do you...
86	I	We just call.
87	R	You just call them? So do they need to showcase their skills? Contohnya macam nak kena buat AutoCAD ke.. Yang tu, yeah yang tu untuk Diploma and Sijil, yes. Okay, why?
88	I	Sebelum kita interview, kita suruh dia, kita bagi dia duduk buat dulu satu jam.
89	R	Why is it for Diploma and Sijil, they need to sh- prove that they can use the..
90	I	Sebab yang tu dia drawing dia special. Dia aa dia drawing dia special. Macam mana eh.. Macam you kena tau kalau macam Degree tu, dia banyak design, contract management. Dia tak banyak drawing submission drawing. Drawing submission tu skill. So kita nak tengok skill dia. Aa sebab bila you buat drawing tu dia kena aa daripada plan, apa maklumat yang perlu masukkan dalam plan? Tapi macam, kalau architect, dia sketch saja.
91	R	Architect maksudnya Degree?
92	I	Ha.
93	R	Dia sketch aa atas kertas je? And then?..
94	I	Dia sketch atas kertas and then dia bagi kat draughtsman yang ada Diploma tadi lah.
95	R	Oh, draughtsman yang akan buat drawing? So yang tu dia application yang AutoCAD tu? So yang tu bila dia datang dia kena..
96	I	Buat dulu. Kita bagi dia one hour, kita bagi dia task. Ada plan, kita tunjuk line kita potong. Dia kena draw section tempat kita potong.
97	R	Oh... okay so maksudnya dia macam mirror image ke atau..
98	I	Tak dia kena kerat bangunan tu.
99	R	So dia kena figure out sendiri apa yang hilang tu?
100	I	Bukaaan. Aa kita ada plan. Kita ada plan. (Takes a pen and starts drawing on a piece of paper) Katakan ini ada bilik, ni ada tangga. Lepas kita tunjuk, kerat. So dia kena kerat bangunan tu. Dia kena naikan dinding, dia kena naikan roof. Dia kena naikan [Ohhh...]. Dia kena tunjuk ni ada tangga naik. Dia kena tunjuk railing, dia kena tau semua ni. Ni bumbung dia kena tunjuk.
101	R	Dia kena buat every room ke?
102	I	Kita nak tengok dalam masa sejam, apa benda yang dia boleh buat? [Oh okay okay] Haa. That means, daripada situ, kita mesti tau lah dia punya, pandai ke tak, cekap ke tak, aa dia creative ke dak? [Hmm] sebab kita dah bagi dah pandangan.
103	R	Pandangan atas? Eh pandangan depan?
104	I	Pandangan depan rumah dia macam ni. (Points at a drawing). Kita kerat dalam rumah dia macam mana? [Ohh..] Kita dah bagi dah benda ni. So kalau dia pandai, dia hanya dia tebuk. Dia ada dah outline bangunan ni. Dia tebuk masukkan dalam dinding je, Nampak tak? You kena pandai lah, itu yang kita nak tengok.
105	R	All right. Okay. So so just know you said they use email right, and then they send PDF? Aa does this help help them for employability? Meaning to say does this help them does this help you... to find new employees? [Yeah. Yeah.] Yeah? Okay. Erm aa what else that you think that they should practice to enhance aaa so just now you said about hardworking, passionate, creative, initiati- all these..
106	I	Tak. Dalam portfolio dia orang tu mesti.. mesti.. dia orang mesti tunjuk.. portfolio dia orang tu mesti bagus lah.
107	R	What what do you mean by "bagus"?
108	I	Macam tadi lah. Mesti ada maklumat yang kita look for.
109	R	Okay. What are the information that you look for?
110	I	That means drawing dia tu detailed, drawing dia tu variety, dia ada exposure to different type bangunan. [Hmm]. Kan. Maksudnya dia bukan saja buat rumah, tetapi

		<i>aa dia bukan saja buat rumah dua tingkat, dia buat condo, dalam drawing-drawing dia tu semua tu dia dah ada pendedahan. So that means drawing dia tu biar banyak, dia buat macam-macam. Impress the client lah.</i>
111	R	Hmm.
112	I	Knowledge lah. [Knowledgable] <i>Kan macam macam you lah. You pergi interview you kata you boleh buat video editing nampak tak? Bila you ada ee banyaknya skill you. Seronok lah client nak amik you. Ha. So sama jugak macam kat architecture, that means dia bukan saja pandai AutoCAD, dia mesti pandai pakai Adobe, dia mesti pandai pakai SketchUp, dia mesti pandai pakai V-Ray. Dia mesti pakai.. benda-benda yang dia boleh project bangunan tu 3D, of course this is all apa, benda yang jadi valuable asset to you (graduates).</i>
113	R	Hmmm.
114	I	<i>Dalam architecture lah. Maksudnya AutoCAD is a must. After AutoCAD, you mesti tau Adobe. You nak kena color for presentation, put up the sky, background bla bla semua tu kan.</i>
115	R	Okay. <i>Apa tadi what was the application that you said just now?</i>
116	I	Adobe. AutoCAD.
117	R	And then?
118	I	V-Ray.
119	R	V-Ray. What's V-Ray?
120	I	Rendering.
121	R	Rendering for 3D? [Ha]. So meaning from the drawing <i>tu tukar jadi 3D?</i>
122	I	<i>Aa SketchUp. Buat kat SketchUp. You buat 3D Max.. ha all these lah. Ini.. maksudnya kalau ada tu is a plus lah. Ha.. tapi..</i>
123	R	<i>Ada ke candidate yang tak ada ni?</i>
124	I	Ada. Ada.
125	R	<i>Walaupun dia Degree?</i>
126	I	<i>Ada tapi tadi lah ada.. aa yang self-learner. Dia belajar sendiri.</i>
127	R	<i>Walaupun kat university dia tak belajar, lecturer tak ajar, tapi dia...</i>
128	I	<i>Tapi saya rasa sekarang dah belajar (at university). Time saya dulu mungkin tak lah.</i>
129	R	Okay.
130	I	<i>Sekarang dah ada pendedahan. Tapi sama ada dia orang ni cekap dengan tak kan. Benda ni kalau you practice kan, atau sesetengah orang dia explore sendiri. Kan, maksudnya dia cari kaedah macam mana nak render benda ni jadi mudah.. Kan, macam mana nak aa dia creative lah. Ataupun macam you nak draw dome. It's quite susah, sebab dia melengkung semua, tapi dia pandai pikir macam mana nak buat cara mudah, kan. Dia dia dia...dia creative lah. Maksudnya bukan bukan straightforward, orang kata "A", "A". Tak reti nak cari jalan other ways, kan? Ha. Katakan you belajar macam ni, macam tu ja. You tak boleh fikir cara lain nak solve problem ni. Ha.</i>
131	R	So how do you know? I mean, because you want graduates like this, and you only meet them during the interview [Susah lah].
132	I	<i>Oh dalam resume dia-</i>
133	R	<i>Semua tu memang boleh showcase ke dalam portfolio? Dia boleh buat dome lah apa semua-</i>
134	I	Boleh. Boleh.
135	R	<i>Sebab because sometimes during during interview, they say they can do it, they can do it, but when they enter..</i>
136	I	<i>Oh tak apa, kita take their word for it. Kalau dia tipu akan makan diri dia lah.</i>
137	R	<i>Yang tadi tu lah, yang probation tu?</i>
138	I	<i>Ha, kalau dia tipu, dia kata dia boleh buat, tapi bila dia masuk dia tak boleh buat, Takat tu lah probation, meaning kita takkan..</i>
139	R	So meaning after six months, <i>kalau still tak boleh buat jugak, then terminate lah, tak continue the contract eh? [Hm hm] So it will be six months wasted for you lah? [Yeah]. You are paying for six months..</i>
140	I	Yeah. <i>Nak buat macam mana.</i>
141	R	(Laughs) So.. aa do you have suggestion how this can be avoided? Meaning to say you as the.. from the industry, you don't want to waste six months. You want good

		graduates aa right from the start. Meaning maybe it's something that the.. university can do or something that the students themselves can do..
142	I	<i>Kadang-kadang dia orang ni masuk architecture because they were being offered-</i>
143	R	So in the first place, they need to have this <i>lah kan?</i> Passionate <i>ni?</i>
144	I	Yesss. You must love your job. <i>Macam orang amik Medic lah. Kan</i> at the end, you <i>dapat</i> Degree you <i>tapi</i> you're not happy with your work.
145	R	And then it's reflected in your career, [<i>Betul</i>] <i>bila..</i> they're not happy with what they're doing [<i>Exactly</i>].
146	I	So they must have passion in whatever they do. They love doing it. <i>Sebab ramai saja dia dapat sebab dia dapat masuk course tu, terpaksa sebab dia nak masuk institusi awam. Kan? Kalau dia nak masuk course dia, dia nak kena masuk private. Private bayar rate dia lain. Kalau institusi awam, kadar fees murah.</i>
147	R	So.. what's your point of view in terms of.. [to improve?] Yeah to improve. Is it like the government, they need to do something? Meaning to say don't offer something that students don't want or [<i>Tak. Tak.</i>] Or.. how? Because they apply in UPU right? And then whatever they are applying, they apply what they want. [<i>Hm</i>] But sometimes they are offered [<i>Sometimes dia dapat something else. Yeah</i>]. There are something that..
148	I	<i>Tak kan yang tu masuk ke dalam U (university), tak kan?</i>
149	R	Of course I mean, not here but this is aa I'm interviewing for in depth information. So it can be a new finding, not necessarily from aa just from the question. I want to know in depth.. meaning to say maybe erm maybe our KPM, sorry MOHE, MOHE, Ministry of Higher Education. Maybe we can do something, right? So that they.. they still get their Degree but something that they love. Do you have any opinion on that?
150	I	 <i>Tak, susah lah. Kadang-kadang</i> erm.. sometimes they may not like it aa...
151	R	Can they develop it (passion)?
152	I	Haaa... <i>Tapi kalau aa dia bergantung jugak pada orang. Dia tak suka tapi bila dia terpaksa. Aa ataupun environment.. tak tahulah, tapi chances sikitlah. Selalunya you takkan further lah dalam bidang tu.</i>
153	R	Unless.. when you said just now, they don't have other choice, they cannot go to private because it's.. it's expensive. So, they still..
154	I	<i>Dia dia ambik tapi.. bila pergi to outside practice, dia orang just jumping from another firm to one firm.</i>
155	R	Okay. So, erm how well did university prepares graduates for the job market? Do you think you know universities are doing a good job? Or do you think they are just aa treating universities like factories? You know, aa universities are some people they call it, universities are selling.. commodities.
156	I	<i>Saya rasa benda tu ada, cuma.. cikgu yang mengajar tu.</i>
157	R	The lecturers?
158	I	<i>Dari segi requirement, saya rasa okay. Cuma.. cikgu yang mengajar tu, budak-budak.. paham ke tidak. Bukan semua cikgu bagus kan? Haa..</i>
159	R	So meaning, in the university, the lecturers <i>pun sama lah?</i> [<i>Ha</i>] <i>Kena ada jugak ni, hardworking, passionate, semua ni?</i>
160	I	Hmmmm.
161	R	<i>Kena ada</i> , then only the students will become what they are being taught, <i>macam tu jugak lah dia akan..</i>
162	I	<i>Ha melalui tauladan.</i>
163	R	<i>Maksudnya they are moulded.. kan? Acuan, macam mana dia di acu tu.. Macam mana dia jadi, daripada acuan, siapa yang mengacu dia tu. Betul tak? Are you saying that?</i>
164	I	That means <i>cikgu dia tu pun cikgu yang experienced, cikgu yang ada passion, yang betul-betul nak didik anak murid dia. Maksudnya, lecturer dia tu pun bukan sekadar sekadar nak pergi kerja, makan gaji</i> , at the end, <i>aku tak peduli kau orang faham ke.. tak faham, nampak tak?</i>
165	R	Okay, all right. So, aa besides that, besides the lecturers themselves, they need to be passionate. [<i>Hm</i>]. They need to be experienced [<i>Hm</i>] so that they can... so that students can learn by example. Besides that, what do you think are other..
166	I	<i>Lecturer pun mesti practicing architect. Baru dia tau..</i>
167	R	Practising meaning, they have been in the industry before they become a lecturer?
168	I	Exactly. <i>Dia bukan- Kan setengah lecturer, bila dia dah dapat Degree, dia sambung</i>

		Master, <i>pastu dia sambung PhD, pastu mengajar. Dia tak practice. Ha. So banyak banyaklah, macam especially erm.. contract matter.. kan benda dalam contract tapi reality.. kan. Dia bukan straightforward macam dalam buku tu. Ada benda yang ada loophole. Ada benda yang tak spell out dalam contract, tapi you dah tersilap. You're not supposed to buat macam tu, contohnya kan.</i>
169	R	What about in terms of erm technology ke. Do you think.. university should erm should teach lah-
170	I	<i>Tadi lah.</i>
171	R	<i>Yang tadi tu lah? Application yang AutoCAD semua ni. Sebab ada ada university yang masih tak ajar ke? Ataupun dia ajar tapi tak lengkap?</i>
172	I	<i>Ha, basic je. Sebab software ni pun mahal.</i>
173	R	<i>I see.</i>
174	I	<i>Kalau university, mesti pakai original. Tapi sekarang, ciplak tak boleh dah. Dia orang dah pandai. Macam dulu, ada free trial kan. Sekarang tak ada dah. All these, tak ada dah. You kena beli software tu original.</i>
175	R	<i>Sorang satu ke, atau they can share ke..</i>
176	I	<i>Kalau university, maybe kat computer lab dia tu saja lah kan? Tapi saya tak tau lah, budak-budak boleh ke install masuk laptop dia? Hmm. Tak tau.</i>
177	R	<i>Sometimes, ada certain certain, dia ada option free. Ada certain apps lah, contoh macam design apps, kalau kita tak ada Adobe, kita boleh pakai Canva. Tapi macam SketchUp, I'm not sure kalau ada yang.. something macam SketchUp, tapi online..</i>
178	I	<i>Yang you boleh buat rendering nanti nampak sebiji macam dia render air tu, nampak macam air. [Hmm]. Kan. Macam ada pool, rumah tu ada pool contohnya. Ha.. macam rumah tu pakai marble, berkilat. Bila you render, berkilat nampak lantai tu. Dia.. ya lah, 3D Max boleh buat. SketchUp tak boleh. Dia tak tak se-fine. Halus.</i>
179	R	<i>Okay. So, just now you said the lecturers they need to be experienced, they need to be passionate and all that. So.. in terms of aa exposure, how can university provide exposure to the students? Because you said, when you are looking for.. graduates, you want them to be experienced, right? So how can they be- How can they have experience..</i>
180	I	<i>Latihan industri tak boleh empat bulan, mesti enam bulan.</i>
181	R	<i>Enam bulan? Is it long enough for them to learn something?</i>
182	I	<i>Kalau dia orang rajin.</i>
183	R	<i>Minimum six months lah?</i>
184	I	<i>Yeah. Four months is too short. Because of the first month to dia baru nak belajar to adapt to the office punya situation, office punya culture, office punya setup.</i>
185	R	<i>So meaning..</i>
186	I	<i>Banyak benda, banyak benda yang dia perlu belajar</i>
187	R	<i>..internship should be longer than six months? [Hm]. Erm.. And then what else can.. I mean, what else do you think could be improved? So that aa when they when- after they graduate, they have the experience needed? They have the exposure needed?</i>
188	I	<i>What?</i>
189	R	<i>What else? So you said just now university should prepare students in terms of.. high-more high-quality lecturers. And then,.. maybe.. they should change from four months to six months, internship in in the industry, right? So what about, do you have any candidates who their internship is in the middle of the in the middle of their study? Kat tengah-tengah, dia bukan kat hujung? Dia macam some universities kan they have..</i>
190	I	<i>Oh tak, dia mesti kat hujung.</i>
191	R	<i>Why do you say that?</i>
192	I	<i>Kalau kalau kat tengah, dia tak habis belajar banyak benda. Biar dia habis belajar dulu, baru dia buat latihan industri. Baru dia tahu, sebenarnya dia patut macam ni. Kan? Macam maksudnya.. dia dah belajar semua. Tetapi, bila dia pergi in real situation, baru dia tau, dia lack kat sini, dia lemah kat mana. Bila dia ada peluang, dia dapat kerja betul-betul, dia dah ha.. Dia dah belajar semua benda. Maksudnya, four years tu, syllabus dia saya rasa dah okay. Cuma cikgu tu aa..... task. Maksudnya, matlamat course tu dah ada, cuma, cikgu tu nak bagi projek apa, kan? Haa..</i>
193	R	<i>Hmmm.</i>
194	I	<i>Cikgu tu punya knowledge pun, adakah selari dengan practicing- apa yang practiced</i>

		<i>kat luar..Lecturer tu punya knowledge, kaedah, pendekatan lecturer tu. So sebenarnya lecturer yang penting. Saya rasa silibus dah okey.</i>
195	R	<i>Because you said just now, internship should be at the end. And what if dia lupa apa yang dia belajar dulu tu? Dah habis exam lupa apa yang dia belajar first year, second year, third year. Ataupun dia pandai on paper, theory tapi bila masuk industri dia..</i>
196	I	<i>Oh tak. Architecture bukan macam tu. Dia bukan macam Matematik, bukan Kimia. Dia Arts.</i>
197	R	<i>Meaning?</i>
198	I	<i>Dia kreatif. Dia bukan ada jawapan 123. Tak. You boleh buat anything. Dia tak ada spesifik answer. Cuma aa macam benda asas maksudnya macam.. pintu. You tak boleh kurang daripada dua, dua meter tinggi. You kena tau lah, kan. Itu basic. Basic guideline tu you kena tahu. Maksudnya, tangga. Tempat pijak dia tu, mesti tak boleh kurang daripada 255 mm wide. Sebab nanti orang pijak, dia akan jatuh terlentang. Ha, benda tu you kena tau. Building lah building. You kena tau. Railing, mesti tak boleh kurang daripada 1 meter height, kalau tak nanti orang jatuh. Ataupun gap antara railing dia tak boleh big, nanti budak kecil boleh terperlus, apa?</i>
199	R	<i>Termasuk dalam..</i>
200	I	<i>Ha. Benda-benda tu you kena tahu. That means dalam.. Macam architecture, dia ada banyak. Dia ada buat detail drawing. So maksudnya aa cikgu kena bagi latihan, dia orang ni buat tangga. Tangga, macam-macam tangga. Ada tangga spiral, ada scissors staircase, ada yang naik straight, tu ada ramp ada. Ada railing ada macam-macam railing. Ada railing kayu. Dia orang ni, kena bagi pendedahan kat dia orang. Macam mana nak buat detail-detail ni. Tapi macam saya cakaplah, kalau budak ni rajin, benda ni ada je kat dalam Google. Kan. [Hmm]. Tapi you kena extract, bagi dia orang exposed. Ada, you taip je, staircase detail. You nak ornament. You nak glass railing. Ha macam mana nak buat, you kena draw. Macam mana, nanti contractor, dia tengok drawing tu, dia boleh buat. So glass tu, adakah glass sekeping tanpa support? Adakah ha..hm.. Jadi lecturer tadi itulah kena bagi latihan yang supaya budak-budak ni cari maklumat tu.</i>
201	R	<i>Maksudnya, the kind of assessments that they are giving the students should should reflect whatever it is being practised outside.. [Yes]. Then, lecturer tu pun dia kena tau what's trending, apa yang regulation cakap ukuran semua lecturer kena up-to-date lah benda ni. [Ya]</i>
202	I	<i>Tak. Tu satu. Satu lagi, lecturer kena sensitive to the environmental.. Maksudnya kita Malaysia kita tak boleh syok, orang buat glass building, kita buat glass building. Tapi sebenarnya, it doesn't work. Kat Malaysia negara panas. So kita kena ada sensitivity to environmental apa? Sustainable..</i>
203	R	<i>Sustainability..</i>
204	I	<i>Eco eco, maksudnya benda-benda ni lah kan. You bukan syok sendiri ikut trend, orang buat glass building, you nak buat glass building.</i>
205	R	<i>Kenapa tak boleh buat glass building?</i>
206	I	<i>Sebab kita panas. Glass akan absorb heat. [Oh..] So especially matahari naik dan matahari jatuh. So whatever building you design, menghadap matahari naik dan matahari jatuh, you minimize kan opening. You minimize kan glass.</i>
207	R	<i>Tingkap? Boleh ada tingkap?</i>
208	I	<i>Boleh ada tingkap. You kena ada overhang. Large overhang. Supaya boleh shade. Tingkap tu dia tak exposed directly [Oh...] Jangan buat tingkat macam tu, no, no. Bila you buat glass wall, total 100 percent heat akan masuk dalam building. How much aircond you nak kena cool the building? Ha, so, you kena energy-efficient. Itulah you bukan, maksudnya, bila you design, banyak benda you kena fikir. Function. Aa...</i>
209	R	<i>Aesthetic pun kena fikir juga.</i>
210	I	<i>Ha. Tapi kadang-kadang benda tu basic ja. Box. Tapi material dia? Ha.. Maksudnya kena belajarlal.</i>
211	R	<i>All of these should be given exposure lah during the university?</i>
212	I	<i>Time belajar. That means, bila dia orang keluar, dia orang dah tahu. Dia orang dah tahu bila nak guna kayu, bila nak guna batu, bila nak guna bricks, bila nak guna marble. They know. Kita tak perlu ajar, dia dah tahu. Ha.</i>
213	R	<i>So just now, you said.. I can see now that in.. architecture industry, they need to know</i>

		design, and then construction. All of these are technical right?
214	I	Yes. And then, they need to know guide- aa building.. by law.
215	R	<i>Semua ni kira technical lah kan?</i> If for communication skill.. is it important for them to communicate..
216	I	Yeah. Yeah. Because they need to aa convince their client of the design. So, if they don't know how to communicate clients, unless drawing <i>dia gempak lah. Yang tu boleh.</i>
217	R	What if they design really well, but they are not that good in communication? Or presenting? <i>Pernah berlaku tak?</i>
218	I	Usually architects <i>pandai cakap.</i> But I think, there are some cases, the drawing is so superb, it speaks a thousand words <i>lah.</i> But they still need to know how to present. <i>Tak boleh tak pandai cakap sampai menggigil. Dia kena pandai duduk kat depan dan present drawing dia.</i>
219	R	Meaning they are used to it since university-
220	I	Yes. Yes. They need to pitch their design, and <i>kena kutuk</i> design dia.
221	R	<i>Memang lecturer sengaja ke akan kutuk?</i>
222	I	<i>Ya, akan kutuk.</i>
223	R	<i>Lepas tu, dia kena kuat lah..? Dia tak boleh hati tisu?</i>
224	I	<i>Betul.</i>
225	R	(Laughs)
226	I	<i>Bukan. Setengah orang bukan hati tisu, macam balik lempaq. Macam dia dah tak tidur berapa malam kan.. so normal lah. Macam architecture, memang normal you tak tidur.. Mungkin overtime kan.. nak bagi bangunan you workable. Nak bagi functional. Nak bagi effective. So working late hours is normal in architecture lah. Maksudnya orang-orang ni mesti tahan lasak lah.</i>
227	R	<i>Bukan jenis.. lembik.. bukanlah lembik, maksudnya jenis emotionally sensitive or soft-hearted?</i>
228	I	I think if they are that kind, they will fail earlier.. if they cannot endure.. because architecture is hardworking..
229	R	So, if we are looking at the list earlier, communication skill is at which place? Hardworking, passionate, creative, initiative.. communication is at which place?
230	I	While they present their drawing..
231	R	Meaning, what number is it? In this list..
232	I	Number 3.. Hm..... Number 1 is passionate, 2 is hardworking, 3 is communication.
233	R	So I want to ask about the Education 4.0 tools.. because you said, some graduates, they take the initiative to learn aa by themselves, right? Just now you said you really like graduates who take initiatives, don't wait for instructions, don't wait for spoon feed... they will search themselves. So, where do they search? Google.. or YouTube or..
234	I	Yeah. They will look for ideas on Google, and adapt the design from there.
235	R	Besides that, do they need to take workshop to learn these.. AutoCAD, Adobe.. V-Ray.. Do your company..
236	I	We don't. we don't provide the resources.. our company is not as big as Petronas.. we don't have the time.. because, when we provide the certs and all those courses.. <i>dia orang pandai, dia orang akan blah.</i> They won't be loyal to us. Because when they have the skill.. they'll demand. And we're not a big company. We're limited..
237	R	Your company don't have that.. much capital.. to sponsor..
238	I	Hm.. we're limited. But supposedly, there should be. Company should provide learning and upskilling opportunities for the staff.. like to learn new software. They should send staff. But our company, we don't have that <i>lah.</i> Because our company is considered medium lah, around 20, 15 staffs. So.. medium range. And then, aa <i>modal pun tak besar.. kan..</i> limited resources. <i>Kita tak.. peruntukkan lah untuk knowledge tu,</i> meaning you need to find it on your own. No such thing the company will send you. <i>Nak bagi you tambah value, company tak bagi. You buat at your own expenses lah.. bukan under company.</i>
239	R	They can learn on the Internet <i>lah?</i> Or if they want to go for workshop, they'll need to find [Free.] the free one.. or at their own expenses.
240	I	Ha.

241	R	So all the Education 4.0 tools mentioned earlier like portfolio, using Google and YouTube to search for ideas.. what are the advantages of using these for graduates' employability?
242	I	One of the advantages is employers have the collection of samples for them to see. And they may choose the best.
243	R	The best, meaning?
244	I	Because sometimes they use bombastic words.. but actually we know.. this is not your word, you copy it from somewhere else.
245	R	How do you know? Is there any plagiarism checker for drawing.. (Laughs)
246	I	They cannot plagiarise drawing. We know. Because it's a process.
247	R	Meaning, they need to show from the sketch stage.. up until.. [Yeah. Yeah] Okay. So the advantage would be.. the advantage for them is they can showcase, and then for you.. you will know which graduates ... it helps you to shortlist and then you will know which graduates really have the skillsets needed.
248	I	From the list, I will know <i>kerja apa yang mereka buat</i> . Because the drawing has their name. If it's not your name, then you claim it's yours, that it's wrong. But we don't mind.. if their drawing is superb, then during the interview, we give them the task.. like I said just now.. in an hour, if they cannot do.. then we'll know..
249	R	Meaning the drawing it's not theirs. Or maybe it's a group work, not an individual work. [Yeah. Yeah] So that's the advantage.. what about the disadvantages? Oh, I think you mentioned these just now. When they use Google, there's a possibility that they will copy or plagiarise. Claim as their own work.
250	I	<i>Tapi ni akan memakan diri dia..</i> like I said earlier.
251	R	In terms of learning sustainability..?
252	I	<i>Kita tak kisah, you belajar kat university ke, kat Google ke, you belajar sendiri ke... Janji bila kita nak, you boleh buat</i> and deliver. Fine with us.
253	R	Okay. So meaning self-study right? Aa disadvantages? Do you think it affects the learning sustainability?
254	I	Maybe easier for them to get distracted.. for example, on YouTube there'll be a lot of pop-ups or ads. Even on Google. Ha.
255	R	Okay. Erm.. when the graduates were in university.. were the graduates taught how to document skill sets.. all candidates have portfolio?
256	I	They need to have. If not.. they won't pass. They won't get the degree <i>lah</i> . Because after each semester, they need to present.. report.
257	R	Do they need to provide reflection? Reflection.. on what they have learned?
258	I	During interview, they will need to tell us. We will ask.
259	R	So.. do you randomly select the project that you want to ask?
260	I	We'll ask on the project that our company currently needs the person. We will ask. For example.. we have a project on housing.. high rise for example. We will ask on high rise.. to see whether they can answer or not.
261	R	So they will do the reflection when you ask them?
262	I	Yeah.
263	R	So.. does this.. reflection help in the industry?
264	I	Oh yes.
265	R	In what ways?
266	I	We can see their skills. That they really learned and knowledgeable. Some people they study and passed the exam. But when we ask.. they cannot relate.. right.. they forgot.. or they study just to pass the exam at that time. So do they really understand and digest or not?
267	R	Once the candidates are hired, do they still do reflection of learning?
268	I	That one.. is a learning process.. as you got through.. you will get better with experience. Meaning.. each experience that you go through, automatically it's a knowledge gained. For example, you need to submit to authority. Authority ask you this this this. So the next time, you'll know.. what are the requirements.. needed. Because you've already gone through it. Ha.
269	R	Do you have the practice.. like post-mortem after each project completed.. or after presentation, the boss will give feedback..
270	I	Yes. Along the process. Each stage, there will be feedbacks. "Oh this, it could've been

		better like this". "Oh there's a conflict between structural and M&E, we can solve like this" .. "Oh, this one, we have to divert because there are services running through here". Along the way, we'll have brainstorming to improve situations.. usually when problem rises. Problems like site adjustment.. adjustment of placement.. beam placement if there's a window there for example.. If everything is in order.. then there's no need to brainstorm.
271	R	Oh, for employment opportunities, does it matter which university the graduates are from? Does it matter? Do you select... Do you see, for example, the candidates.. they have similar qualities, similar qualifications, similar.. they know.. similar... apps applications, but they are from different universities. Do you select?
272	I	I don't know but from our experience.. out of the universities... for architecture <i>lah</i> .. the best.. aa quality students engineered for practicing is UTM. Universiti Teknologi at Skudai. And second, ITM.
273	R	UiTM Shah Alam?
274	I	Yes. Like... aa UM... they focus more on design.
275	R	So to answer your question, it matters <i>lah</i> from which university?
276	I	Yeah. From our experience <i>lah</i> .. from our experience.. the exposure that UTM students get... are aligned with what the industry is practicing. Not solely focusing on design. They are competent <i>lah</i> . I mean.. among universities they have ranking right? [hmm]. So that means, for architecture.. if we are given the choice.. but of course at the end.. still depends on the students themselves. Meaning.. if from UPM.. Universiti Pertanian.. aa Universiti Putra.. taking architecture.. we know if it's botany.. then, it's good <i>lah</i> . If architecture.... that's not its....
277	R	Niche..?
278	I	Ha. Okay if it's me.. if UIA.. for Arabic course, then UIA <i>lah</i> ! For Qur'an Sunnah... I imagine that's the school you should go. The best. Rather than.. you want to take Qur'an and Sunnah, but you go to UPM.
279	R	So meaning to say.. graduates.. before they go to university.. they should do some research on the best courses among all the courses offered in each university.
280	I	Correct. Correct. Like UUM.. Business school is good in UUM. Like UM.. Doctor.. Medic from Universiti Malaya compared to Medic from Universiti Putra.. I think UM is better.. so if you want to take Aquaculture.. you'll take it from Universiti Malaysia Terengganu.. not from USIM.
281	R	Why.. why do think it matters.. from which university?
282	I	Because.. the university is established.. the university is well-known because of the product.. Hmm but maybe not for all case. Like architecture graduates from UIA are okay as well..
283	R	So does it matter..? or you look at the graduate first.. then university second?
284	I	Yes. Yes. That one. That mean, product.. the portfolio is what we want to see..
285	R	So meaning university matters.. but not as much as their portfolio and exposure?
286	I	Yeah. Yeah.
287	R	Okay. Last question. So just now, I mean, we have been talking about this... hardworking, passionate.. all these qualities right? So these are actually the key findings <i>lah</i> from this interview. So.. what do you think graduates should practice? Early on.. when they were studying...
288	I	Hard working. It's different when the students are hardworking. After you completed a task, you meet the lecturer to get feedback.. and then you revise, of course you'll get a better product. You work hard. <i>Jangan main-main</i> .
289	R	So must work hard.. make effort to meet the lecturer..
290	I	Yeah definitely. Very detailed. <i>Jangan buat kerja lepas batuk di tangga</i> . You must do it wholeheartedly. Don't wait for the final semester to build your portfolio. Because you could show your learning process.
291	R	And then.. is networking important? Should they start to find places to work early on or... wait until final year?
292	I	No.. In the first place.. you should know.. what do you want to be exactly? You see? When you take the course, you already have a plan where you're going after you graduated. You already have an ambition. For example, you take Law (degree). So do

		you want to be a practicing lawyer..? Or do you want to teach Law..?
293	R	So they need to know early on... [haa]. But some graduates they.. maybe they develop new interest along the way ke..?
294	I	True. But still lah.. when you agree to take the course, you should have the ambition what you want to be.. and not just take it blindly.. (Chuckles) [Chuckles].. at least you need to have a goal, at the end, what do you want to be..? If along the way, you develop a new interest.. you find that course is more interesting.. that is another matter lah. But at least, at the beginning.. you know lah.. if you take Medic, you want to be a doctor. And then you start.. "Oh.. it's too stressful for me.. I cannot take it." And then you quit.
295	R	Okay. So in terms of Education 4.0.. like learning online.. or assessment.. study group.. all these- nowadays, learning is not.. restricted to only in the classroom right? So.. through Education 4.0.. what should the graduates be practicing from the beginning?
296	I	Like I said just now.. you should work hard, search online.. to find samples to be able to.. generate new ideas. You need to work hard lah. It's not like you can just type one keyword, you'll get the solution to your problem.. you might get different results if you use different keywords.. so that means, language skill is also important. If you don't know what keywords to use.. you won't get the result that you want.. right? [hmm]. Your English should be good as well. Because Bahasa keyword will produce limited results.. But if you search in English.. and.. your vocab power.. ha.. you will get more ideas.. more samples.. answers to your problem.. whatever task that you're supposed to do..
297	R	So English language is important right? I will include this in the list earlier.
298	I	Hmm. But if using BM <i>pun</i> okay, it's just that.. the results will be limited lah if in BM.. because to get the result you want, you need to use the right word.... Nowadays, the graduates' English is quite poor. So they don't know what keywords to type to find the answers that they're looking for.
299	R	Do you want to add more on what else they should practice since university? That you wish they learnt during university?
300	I	They should have common sense. For example.. you asked them to write reports. They must have the skill in report writing. So there must be exposure to report writing. And then, when they go for practical.. they write reports, but it's written casually.
301	R	So.. do you think they don't learn how to write a report?
302	I	I don't know.
303	R	Do they show their reports in their portfolio?
304	I	Not really. Not detailed. So I wish they were given a proper...report writing. The right way to write reports.
305	R	What else?
306	I	
307	R	The reason why I'm asking you because only the industry knows what is lacking among the graduates.. that you wished they have been practicing since university. So you want them to be hardworking, make efforts to meet lecturers. And then, find ideas.. and then..
308	I	Erm.. constantly openminded for improvement lah.. they must have the mind set to take criticism and move further to produce better product... Don't be negative towards criticism. They should take it as a challenge. They should be trained to take it as a challenge. And not feel down or demotivated, and change their course every time they are criticised.
309	R	So.. do you have anything more you'd like to add?
310	I	What else eh? I think English is important because with spelling errors.. and then, nowadays, we have Google Translate.. we have grammar-checker. But they don't take the initiative to use them. At the end of the day, we are the ones who need to check their grammar. For example, we wrote "Railing to be painted". They typed "Railing to be pointed". So that's why I said English is important.
311	R	So I'll put English skill in the middle, is it okay?
312	I	I mean,.. if their English is not that good, they can write the report in BM. But they need to make sure their BM is correct in spellings.. in grammar.. and so on. It's so different.. today's generation and previous generations..

313	R	What's the difference? Can you elaborate?
314	I	In terms of writing essays.. writing reports.. it used to be proper. Their handwritings are hard to read, smaller in size. Then I said, "Just type your report. Easier for me to read. Rather than handwritten". I couldn't figure out what they wrote. Is this an 'r' or an 'n'? I don't know. Maybe this is an individual's issue. Not all graduates..
315	R	So in terms of the high quality graduates.. they are hardworking, they takes initiatives to explore on their own.. [Hmm]. What else that you wish all graduates should practice?
316	I	In terms of knowledge <i>lah</i> .. they should know what they're supposed to do. What is expected. For example, if they take Medic, they should know when patients come, and share their symptoms.. automatically they could figure.. "Oh it could be high cholesterol, it could be this..". They should be able to diagnose. I mean, if they don't have the knowledge, but they are hard-working, they like to ask questions, that's okay too. Of course <i>lah</i> .. not everyone knows everything right? So, if you asks a lot of questions, you'll get knowledge as well. So you need to ask a lot, and search a lot. You can type "What is submission process? What is required?" you'll get the checklist of the requirements for plan approval. So it's just a matter of hardworking or not. Maybe during university, you didn't learn all that. But.. if you type, the answer is on Google.. hm..
317	R	So.. we are at the end..
318	I	I would like to add... for the advantage of Education 4.0 for self-study <i>tu kan</i> .. from my experience of joining online class.. online <i>kuliah</i> .. employer don't need a premise.. or an office to run a business.. they can just do it within their own home.. and aa even for the client or also for the stuff.. they can work from home without the need to travel to office.. saving a lot of money.. saving a lot of time.. aa wasted time on the road.. aa and saving money for petrol and toll on the road... aa.. that's all.
319	R	Okay, I will end this interview. So thank you so much for spending your time. This interview has been aaa eye opening. I got new findings. Hopefully that will help aaa in my research, thank you so much, <i>Assalamu 'alaikum</i> .
320	I	<i>Walaikumsalam</i> .

APPENDIX F

VERBATIM TRANSCRIPTION INFORMANT 2

Name: Expert 2

Place: Researcher's house

Date: 26 May 2023, 9.45 p.m.

DU	R/I	Transcription
1	R	Okay, aa <i>assalamu'alaikum</i> . Okay, just now I have briefed you about the.. about my research objective and erm some details on our conversation today. So before we start, can you share a little bit about your current industry? What what do you do in your current industry? What are your roles? And.. your experience as an industrial expert?
2	I	Okay, aa <i>salam</i> . Okay, the first, aa the background.. of the current industry is more to the oil and gas. So... on the operation phase, which is aa we collect the crude oil and then, export for sales to the buyer <i>lah</i> .
3	R	What are your roles.. in your industry?
4	I	In the role, we... providing and advising, aa the safety matters <i>lah</i> towards- in the operation, day to day. So.. our operation 24-7, so... along the year. And then?
5	R	Aa contoh operation that you do.. like describe your daily...
6	I	Okay, so on the operation wise, aa usually aa covering on the daily activities, activities such as aa reviewing the yesterday- past 24 hours operations. So, for any hiccup that aa offshore ha, okay. Aa before that, [hm hm] in oil and gas industry, we do have two phase <i>lah</i> , where is the onshore operation. So on the onshore operation, usually cover for the KL office. So that one, aa we support all the needs that required offshore. Then our logistic phase, aa so this one usually where our materials, aa all the goods to be delivered before we sending this those item to... those item equipment and tools, aa including also the third party contractor for the servicing aa to our offshore assets <i>lah</i> . So and the last is the offshore operation <i>lah</i> . So usually offshore operation aa is more to the end user <i>lah</i> . So where the all the material, service, tools, being received from onshore, then they will fully utilize that offshore.
7	R	Okay, so aa how long have you been interviewing candidates for when for hiring?
8	I	Since 2019. [2019.] Aa when I was promoted <i>lah</i> aa as a supervisor level. So under.. my subordinate have aa four four person <i>lah</i> , which is reporting to myself <i>lah</i> .
9	R	Alright, so can you explain what's your hiring process? Right from the.. [From the advertisement?] yes from the advertisement, up until you hire them.
10	I	So usually on the hiring process, aa this one will start from the.. our request to HR. So basically, if there's a needs to make available aa the vacant position. So we are required to have a approved box.. which is the dedicated box, position for that role. So that one also require aa our.. aa Petronas approval <i>lah</i> , because in oil and gas, any box all the cost recovery by Petronas. [Oh, okay]. Alright, so.. on the hiring process, aa once we have identified. So that one will cover also by the JDs, sorry, the job description and the position itself <i>lah</i> .
11	R	That one aa is given by you or the HR? Job description.

12	I	By... myself and our HOD.
13	R	Okay, and then the HR will put on advertisement?
14	I	Then, the HR will starting to post aa in the, our company portal. And then at the same time..
15	R	<i>Ada tak guna job- macam Jobstreet ke.. LinkedIn ke?</i>
16	I	Haa that one another database like LinkedIn <i>lah</i> . So that one also have. So for any close connection, they also can drop a CV. So.. once we receive a thousand eh bulks of CV. So there start the... filtering start <i>lah</i> where the candidate being selected for the.. interview based on the.. education experience. So.. <i>tulah</i> the process.
17	R	So do you do the filtering?
18	I	Yes.
19	R	So you filter based on? Education? Experience?
20	I	Education. Experience. And then aa also... feedback from the other.. other partner. I mean partner means from our,.. because in oil and gas, we have other competitor such as aa.. Exxon, Shell, aa Hibiscus. So we have all the connection so from there, we can have aa feedback from the previous aa where he or she reporting to <i>lah</i> .
21	R	Okay, so meaning to say, you will contact the references <i>lah</i> ? You will contact them, and then ask them about their previous job performance?
22	I	Yeah, that one if aaa what.. we really aa interested to this.. candidate <i>lah</i> .
23	R	Hmm. Besides this, do you look at, for example, do they provide maybe.. their portfolio, portfolio as in their previous work samples.. they put into maybe a website, or they give to you in PDF forms.
24	I	Usually, they will aa just mention aa in the CV. [I see]. But then, during the interview session, they will aa presenting any skills that they have to us <i>lah</i> , so that to have more confident, aa in terms of the experience wise <i>lah</i> .
25	R	Hmm. So they.. showcase their skills during the interview?
26	I	Yeah.
27	R	At the time, they present to you <i>guna</i> PowerPoint <i>ke..</i> or using laptop?
28	I	Just using laptop. Usually when we are hiring, usually we'll cover on the analysis <i>lah</i> because our... it depends on the position also. Like aa in safety, usually it's more to skill in terms of analysis, data analysis <i>lah</i> . So data analysis, usually for those have Power BI experience.
29	R	English language?
30	I	Power BI means the new... software for the analysis where.. all the... synchronized in one center file. So just add all the new information, then automatically all the analysis will aa cover once they done the update <i>lah</i> .
31	R	I see. Okay. So this is software? Only those who who know- I mean, do they learn this when they were in university? Power BI..
32	I	Yeah. Depends depends on the...aa <i>tempat belajar tu lah</i> .
33	R	So this is an example <i>lah</i> ? What is the name of the role, Data Analyst?
34	I	Data analysis.

35	R	So when you are interviewing, how do you, how do they showcase that they know this software? Do they show a sample of their work? Or they show it live?
36	I	Ha. They have to show live. [Ohhh]. So aa to prove that aa they well understand the software. So we will ask aa the unique question, example, can you aa customize to this this this? So if the candidate able to prove, so means that he.. all the in the finger tip <i>lah</i> for this kind of software. [Hmm]. Otherwise, during, we want to test the.. skills. Since when we talk about safety, usually aa safety means aa like coaching to the.. other people when you are at offshore. So we will ask, okay, let's say you see this kind of person aa climbing more than 2 meters, without wearing harness. What will you do? So from there, we will see the feedback, response by the.. candidate. Some some some people, they just say that, "Oh, will just straight away.. walk, continue his routine, walk about." But some of the people have a different aa perception. So they will immediately intervene, and ask him to immediately aa, come down and have a conversation. Why, aa the first one, "Why you do that?" And then "What will happen on the impact in the event aa he or she falling down". So what are the action need to be act <i>lah</i> . So from there, we know <i>lah</i> . So.. this kind of mentality is a good example for the aa safety character <i>lah</i> .
37	R	So meaning to say when when they are applying, they need to know the.. rules, safety rules.
38	I	Hm. Yeah because on the.. before they attending the session, usually they have to well-known <i>lah</i> what our.. written JD. Because usually during the interview, we will ask aa all related to the aa listed JD. So any information aa given by the candidate aa outside from the JD, so we will ask, example, let's say, the candidate start starting to tell about the special things and example like aa confined space. So when they talk about that, so.. that one, part aa additional skill beyond from the JD. So we will ask okay, anything related to regulation. So we will touch on the aa from the regulation and the occupational health act <i>lah</i> . [Hmm] So if he able to respond, so means that yeah, he is a good information <i>lah</i> .
39	R	Okay, so and then aa when they are able to answer all these questions, are they immediately hired or do they have aa second stage interview? What what's the next step?
40	I	Okay, usually.. we will shortlisted, aa example, if aa hundreds submission for the CV, we will take about 10. So we will interview all 10, aa all 10 candidates. And then from the 10, we will aa rating after the end of the interview, we will complete the interview forms on the rating forms. Aa what do they get, their weakness and so on. [Hmm] So from there, aa the top five, we will have the second interview. Okay, so on the second interview, usually is the, aa when come to the decision for the selected, aa selected candidate. So.. once we have decided this kind of candidate. So we will ask aa HR to proceed on the hiring process. So from there, HR will start contact that candidate for the aa commercial section <i>lah</i> , so that one beyond our scope <i>lah</i> .
41	R	Okay, so aa when you, when you do the rating from 10 candidates to five, then what are the criteria that you look for? That, that makes them..
42	I	Knowledge, experience, aa and then aa for the past records. And then also on the behaviour, connection. So this one, usually we will aa start contacting the reference to verify all the information, tally, based on the CV, aa provided. And then..... And then the, the, the, the unique skills <i>lah</i> .
43	R	For example?
44	I	For example, for example, like, like, example, like what I provide just now on the working height <i>tu</i> . [Okay]. So for those able to respond on the safety, aa knowledge. So that one is extra credit.
45	R	Okay. So would you consider that as problem solving skill?
46	I	Yeah. Usually, safety, at site, they aa manage, aa all the third party contractors. So hundreds people, so they have to maintain, manage all these kind of people <i>lah</i> . So we have to find the right candidate that can, aa so that this third party contractor can listen to him. For any... any intervention or promotion on the towards safety, at site, so this

		kind of program <i>lah</i> , so that he ever to run our HSE plan that given from onshore to offshore.
47	R	HSE? H-S-E? What's HSE plan?
48	I	This one usually covers all the annual activity aa for the offshore execution.
49	R	Hmm. So what do you think are some of the skills or competencies, <i>ciri-ciri</i> , that you consider important, among graduates? In your opinion.
50	I	Usually on the special training aa competency. So, example, like aa confined space, aa scheduled waste management, and then, aaaa the certified safety officer, so these kind of skill, <i>lah</i> aa training.
51	R	So all of these trainings, they- aa is it compulsory for them to take when they were in university?
52	I	No, this one that they can have a separate session <i>lah</i> . Because this course is not very expensive. An example, like confined space, usually about (RM)1,000 something, aa (RM)700 for the phase one, and then aa about (RM)1,600 for the second phase. So once complete, they able to have a competency after three years for the first phase one aa experience <i>lah</i> . So that aa one kind of the additional competency.
53	R	Okay. So just now you said about the problem solving skill kan? So I would put that as one of the list, that you feel is important for graduate is, firstly, they need to have training, secondly, they need to have problem solving skill. What are other attributes that you feel.. important among graduates? That make employers want to hire them.
54	I	Confident. High confidence level. And then, able to deliver aa driven to deliver, we call it. Because he able to deliver the direction of the company. Aa without any assistance because usually, once we set a goal, so he or she aa required to deliver the information directly to the end user <i>lah</i> .
55	R	Okay. What else? Just now you said about coaching, so meaning to say they need to be able to aa they need to have communication skill?
56	I	Hmm. So usually, on the coaching..this is part of the university phase, because, aa those come from the safety background, aa one of the subjects, aa under Managing People. So, these dedicated subjects are teaching, uh, sorry, teach, on the, how to manage, uh, this kind of person, uh, those, uh, stubborn. So you have a different skill on how to handle them. Some people are easily to taking care but those, aa very hard. Uh, they have a, uh, different, uh, what we call that, uh, different way or method. So, other things, also, in our, uh, organization, um, we have, like, uh, the color coding for this kind of people. So, uh, this one you can refer to, equilibrium, equilibrium. (Equilibria) [Hm hm] So, they have to answer, uh, the assessment, that one are free from online. So, once they complete all those, uh, question, aaa the rating, will be provide at the end of the question. So, from there, either they have, uh, blue-red, red-yellow, yellow-blue, or yellow-red. So, all the definition, can uh, open in the website <i>lah</i> .
57	R	So, what is this, for example?
58	I	Okay. Let's say, uh, red-yellow. So they have, so this kind of people means that, oh, he's very straightforward. Aaa straightforward and then, he don't, he don't like, like, uh, you explain, too detail, he wants to straight away, uh, make it short and simple. [I see]. So, that kind of logo usually oil and gas practice, uh, so, uh, we also have, uh, like patches, uh, so that the sticker will provided, so that, when the- those have attended, this kind of course, so they able to see, oh, okay, mean that, oh, this one, uh, green-yellow, so, when we, we start talk, so, uh, he will talk, non-stop. So, you can know <i>lah</i> what kind of people, people are you going to facing <i>lah</i> . So let's say, more red, uh, so it's aaaa extra challenge for you. [I see]. Uh, so that, that one in our industry.
59	R	So you, you use stickers, color coded stickers. Where do you put the stickers?
60	I	Uh, helmet.

61	R	Ohhh. So they choose?
62	I	No. The sticker we will provide. From HSE. So, usually, once they complete the assessment, and then aa copy of the assessment will passed to the HSE. So, the HSE department will start to provide the color code sticker <i>lah</i> .
63	R	<i>Dia orang tak tanya ke, kenapa saya punya sticker color lain, kenapa dia punya sticker color lain?</i>
64	I	Because during, before they answered the question, aa all the definition introduction, all been provide inside the.. website. So they summary, because by end of the result, aa a detailed summary will be given in PDF. So, from there, you can know, uh, these people aa personality <i>lah</i> . So this one is more to the personality.
65	R	So you listed competency, problem solving, high confidence level, able to deliver direction, communication skills and as well as coaching. Do you have anything more to add? For their skills.
66	I	Usually from the graduate, they they will have, you know, on-job training, practical training haaaa. Yeah, because, uh, now, if not mistaken, from three months, has been extend to six months. And then, also, some of, depends on the university. Because, uh, if not mistaken, nowadays, uh, minimum, eight months, eight months or one year..
67	R	Eight months?
68	I	Uh, for the, for the, on the duration of the internship program <i>lah</i> .
69	R	Alright. So, in your company, how many months?
70	I	Eight to..one month. Sorry. Eight to twelve months.
71	R	Do they have reason why they, they choose this? Eight to twelve months, instead of three to six months?
72	I	Uh, more hands on <i>lah</i> , because, can explore more experience, towards how does the operation works in the industry?
73	R	So, uh, out of the, list, here, can you rank, which one is the most important? Like the one on top, which are the most important? Top three or top two maybe?
74	I	High-confidence. Communication. And aa problem solving.
75	R	Why do you say that? Why do you rank this as the most important?
76	I	Because once they start, starting to explore the industry, so, usually, they have to break their comfort zone <i>lah</i> . [Hmm]. Because, usually, this, aa same goes to the.. those, have been staying, so long in the organization, or the, the.. position, um, so, that one will become too comfort, so that he not able to see, uh, what does the.. other experience that could take <i>lah</i> .
77	R	Okay, so that that's why you think they should have these three, the most important. [Hmm] What about the least important? Not as important. If they have it or don't, you will still hire them.
78	I	 The personality of the color code <i>lah</i> . Because this one not all industry practice. Subject to the mother of the company <i>lah</i> .
79	R	What about competency trainings that they go to?
80	I	Oh this one, sometimes we can send after we..hire them. That one can be sent these people to training. No issue, because all the training fees nowadays HRDF kan, totally claimable. So.. at zero cost.
81	R	So, meaning to say your industry wouldn't mind to pay for this staff to go for trainings? [Hm hm]. Okay, and then, aa..... okay, can you share why do you think these skills that you listed earlier, problem solving, communication, high confidence level, and then they need to have experience. Can you share aa why is it important, why do you

		think it's important for their employability?
82	I	Because usually.. the supervisor, once they been hired, [hm hm], supervisor will provide aa the detailed job scope. Okay, aa let's say he taking over previous aa resigned position, so for sure he will given the handover notes. [Hmm]. Okay, so from there, he have to digest all the contents and then start to explore by himself <i>lah</i> . So, with minimum guidance <i>lah</i> from the supervisor. So, that's why aa very important, fast learner is the number one.
83	R	So, I shall include that in the list just now?
84	I	Hm.. Can. Can.
85	R	So.. is fast learner number one in the list? Because just now you said number one high confidence level, communication and coaching and problem solving.
86	I	Number two.
87	R	Fast learner is number two? [Yeah].
88	I	Because, when they are hired, they have minimal guidance. So, that's only.. because usually when they touch to the system, so they are going to have one, a one-on-one introduction for the dedicated system. So, we will know issue <i>lah</i> .
89	R	So in terms of learning sustainability, why do you say it's important to sustain what they have learned in university before? They can apply at the workplace.
90	I	This one, aa that's why very important, when we hire them in them, the fresh grad. So,.. we will see the background of the study.
91	R	What what kind of things that you see in their study?
92	I	Okay. Usually, let's say aa we have a environment advisor, a fresh engineer, aa environment engineer, junior engineer.. example eh. [Uhuh]. So, from them, we will see, we will prefer those fresh grad from the aa environment background <i>lah</i> . So... all the knowledge, he can absorb and then easily to adapt <i>lah</i> . Because, when comes to certain, certain aa education, they have a jargon words eh. So, those aa learning finance, so, they talk about all the aa finance thing. But, when, uh, uh, from the finance, then you join HR. So, totally, you're going to blackout. So, that's why very important.
93	R	Hmmm. So, meaning to say, if they have these skills, then, uh, easier for them to pick up?
94	I	Hm. Correct.
95	R	Even though they are from different field, [Yeah]. Before this, they were in finance, and then suddenly they are in HR-
96	I	At the same time, we have, uh, this, our own local procedure. So... from, uh, [Local procedure?] So, this one local procedure, uh, what kind of the procedure that, uh, he looking for. So.. let's say, uh, we have a, uh, scheduled waste management procedure. So, anything that related to scheduled waste, [What?] so he has to go through scheduled waste, uh, management procedure. [Oh, okay. Uhuh.] So, anything that related to.. this kind of waste, so he has to go through this kind, uh, this procedure <i>lah</i> .
97	R	Um, so, out of the candidates that you have interviewed.. what did they showcase that make them stand out.. from the other candidates? Maybe you have.. because you said you have interviewed since, uh, 2019. So, maybe you have interviewed a lot. So, out of the candidates, maybe you have somebody in your mind that really stand out? Can you share what is it that.. they show maybe during their interview that made them stand out?
98	I	He willing, uh, so this one, because, uh, offshore, offshore, so usually they have a, 20, uh, 14 days, uh, sorry, 21 days offshore, and then, uh, continue with 21 days off day. So.. usually those that, uh, during the interview, they mentioned that "I'm willing to extra workday, for example, like, uh, stay back or being called back for any

		emergency, uh, that, uh, arranged by office.” So, that one will also be, uh, extra credit for him <i>lah</i> , because, uh, under- my subordinates usually all the offshore base <i>lah</i> . [Okay.] So.. other things, uh, like the, he, able to provide.. the good intervention skills <i>lah</i> . [For example?] Like, uh, like the one that I explained on the working height.
99	R	Oh, how, how they can coach <i>tu eh?</i> o, uh, on the coaching, I see, uh, that's all.
100	I	Ha.
101	R	So, um, uh, those are the- some of the examples that they showcase during the interview, [Hm] they're able to show, uh, how they can manage people. Uh, and then, just now, they are willing to...
102	I	To stay back. Stay back means to stay, uh, extra day <i>lah</i> . So, we'll sacrifice his offday, aa which is getting shorter <i>lah</i> .
103	R	The extra days are paid right?
104	I	Paid <i>lah</i> .
105	R	Okay. Aa did the graduates, did they use any Education 4.0 tools? So currently, currently we are in Education 4.0, meaning, aa learning can be done anytime, anywhere. It can be online, it can be offline. And then, uh, you can learn on Google, you know, it's not like, uh, learning should be in class. It can be outside of classroom as well. So, uh, among the graduates that you have interviewed, did they use any aa Education 4.0 tools?
106	I	So this one, LinkedIn?
107	R	Ha, LinkedIn is a type of Education 4.0 tool.
108	I	So far.. that one aa LinkedIn.
109	R	So, um, is it a common practice.. in your industry, uh, for you to look at everyone's LinkedIn before hiring them?
110	I	Yes.
111	R	What, what are the things that they usually put in their LinkedIn? What are information or..
112	I	Aa the.. information that this graduate share, post, uh, to his wall. So from there, any achievement, milestone, aa during practical, or.. previous aa assignments.. so from there, uh, also being credit <i>lah</i> for him.
113	R	So meaning to say any project that they have done or..
114	I	Yeah. Correct.
115	R	If they put all on LinkedIn, it will be bonus for them <i>lah?</i>
116	I	Depands <i>lah</i> . Depends on the success story.
117	R	Uh, example? Can you share an example of a success story?
118	I	Okay, let's say, because once, aa in the oil and gas industry, uh, for safety. So usually, aa we have a free.. let's say, previous, he able to uh, to organize a workshop, health talk, uh, also providing the talk to the public. So this kind of the example <i>lah</i> will be credit.
119	R	They, they provide the talk?

120	I	Uh, yeah. Provide the talk to the.. this one, example, like, the best student.
121	R	Okay. So, uh, do they also include maybe, for example aa do they put their certificates? Do they showcase it in their LinkedIn?
122	I	Yes.
123	R	Yes? What about video resume?
124	I	Uh, video resume. This one aa very less because, uh, most of it, we're still using aa PDF resume.
125	R	So is it common? All candidates will use LinkedIn?
126	I	Mix <i>lah</i> .
127	R	So usually, they will send resume in PDF?
128	I	Uh, yeah. At the same time, in the background information section, so, aa also provide the LinkedIn profile <i>lah</i> .
129	R	Besides this, are there other tools used? Maybe certificate from online trainings?
130	I	This one, no.
131	R	Okay aa what other strategies that you think graduates should practice, to enhance aa skills <i>tadi, semua ni</i> problem solving, communication and all these. , can, can study your dimensions, skills, What the graduates should practice earlier on from the... university? [Yeah]. Maybe using Education 4.0 tools?
132	I	I think this one more to the... digitalized <i>lah</i> .
133	R	Meaning? What do you mean by “digitalized”?
134	I	Because aa nowadays, many of the industry more to the technologies right? So example like, Power BI. So.. people are less using, still using, like Microsoft Excel. But for the data analysis, usually now, they are starting to use this kind of, uh, Microsoft Power BI. So it's more convenient, and aa.. less time consuming, because usually when you're using Excel, so error and so on. So aa then you need to transfer into Microsoft PowerPoint. So this aa for the, this kind of Power BI, you are no longer required.
135	R	Sorry, may I ask? What kind of data analysed in Power BI?
136	I	So, man hours <i>lah</i> . Aa and then all the audits findings, observation cards for the unsafe act unsafe condition. And then, for any aa category, analysis that relevant to the line of saving rules. So this one more to the oil and gas, uh, because we do adopt this life-saving rules from the IOGP.
137	R	What's IOGP?
138	I	International Oil and Gas Producer. Aa so this one is more to the aa analysis study by the global. Aa global country. So, aa they will have a study on the fatality rates. So.. let's say, aa higher number of fatality related to the working height. So they're going to have a pledge. Uh, so by, uh, days, I, “I will anchor my safety harness to the anchor point. Uh, I will make sure that”. So these all the pledge, listed up inside the.. based on the teams.
139	R	Hmmm, so meaning to say, Power BI, it helps you to analyse..?
140	I	Because it's a medium. Because you can customize what, what, what kind of analysis. Let's say more to finance, then you throw all the finance data.

141	R	Oh, it can analyse data for finance too?
142	I	Finance. Whatever data. So this one more to the light, more to easier during the presentation. Because during the presentation, based on, based on the, uh, experience <i>lah</i> . Let's say the management. Okay, suddenly, "Okay, can you explain more, uh, this kind of data?". Then suddenly, during that time, you don't have, uh, this kind of data in front of you. So by having this kind of Power BI, once you click, uh, whatever that they want, automatically, the data will automatically appear, listed, aa live. So you just scroll, scroll until they satisfied.
143	R	So this one being used by oil and gas or in your company only?
144	I	Oil and gas, starting to use that one.
145	R	Is it paid?
146	I	Uh, paid, uh, usually paid under Microsoft Office, uh, so it integrated software.
147	R	Okay, so just now you said, aa digitalized, you want the students to expose themselves with this kind of software? So that later, they will do their work faster?
148	I	Because usually in the other, aa industry, they still using the old method <i>lah</i> . (Chuckles). Like Excel. Old timer use it.
149	R	Some oil and gas industries are still using it?
150	I	Yes.
151	R	Besides learning tools that can ease their work, what else should graduates learn or practice during their academic years?
152	I	Okay, on the design.
153	R	Design?
154	I	Because... nowadays, when we talk about digitalized, so it's more to designing. Like promotion design, banner design, aa bunting. So all the information now, because people are easily to transfer information through message from the design, rather than you put 1000 words in the pack. [Hmm]. So when you have a good design, so easily to deliver the message to the end user.
155	R	So, you don't have graphic designer that does this?
156	I	No. We have, aa we are going to design ourselves <i>lah</i> .
157	R	What kind of banner that you design?
158	I	Ha. Let's say for the safety, safety. So, if you want to design poster, so this kind of the promotion. Promotion towards safety <i>lah</i> .
159	R	Okay, I thought that, like, there are graphic designer, or maybe you work with graphic designer...(Chuckles)
160	I	Oh nooo.. We are multi-skill.
161	R	What are the tools that are being used in your company?
162	I	This one is PowerPoint <i>lah</i> . (Laughs)
163	R	But, the design for the presentation, is that what you mean?

164	I	No no. For poster <i>lah</i> . A3 size poster. A0.
165	R	<i>Macam tak sangka, kerja safety, tapi kena buat design</i> . Do they learn this, how to design when they were in university?
166	I	I think so. <i>Tak ada lah</i> . They start to learn after starting in our organization, yes <i>lah</i> .
167	R	Hmm. So, that's why you list this.
168	I	That's why those who resigned <i>ya</i> , REsigned (RE was emphasized), have higher opportunity at other.. competitor. Because, here, all multi-skill.
169	R	(Laughs). Besides that? What do you mean by multi-skill? They need to know design, they to know coaching. What else do they need to know in your company?
170	I	Budget. Finance. Contract also. And then, also, manage the... third party contractor for the...special servicing. So, for the special servicing, we do have... For the safety item related like, personal gas detector...personal transfer basket. Gas detector to make sure that all unit at offshore...are being calibrate before the deadline. Calibrate every...some of the device, six months. Some.. annually. So that one, all.. we have to cover <i>lah</i> .
171	R	So, how do you know graduates have this multi-skill during the interview? From their resume?
172	I	No. This one this one, usually, we will start to...teach them after hire. During internship, we guide <i>lah</i> . So that's why, very important to find...the right post aa organisation. Because, some of the organisations, they hire internship just to do all the...clerical tasks, photocopy.. that one, my children can do.
173	R	(Laughs). So, that's why, the internship in your company is 8-12 months. [Yeah]. Because they need to learn a lot of things.
174	I	Yeah, we also.. aa expose them to the... on-site. (Clears throat). We bring them to... logistic base. [What's that?] KSB... where all the transportation of the material... Kemaman Supply Base. So, this one, all the transport equipment comes... Before, we sending to offshore <i>lah</i> . So, usually, we'll load into vessel to the boat. So, from the boat, then ship to offshore <i>lah</i> . But, aa internship, unable to go offshore... because our insurance, not cover. Hm.
175	R	So, do you have anything more to add? In terms of the...what is it that they can practice early on...when they are in university... so that it helps them to be employable.
176	I	I think, on the...competency. Because, on the competency aa this will be credit <i>lah</i> . Because, when you getting older... Come to the competency, we are very hard to continue study. [Hm hm] So, when sitting exam, fail, exam, fail. So.. to compare from the fresh grad, they have aa fresh memory, easy to.. recall whatever that they have studied.
177	R	So, what do you think they should do...
178	I	Okay, under this scope, So, we have like..... auditor course. So, that one will be credit.
179	R	Auditor course meaning you provide or they took in university?
180	I	When they were in university. Because, some of the... university provide. Depends <i>lah</i> . And then, also, the...Safety Head Officer Course. So that one, for sure, they will... certified <i>lah</i> by DOSH. DOSH mean Department of Safety and Health Malaysia.
181	R	For employment.. does it matter which university they graduated from?
182	I	Ha. This one.. Certified MQA. Why? Because those certified by MQA, all the course aa being monitored. At the same time, also, they fully aa complete their course with exam. Aa so, for those not certified MQA, they just siting the course. And then, once complete, they receive aaaa the certificate of attendance. So, that one very.. that one more to the certificate course, rather than aa professional course.

183	R	So, meaning to say, from your point of view, the university doesn't matter where, as long as it's certified by MQA?
184	I	Hm. That one from Malaysia <i>lah</i> . If from oversea, we don't have any objection <i>lah</i> .
185	R	Why do you say that? Is it because from overseas, all high quality?
186	I	Yeah, because... All yeah... Because usually, my fresh grad, all local. (Chuckles)
187	R	(Chuckles).
188	I	Eh, previously, this one Indian <i>lah</i> . So, when come to office, then <i>mabuk lagi</i> .
189	R	During interview or <i>dah dapat kerja</i> ?
190	I	<i>Dah dapat kerja</i> . And then, due to... long weekend, enter work Wednesday hangover. That one we immediately notify aa HR, we conduct alcohol tests. [Hm hm]. Tested positive. So terminate immediately.
191	R	It's stated in the contract?
192	I	Contract, our company policy.
193	R	So, what are the skillsets that you want to see?
194	I	I think, for this question, answered just now. Also, will be credit, if they have more... digital video resume. So, because usually, in paper, they can write, beautiful touching words. But, when you call for the.. interview, they will start to.. stutter.
195	R	Is it because they are nervous or they have low confidence?
196	I	That's why, on the low confidence. Because sometimes, those aa stuttering ni, when on the...hands-on job, very tip-top. So, we cannot fully rely. Because, in the organization, they have two types of people. [Hm hm] So, <i>orang yang pandai cakap, tapi tak pandai kerja, dan orang yang pandai kerja, tapi tak pandai cakap. Itu memang ada.</i>
197	R	So, do you still hire them? Even though they seem nervous and stuttering? Or is that a turn-off?
198	I	That one, we look into more of the.. skills <i>lah</i> .
199	R	Skills lain? Kalau dia layak, dia dapat?
200	I	Hm.
201	R	But you are hoping to see more video resumes?
202	I	Hm. Just play, and then we can see... aa the reaction aa first impression <i>lah</i> .
203	R	So, how well did the universities prepare graduates? Do you think... what they learn in universities do you think it helps them... to be employed? Do you think it helps your industry?
204	I	So far, as of now, yes.
205	R	What else could be done... by a university? So that it...it helps them to be employed... Something that... university can do, or something that the lecture can do?
206	I	 Maybe..university can have a more aa presentation paper...not as a grouping, group presentation. Individual.
207	R	Why do you say that?

208	I	Because, once... individual presentation... so, they're going to have aa increase the the confidence level... in terms of the presenting.
209	R	So, usually they have this but in group?
210	I	Ha. When in group, so only selected people will present...the remaining will stay silent, smiling at the back.
211	R	So, any more that you'd like to add?
212	I	That's it.
213	R	If later, let's say you have some more, you can add up. Aa what are some Education 4.0 tools that they are using? I think just now you have shared. LinkedIn and Power BI. Anything else?
214	I	Maybe.. they can... not sure. On the basic design lah kot. Like Adobe.
215	R	To be taught in university?
216	I	Ha, basic design course like that.
217	R	Okay. For training, do you conduct training.. online or face-to-face?
218	I	Face-to-face.
219	R	There's no recorded, then later conduct online?
220	I	No. Though when there have an incident from other operator. We will call it a safety stand-down. Like 10 minutes break... for the.. quick safety call. So, that one we will share... the incident update lah.
221	R	Is it every day?
222	I	This one subject to Petronas release lah.
223	R	What's the purpose?
224	I	Let's say have a fatality incident so.. they will immediately aa call all the...oil and gas company...to have this to participate in the presentation. So.. the company owner...all the incidents...will present. What happened? What's wrong? Aa the immediate and the root cause for this kind of incident happened.
225	R	What is it for? For awareness?
226	I	Learning lah. Learning from mistake lah.
227	R	So, meaning to say...aa you learn from each other...each other's industries, like there's a network between you and other companies?
228	I	We share each other.
229	R	<i>Tak macam membuka aib sendiri?</i>
230	I	No. Because we have to comply with the Petronas requirement. When the incident happened...with high severity. So, that one you are required.. to share within time period given.
231	R	So, have your company shared before?
232	I	Yeah. We have. LTI. Where both leg caught by the plates in the basket. So then, the injured person, aa crushed by moving object. On both leg.

233	R	One person? Is he now handicapped?
234	I	Now, he's under recovery.
235	R	Are his legs amputated?
236	I	No. <i>Masuk besi lah.</i>
237	R	Oh. What's LTI?
238	I	Lost-time injury.
239	R	So this is the practice in oil and gas industry <i>eh?</i>
240	I	Hm.
241	R	This one is conducted online? Google Meet?
242	I	We use Microsoft Teams. So, usually the participant about five to six hundred.
243	R	Wow, that's a lot. What do you think are the advantages.. of using...Education 4.0 tools like what you said just now?
244	I	So, this one we...credit...to the graduates.. to be employed <i>lah.</i>
245	R	So for this (safety stand-down), I would say this is the advantage for learning sustainability because you learn from each other and convenient to be conducted online for five six hundred people. Is it correct? Do you agree?
246	I	Hm. Correct.
247	R	So, for designing, is it hard using PowerPoint? (Laughs)
248	I	It's hard. So, they have to come out with...some design skills. TikTok and whatnot.
249	R	(Chuckles) Okay so for Power BI, you said it's convenient for data analysis and presentation. Does it generate chart or bar graph or what?
250	I	It's like this. (Takes out phone and demonstrates how data is presented on Power BI app). Let's say the management want to see.. findings. I can filter like this.
251	R	Oh... Is this accessible by everyone?
252	I	Those who have link <i>lah.</i>
253	R	Okay, I just want to reconfirm. You said Power BI is convenient and saves time. For safety stand-down.. this one, is it monthly?
254	I	Aa only when there is incident.
255	R	So, the frequency.. usually?
256	I	Oh.. we don't want any incident actually. But once have, that we will have safety stand-down.
257	R	Before Microsoft Teams?
258	I	Before Microsoft Teams.. using Skype.
259	R	What about disadvantage?

260	I	<i>Tu lah, PowerPoint.</i>
261	R	Why do say that?
262	I	Because old design <i>lah</i> . (Chuckles)
263	R	For LinkedIn, is it an advantage for them to be hired?
264	I	From LinkedIn, you are easily...to to check either this...personnel aa actively posting, participate participate for any whatever post in the LinkedIn <i>lah</i> . Um...Like, social media. So the kind of post shared. That one subject to review <i>lah</i> .
265	R	So, does it make it easy for you to filter...the kind of candidates that you're going to choose?
266	I	Oh that one, we have to call for the interview.
267	R	Anything else that you like to add? For their learning sustainability?
268	I	Yeah usually, whatever that he learned, able to adopt in the industry. [Hm hm]. But on the disadvantage <i>tu</i> , if the fresh grad are being hire, but in a different scope of study.
269	R	Example?
270	I	Fresh grad chemist, chemical engineering. But then being hire, HR. That kind also have.
271	R	Really? How can they be hired with a different background?
272	I	Maybe during internship, they just grab whatever opportunity that have. Because aa some company, only remark "Oh, you hold any.. Degree subject". So that one..
273	R	Oh.. At the same time, the disadvantage is the supervisor from the university <i>lah</i> . Because...When they hand over to the organization aa during practical, so, the supervisor just leave it. Not monitor. So, that one is very important, uh... Supervisor lecturer, eh, [Uhuh] to visit aa random check, this practical student.
274	I	Hmm.. maksudnya jangan tinggal je, lepas tu lepas setahun..
275	R	Repeat lagi. (Chuckles). You're giving suggestion for the lecturer to be more..
276	I	Frequently spot check <i>lah</i> .
277	R	And communicate with the industry?
278	I	Hm.
279	R	Do you have any more to add, in terms of advantages and disadvantages?
280	I	No more.
281	R	Aa graduates that you have interviewed, right, were they taught how to document skillsets? Like put their project, assignment and so on in a portfolio. Or were they taught how to make a reflection or a report after learning something when they were in university?
282	I	No. Usually, they send resume <i>lah</i> .
283	R	<i>Buat reflection? Buat report? Yang tu dia orang pandai?</i>
284	I	<i>Pandai.</i>

285	R	<i>Yang tu belajar kat university ke?</i>
286	I	<i>Belajar kat industry lah. Kena ajar jugak. Tapi.. cepat lah, dia punya belajar tu.</i>
287	R	You still need to teach them? They don't learn how to write reports during university?
288	I	They learn. But, because different organizations have different types of reports. They know reports. But we still need to guide them. But very minimum <i>lah</i> . So, I have no issues here.
289	R	In terms of skillsets, were they taught how to document them? Like in a portfolio. Or they show their assignment or project during interview?
290	I	No.
291	R	Whatever that they have learnt during university, does it help the industry?
292	I	Yes. But not all <i>lah</i> . Because usually, when you study, you study 100%. So, when come to the industry, and only apply about... 70%. The remaining...does not reflect <i>lah</i> to the activity in the industry.
293	R	So, meaning to say, you as an expert in the industry, provide the other 30% guidance right?
294	I	Hm.
295	R	So.. do you have anything more you would like to add? A conclusion or anything?
296	I	Conclusion is, <i>banyak</i> fresh grad <i>yang mengganggu ni</i> . (Chuckles)
297	R	(Chuckles) Is that your comment?
298	I	No <i>lah</i> . That one is more to the organisation <i>lah</i> .
299	R	Meaning?
300	I	Because usually...they keep hiring the seniors. So.. not giving the opportunity to fresh grad <i>lah</i> . [Ohhh...] Supposedly, we open more roles <i>lah</i> . So, this kind of fresh grad, able to start the first career.
301	R	Hmm. So, this is.. among the issues happening in your industry? [Hm] Only in your company, or in all..
302	I	All of them. For the seniors, with 15 years experience. So, how do the fresh grad want to start a career in oil and gas?
303	R	What's their retirement age?
304	I	Same like government <i>lah</i> .
305	R	So are you saying the fresh grad roles are open only to senior?
306	I	No. Fresh grad roles are very.. minimal. So better to have more. Maybe.. university can demand to the.. industry <i>lah</i> . <i>Supaya dibanyakkan lagi lah</i> .
307	R	You don't have the power <i>ke</i> ? To open to new fresh grads. You, as the industry?
308	I	<i>Ada juga. Tapi ni</i> to other side <i>lah</i> .
309	R	Well, this is actually a new finding. The one about not giving opportunities to fresh grads.
310	I	Because they are done with practical, then, it's done. [No opportunities to continue?] Ha because there is no box. So, that's the problem.. in the industry. The position is not

		available in the industry. Because..they need to wait for the person to retire. Then only there's a box. It's happening in other industries as well.
311	R	Alright. So, I think that's all. Aa thank you so much for spending your time to be interviewed. Aa whatever that you have shared today is really eye-opening. Aa and I would like to wish you all the best for your future. Thank you so much. <i>Assalamualaikum.</i>
312	I	<i>Walaikumsalam.</i>



APPENDIX G

VERBATIM TRANSCRIPTION INFORMANT 3

Name: Expert 3

Place: Interviewer's house

Date: 4 June 2023, 4.55 p.m.

DU	R/I	Transcription
1	R	Okay, Assalamualaikum.
2	I	Walaikumassalam warahmatullahi wabarakatuh.
3	R	Okay, so before we start, can you share a little bit about your current industry...? And your roles?
4	I	Okay, I'm working in Micron Memories Technologies, so... semi-conductor electronic industry. My current role is on.. Supplier Compliance Auditor. I do audit for supplies and site regarding on the responsible business alliance compliance.
5	R	Okay, so aa is your industry a manufacturing industry or...
6	I	Manufacturing industry. Electronics.
7	R	Okay, and then aa what about your experience? How long have you been in this industry? And then how long have you been interviewing candidates?
8	I	I have been for.. electronic industry for eight months. But for manufacturing for..... For 14 years. Manufacturing.
9	R	Okay. So how long have you been interviewing candidates for new hiring?
10	I	Seven years.
11	R	Can you share a little bit about your hiring process? Starting from.. advertisement up until.. hiring.
12	I	Okay, because I am not under HR who recruit the candidates. So.. I talk on behalf of my... as a user process or requester. So normally I need to submit approval to the management. For example, aa to have like a replacement candidates or new roles of candidates. And if the management approved, then it will go to the HR. And then HR will do all the recruitment. And they'll arrange back to me during only for the interviewing and selection of the candidates.
13	R	So meaning to say, aa the HR will filter?
14	I	Yeah, everything in the HR will do. However, HR will provide to me on their resumes or CVs. And I will look into their filtered out candidates. And from that I will filter back if I would like to have the interview with the candidates.
15	R	I see. So you do the filtering?
16	I	Yeah.. For second stage. Aa.. For final stage. So normally HR will advertise and they will filter out.. exactly who they assume or who they think are suitable for the position. And I will filter out again. So sometimes all the filter out from HR we 100% to be interview. Sometimes I pick up again on the.. for selected candidates only.
17	R	I see. So aa meaning you will provide the job description to them?
18	I	Yup. So during the submission of the approval, I need to.... prepare their JDs. As a basic, for example, what is the required for the candidates? So I will put that kind of information. And also.. what kind of job- JD needs for that vacancy. So from that, HR will put the advertisement based on information that I submit during the approval part.
19	R	Okay. And then after aa.. during the interview, do you have a follow-up interview after that? Or that will be the final stage?
20	I	It depends. But most of my past experience is one-time interview. Because the

		interview involving together with.. director level. However, if the interview session, there is no director level, then they will be like two stage or two.. times of interview. If during the session, I and the HRPSE, I mean the HR manager and the director is- are involved, then it's just one-time interview only.
21	R	Okay. So.. how do you decide whether the graduate is employable or not?
22	I	First, depend on how.. they respond towards the.... their experience on how they will do the job. And normally I will provide them like a.... one scenario and I will see on how they respond that kind of scenario. To look how competent or how matured their answer is.
23	R	Okay. Can you give an example of the scenario?
24	I	For example, like this one of my past experience, when I interview like for example like a Safety Health Officer, then I will ask normally I will go just like a.. briefly of introduction. So they will put introduction of themselves and what activity they carried out based on their present company. And then from there, I will ask more details part to see how they respond. And I will provide them a scenario to see how they respond based on that scenario. For example, for safety issue, I just pick up like a... "If you saw an accident, what is your response to that accident?" and see how.. they respond to that kind of question. But that question is not a fixed question so it depends. [hmm] And also from that, normally I will ask "What is their expectation and future aa goals in their career?". So from their answer I can.. assume or I can decide that this is a good candidate that will stay long. Or.. this is just stepping stone candidates that just love to stepping. So, I would like to prefer candidates who who.. can stick more than I expect. That means, at least aa they can develop or have something for themselves before they are moving to other company.
25	R	Okay, so how do you decide that? How do you decide to hire this candidate?
26	I	This is normally based on how they respond. Because if in the resume, they can key everything they want. Aaa... and also because of the vacancy of EHS, Environmental Health and Safety, normally require competent person. However, that one is already filtered out at the beginning stage. So for those who are not competent, then I won't select for the interviewing. So normally for interviewing is.. already selected based on their competency. And during the interview... aa I will see how willing or how commit they are, towards the kind of destiny or.. towards the vacancy that have been provided. And.. from my point of view normally, I would like to prefer candidates who can.. aa listen to the superior. And.... have.. a good idea and share with a good manners. So for me.. it's aaa... character also is important. [hm hm] And..... for me.. character I think so. Positive character, I love people who have positive character. So, that kind of character, you can see based on their answer. [hmm] Language is a second matter <i>lah</i> .
27	R	Language, meaning?
28	I	Even though.. the person or candidates are unable to speak English well, sometimes. But they can speak in Malay during the interview session. But based on the answer.. it can reflect either they are chosen or not.
29	R	So what kind of answers.. that you expect? What kind of response?
30	I	Good character. I mean a positive character. So an example like... aa willing to learn and then respect people. And then... innovative thinking.
31	R	How do you know they have innovative thinking?
32	I	Based on the scenario. So for example, when we provide one scenario or one case. And from their answer, we can know that the answer is like innovative answer or just like normal person answer.
33	R	So what do you think are some of the attributes or skills that you consider important among graduates? So just now you said aa innovative thinking, ositive character, and then... willing to listen to superior. What else?
34	I	Willing to learn number one. And then aa positive character involving quite various of characters such as respect for people. So that one is considered important for me..... Aa innovative thinking, respect for people, willing to learn.. So mostly I think those three are normally considered important. The rest.... depends because knowledge level can be developed. But if not willing to learn, then no meaning. And no respect for people also it's difficult to control that kind of candidates. And normally for positive

		character like, you can see during the interview. For example, if.. the candidates provide or respond to you with a genuine smile or whatsoever. Their face sometimes can show that kind of positive character, I'm not sure.
35	R	What if they are nervous and then, they cannot smile? (Chuckles)
36	I	Nervous.... That one quite difficult <i>lah</i> . If nervous, it's difficult to judge, or to assess.
37	R	So it's a disadvantage for them?
38	I	Hm.
39	R	So out of the qualities that you mentioned here, aa can you rank which one is the most important and which one is the least important? Starting from the most.
40	I	The most is respect for people. And then the least is... innovative thinking. The best one for me is respect is important.
41	R	So you don't mind if their thinking is normal, as long as they respect?
42	I	Yeah. Depends on people <i>lah</i> . For me respect is important.
43	R	So why do you say respect is important?
44	I	Because if.. the candidate, no respect to people, so it will be difficult for me to manage that kind of candidates or.. future... colleagues or future employees. Because I will represent on behalf of that kind of employees. So if employees have issues with other people, it will reflect to me as well. I need people who have good communication with good respect.
45	R	Aa.. What about their learning sustainability? So learning sustainability meaning, they sustain what they learned. It's not just they go for exam and then it's gone. But whatever they have learned, they sustain it. They can apply it, in workplace. They can even do self-study in the future. So.. how can 'respect for people' helps them to sustain their learning? For example, they are applying for HSE. They have the qualification. They have learned in university. And then, how can this quality, respect, help them to remember what they learn? Help them to sustain what they learned?
46	I	Because for this HSE job, it normally needs to engage with all various departments. Because it's not like Engineering or QC that you only.. work with a product or with computer. But because of.. in the first place for HSE, the objective is to ensure all employees working in a safe and health. So means, all the HSE candidates, most of it is dealing with people. So.. to get their learning sustainability for example, so whatever they learned at the university need to be applied to the people who they work with. So without the respect, aa it would be difficult to the candidates to work and also to apply on whatever activity program that they.. want to implement. So.. if no work or no activity, there is no learning or no sustainability for them as well. Because.. even though they know something, but in the process normally or whatever, they need to have another stakeholders or other department who.. very well on that kind of, for example, a process or production. So, these people or these kind of production members, they can share to the HSE even though he or she is new. So.. at that time, he or she can learn that process and also they can teach the production or the process member. That mean, there is a two-way of learning scenario.
47	R	Meaning, they will learn from each other?
48	I	Ha. Because for example like, HSE, have the theory of ensuring safe workplace. But if you do not know the process, how you want to implement the safe workplace? [Hm] So for example, I give you a simple example that.. Aa.. you know how to cook, but you do not have a kitchen to cook. So both of you need each other. So that kind is more like.. they can just sustain whatever they learned at the university and apply with the stakeholders or their colleagues. For example, HSE is not for them actually, it is for others. So these kind of values of respect needed because, if you were in an environmental or industry, without respect of people, it would be.. very challenging, because in a real industry workplace, if no respect then, they would have like a.. some kind of toxic environment, such as people do not take accountability to the job. [Hm] And then aaa project cannot moving forward because aa it depends on the boss or sometimes, they don't take any responsibility if problem or have issues. So, to have a good teamwork cooperation, respect for people is one part of the.. important values that needed. And also for the learning sustainability for HSE, not limited up to the university level, because in HSE, HSE has quite various of competence items. So

		normally once they joined in the industry also, if they want to maintain for example, they are a practitioner of competency, they still need to have the continuous education point. So part of the government requirement, the continuous education is considered sustainable, they mean they keep continuing learning, because they needed the point to maintain their competency. So.. however, when we talk about working in the industry, as mentioned again, teamwork, working environment is one of the important things because, in industry you cannot work alone, unless you in like the IT industry or computer industry, maybe we understand it, but if like a manufacturing or production or whatever industry, that needed the teamwork of people, then definitely you need to have a good teamwork comes with a good communication, and a good communication needed respect for people.
49	R	So I would like to add based on your response earlier, so I can add teamwork, teamwork as well as communication skills in the list. [Hm hm] So.. is it together as number one with respect for people? Is it together, communication and respect for people? Teamwork, or do you want to rearrange?
50	I	Also can because everything like.. teamwork, communication also need part of the respect for people. Respect for people is a value that I see in the candidates, because if you say about communication also, it's quite broad. For example, there are certain people who can communicate to the management, but unable to communicate with employees. Because when you are in the industry, normally you have a two kind of level. You need to report to the superior or you need to report to the below level for example. So you have the management or you have the non-management. So to approach these two of groups, you need different skill of communication, but both need respect. [Hmm] Same goes to teamwork. Both need respect. So I think.. respect is number one. It's one kind of character that I see for candidates.
51	R	So meaning, they need to have respect when they do work in team, and then they need to have respect when they communicate. [Hm hm]. And then what about innovative thinking? Why do you put it as the least important?
52	I	Because... it depends for.... this kind of job. For Asias, as I mentioned, because of.. I need to have a good candidate who can work with all the people. So.. if the candidates have a good respect to the people, maybe he does not need such as innovative thinking when he or she, can get innovative thinking from other team. It's not like you can manipulate other people, but because of your good way and you have respect for people, from that... So because.. most of the HSEs may not have innovative thinking because their background is not.. from the kind of understanding. Because they are not like science training, education, and so on. Because some HSEs under Engineering, some HSEs under Science, Arts. So innovative thinking only widely applied for engineers and scientists and so on. But there are still people who have that kind of background also have innovative thinking. And sometimes also it's not so called innovative because of their past experience at other industry and normally they just adopt and adapt.
53	R	So that's why you're saying it's a least? It's a least because they can get this when they work. Not necessarily "you must have innovative thinking". [Yeah] Just now you have mentioned about where they need to.. their learning sustainability doesn't stop in the university. Even when they are in workplace, they need to have continuous education. So does your company provide that?
54	I	Yeah. So.. For example in.. currently I'm working in Micron.. So we have a good platform of learning development. But most of it is online learning. Also you have coaching that you need to select. And also we can obtain a third party.. external training, whichever that you would like to.
55	R	Third party? For example?
56	I	You go for external class. I mean for external training. Just now I mentioned is on internal training. Internal training that the company provides. That mean they have either their internal staff or trainer. Or they engage with a consultant that provides training as internally. But for third party, for example, I would like to go for this course. And I can submit like approval. And if the course is approved by the management, then I can go. If justified to whatever I'm doing. I mean.. if related to what kind of job that I perform presently.
57	R	So meaning they will pay for that?

58	I	Yeah.
59	R	Is it like annual basis or..?
60	I	Yeah, annual. There are certain training that they have already the fixed frequency. As online. It is not necessary online. I mean.. because nowadays everything is online. And also at my.. current company. They have fixed slot. That means you can select.. once in a two weeks for four hours. So.. you can accept that kind of meeting. So.. during that time, your calendar will be blocked. So people cannot call for a meeting during that time. It's a fixed... It's a fixed schedule. It can be both for internal or external training. But because we have a calendar for all the things right.. For example, from my past experience when working.. When it comes to training normally the training will be interrupt because of workload. So for example, when you have the day of the, already have blocked for training. But because there is no official of blocking the time. So sometimes people call you for.. meeting. People call you for any other jobs. So in my present company, every two weeks they already have this kind of schedule of fixed training. So it's up to you if you want to accept it or not. So it's a half day.. four hours. So biweekly, they will have that kind of training slot. So if you want to accept it, then for this time, it will block your calendar. [hmm] For your own innovation training. Either you want to have a self-training or you want to have some research for.. any activities that are related to your job or... whatever you have self-training lah.
61	R	Is there any reason why your company is taking this initiative?
62	I	Because from my point of view, they really appreciate people, because... people is actually your most important asset. So.. if you don't develop your people, I mean your resources of workforce.. then the whole company will not moving forward. They will have a stagnant at certain part of time. Because.. aa education is not like a stage that have fixed platform. It's a continuous learning.. until you go also so you need to learn.
63	R	Everyone will be involved? Even the management level?
64	I	Yeah. But it depends on their- that means, the company provide the resources. They have all the libraries. So they have.. the coaching session. But it's up to you either you want to apply or not. Because, if you were in the industry, everything is up to you again. Even though you have all the resources but you do not willing to learn then it's just not willing to learn. So that's why I put number two for 'willing to learn'. But for my current organization, it's a good example because they have this kind of resources. Compared to my previous, they do not have the like a specific time for people to develop. So normally in a local or in a Malaysian organization, they commonly they..... they neglected on the.. career development. Because the most important is "this is your work, you need to do." So it become like a... routine job when people start to feel bored for their normal because there is no innovation from whatever they do. Do the same thing every day. And people get bored and they have no assignment on their part and they feel that they are not developed. So that maybe there is a reason people keep jumping to other company. But if.. this kind of resources of development. So... when the workforce or whatever the candidate in the industry looks like, they can grow bigger much important, so they will stay. Because when you talk about working, it's not only on salary. There are certain people who look only for that, salary. But.. for long term, it's not about salary.
65	R	So don't you have candidates who take advantage? Or... they say they are in training but they are not.
66	I	Aa...we we don't have. Because the selection of candidate is also a risk. Because sometimes people when interviewed, is very very good when talk, but in actual it's not very good. So normally from my practice is, when I decide to.. select a person. I will verify based on their reference. But not to talk about their technical know-how. Just want to know "How is this kind of person when currently work at your place?". "Is there an issue?" "Is he or she is a problematic people or not?" Normally from my past experience, when I talk to the referral. Normally the referral give good response. Then I decide to hire that kind of person. So referral is very important for me. So even though I select, I will call the referral, to justify that either this kind of person is good or not. And sometimes also, when my former colleague go to other industry also, they put me as a reference. So some company called me as a reference, they also asked me similar question "Is this person is okay or not?"

67	R	Is that a normal practice in your industry? In manufacturing industry?
68	I	It depends. It depends to the HR. But for me, I believe that reference is important. Because hiring process is not an easy job. [Chuckles] It takes time. So if we waste a lot of resources of time, timing and suddenly people cannot sustain or whatever, then it's a loss. Then we need to go back from A process, from advertisement and so on. But if I call the referral, and the referral give a good or positive response then yeah.. I stick to hire the candidates. But later on also we will have some restriction. Because it's not me who decide their salary package. So sometimes even though the candidate seems like okay, but when it come to the salary package, the HR unable to negotiate on their expecting salary then.. they are still a loss. And then I still need to hire a new person. So still it depends.
69	R	Out of the candidates that you have interviewed, what did they showcase that makes them stand out from the rest? So you have interviewed a lot. So.. the ones that you hired, what is it that they showcase that make them stand out?
70	I	Their confidence level of the way they are respond to the question.
71	R	Can you share an example?
72	I	Like aa when.. I asked a simple question then, they can respond with a clear straight answers without curling around. Not the answer that I seeking for. They are certain candidates that keep aa beating around. But actually they do not answer the question.
73	R	Okay. Any more.. skills or qualities that they show that make them stand out? Maybe something that they bring for the interview? They bring portfolio...
74	I	Hmm.. Because aa normally just during during the interview, because, the competency or all the qualification already verified prior to the interview. So during interview normally I just- based on their response, based on how they answer the question. How they are ready to answer the question. Because sometimes the interviewee also prepared... during the interview. So for candidates who are unable to prepare we can know. Because for example like, if we ask, okay, "Do you know anything about this kind of industry?" It is a basic question. So if they do not know anything, then it looks like they do not prepare well for the interview. So.. when they do not prepare then we can see that "Ah, they are not very serious". Maybe they just "try to fish around their luck" or "they want to test their market" and so on. Because if people.. willing to go serious, they will study a bit on company that they want to go to the interview.
75	R	So you will ask questions related about the interview?
76	I	Like a basic lah, just to know that.. either they are interested or either they have like a pre-study to do before they go for the interview.
77	R	So the candidates that stood out to you are the ones who showed confidence level? [uhuh] And they also showed readiness and they are prepared? [Yeah] Any other qualities or any other skills, that they showcase during the interview? [No] What about when you were filtering their resume? What are the things that you look for?
78	I	Qualification. Qualification does not mean their university qualification. Their job competency. Because for HSE, they have several of competency. For example you have aaa Safety Health Officer. You have a Certified Scheduled Waste person. You have Certified Industrial Effluent Treatment person. So that kind of competency. So first of all, based on current situation, for example like.. my company before this, we have one person and this person holds two competence.. and he or she moves out. So the replacement needs to cover for that both competency. So that is a first step. And then second step, is based on their past experience working. So I just refer what kind of JD they hold before this. And also for other qualification.. like what kind of training they attended. Because HSE is considered.. a lot of technical. I mean if they have more training that they attended like a certification or any other value, then it will be more useful.
79	R	So for the competency, just now when you said that and for prior experience, what about those who are fresh graduates? Do they have these? Is it for the role that you open only for people who have experience?
80	I	They are also.. there is one situation that I open to not a competent person. But not fresh graduates lah.. one year working experience.
81	R	So if let's say, during their internship they did really well, do you take that?
82	I	Based on my experience I do not have any internship. So.. I'm unable to respond to

		the question. I do not have any experience of internship people.
83	R	So your company.. or your previous company, they do not provide internship? [Hm hm] So.. no fresh graduates, usually people will have experience coming in your company? [Uhuh] So.. did the graduates use Education 4.0 tools..? Currently, we are in Education 4.0. Like online learning, you can learn anytime anywhere, not necessarily in the classroom. Sometimes there's no instructor, you can still learn. So.. did the graduates use Education 4.0 tools? For example, portfolio, online learning. Ha.
84	I	Oh so far.. Based on my experience, no. Old people.
85	R	Really? Even for personal development?
86	I	They do not list out on their resume or they do not talk about it during their interview. So I am not sure if they have applied or not.
87	R	But.. aa after you have hired them?
88	I	After hire yeah.
89	R	So what kind of tools that they use?
90	I	Online training.
91	R	Online training. So that one is on which platform?
92	I	Sometimes Zoom, sometimes Teams.
93	R	Do you have the ones that are not live? For example.. Coursera... Udemy..
94	I	No, normally the company have their own internal page. So.. for example like this department want to have this kind of training to all the people. Then they will upload their presentation or training material on the website. And we use Workday. So this Workday will like.. notify to all the needed participants for training that they need to answer or they need to attend the online training. For example for my case when I joined this new company, I myself have like a required training that already popped up. So.. I need to attend all the online training.. for me to complete the required training for me. .
95	R	Okay. So what would be the advantage of using this tool for their employability?
96	I	You can save resources on the trainer.. Save a lot of time. And then... aa time for the trainer. Because some times, the training is the same thing but different participants. So they will just use the same content and then they put online.
97	R	But how do you know they watch the training content?
98	I	They will be the quiz. Normally when I... For example, for my case, when I answer, it will pop up like, how many percent. So if you fail, you still need to answer the question again. So means it's already linked to the system. So they are certain training that you need to pass.. that for you to complete the course. If you're not passed, then you need to answer back all the questions. And if you do not see or you do not go through the training material, for sure you cannot answer the question correctly. So that kind.. the way they evaluate for self-online training. So mean, assessment or quiz is needed .. are needed.
99	R	Okay. And then after that do you get certificate? Digital certificate?
100	I	No, no certificate. Because it's an internal class.
101	R	Unless you go for external...
102	I	Ah, external then they have a different thing.
103	R	Have you taken any external? Or maybe you provide?
104	I	Yeah. I attend lah.
105	R	And then where did you take the external training?
106	I	NEBOSH, UK. NEBOSH.. National Examination Board in Occupational Safety and Health. It's online. It's a self-class lah... It's under UK platform. I don't know. They use their web page. They have like a.... 13 module. So you need to self-train for the module. Then aa.... you can select when you want to go for the exam. So the exam is open book. But the question is not like a direct question. It's a case scenario study. So it's like a... 48 hours of open book examination. Then aa.. once you complete all the assessment or test, aa assignment, then you reply back to the panel, and they will verify your examination test. And later on, they will notify you the result whether you pass or fail.
107	R	That one you will get certificate?
108	I	Yeah, that one I get certificate.
109	R	So.. just now you said the advantage for graduates who are using tools like this online

		training, right? It saves resources for the... You don't need to pay the trainer, right? And then it saves time. Do you have any more advantages that you like to add?
110	I	For the participant also, it gives like... You can study anywhere. [Okay.] You don't need to wear proper attire to go the class or... You don't waste time just to commuting to the training centre or venue. That is the merit. However for the demerit, that there.. is no engagement between people. [Hm hm] So.. you may cheated. And then.. the social skills will be... What do we call it? <i>Makin menurun</i> . Social skills. Because there is no two-way communication between you just.. you just have self-study and you answer the question by yourself.
111	R	Hmm. What about their employability? Are they... advantages in terms of employability? Will these kind of tools help them to be employed?
112	I	Yeah, it depends. If the candidates or.. people who use this kind of online training that can be useful to their.. daily work, so later on when they go to other industry, they can set out whatever they have, even though it's online training. But yeah, it depends to the people. So if the people or if the candidate who only just learn and do not apply then is... meaningless <i>lah</i> . [Okay] It goes back to the people. Because nowadays also aa.. from my past experience where I have attended several of conference online that they conduct overseas, even though it's conduct overseas, but when you apply back whatever you learned, it still benefits to me. But that mean, the communication is still there. So even though, for example, if you go to online training with the live people, like Zoom.. you need to open your video. So there's still- the engagement is still there. But if like a self.. own.., it will be quite difficult actually. So from my past experience, when I go for training like NEBOSH, it's quite difficult and challenging. Because... This one is self-studied. So you need to answer your exam.. by yourself.
113	R	Okay. So just now you said it depends. In terms of the advantage for employability, it depends on the people. [Yup hm hm] If they apply what they learn, then it will help them for employability. But if not, it won't help them. [Yeah]. Okay. What about the disadvantage? Is that any disadvantage of using these kind of tools for employability? Just now, the one that you said, just now that one is for learning sustainable.
114	I	For employability, a lot of poor social skills, communication skills. Social skills deteriorate. And then..... Lots of self-confident. Because you do not meet people. Okay, that's all.
115	R	Okay. What are the strategies that you think.. graduates should practice aa early on? From university. Aa to enhance the skills that you mentioned. Because just now you mentioned about respect, willing to learn innovative thinking and all these qualities..
116	I	Participation in extra activities. They should participate in outside universities. Like clubs. Clubs or... any CSR activities with the NGOs. Or industry. Mainly, they are... They are... see more people <i>lah</i> .
117	R	In what ways will this help them? When they join for NGOs...
118	I	They can... It goes back.. respect for people. And then they learn communication. Confident level also can boost up.
119	R	How can it boost... confident level?
120	I	Talk to people. Talk to strangers. Talk to people who you never know before. Because your network is not only your university friends.
121	R	Okay. Like you said, nowadays everything is online. So how can they use education 4.0 tools? From... university level. Something that they can practice. Something that will be beneficial. Later on when they graduate.
122	I	Oh, they can search like a LinkedIn. They have several... Several... Class on LinkedIn... Based on what I know. And then.. aa.. Podcasts. Spotify Podcasts.
123	R	Should they build their portfolio using education 4.0 tools?
124	I	Yeah. They can go like nowadays have... The AI resume one. I never try before but yeah.
125	R	Do you think portfolio is important for all graduates?
126	I	Yeah, because it's like on a front page of book. So when you want to enter any company, that will be your front page... Your contents will be during the interview. So from front page, if you're not selected from your front page, then it will be difficult for them to get employer.
127	R	In your experience, do all the candidates bring in portfolio?

128	I	No. I never request for portfolio. Normally based on resume. And... interview. They send resume and digital certificates. But for portfolio whatever they did in the past, no.
129	R	What about in the future? Do you want to see Portfolio or E-Portfolio?
130	I	Yeah, it can be useful. If they apply the LinkedIn, for example, they can have everything right? So yeah..
131	R	LinkedIn is actually a type of portfolio because you can put...
132	I	Yeah, it's good because you can have a background survey.. on their page. It might help the recruit department to filter the candidate before they send to me.
133	R	What about video resume?
134	I	I never have before.
135	R	(Chuckles). Do you know video resume? [No.] . It's like a resume but in the form of video... [Video]
136	I	Never have before.
137	R	Okay, just now you said... Uh, it's good for you to be able to see their portfolio. Because you said it's like a first impression. [Uh-huh.] Before you invite them for interviewing. Uh, what are the skillsets that you want to see in their portfolio?
138	I	Related to the work. If he worked in a safety field, then maybe... Any safety...portfolio that related to the job can be... attract for the interviewing selection. So, for example, any safety initiative or safety project that they did previously... they can include.
139	R	Okay. For employment opportunities, does it matter which university they are from?
140	I	Uh... For me, not necessary. Because once they enter the industry, because I never hired a fresh graduate. So maybe there's a reason I don't look into their kind of university graduates. But there are certain that they're good. From my experience, there are certain university that involved their student towards the industry. So, they are certain candidates. I mean, aa there are certain group of university that I think is... It's a good... can produce... produce a good candidate. For example, for my field, I think UPM is one of the good universities. Because they have involved their student from the third year. Aa...To implement whatever they learned at the industry itself.
141	R	So they have their internship during the third year?
142	I	It's not an internship. It's like, for example, they learn this thing. So they ask their students to do their actual testing at the industry. For their assignment.
143	R	Oh, okay. So the lecturers, they give assignment that reflect the real world situation?
144	I	Hm hm. So far, when I work in my previous company, only UPM approach for that kind of activity. Not under university, but for that field.
145	R	So, what could be done by the university from your opinion from industry?
146	I	To get an engagement with the industry. Maybe third year is okay. Not as internship. Just like a project-based. Whatever they learned, they can apply to the industry. The good thing is they can provide actual reports to the industry. They can present to the industry. So, actually, it's a real lifetime good exposure for them.
147	R	Anything else? Maybe something that the lecturers could do? So that they will produce graduates who are high quality from the start.
148	I	I think exposure or engagement to the industry is good enough. Unless the lecturers are from the industry, then it will be a different kind of thing. But when you talk about the lecturers from the beginning from the institution of education, means the lecturers do not have an exposure to the industry. So, it's hard for them to talk about what's happening in the industry. So, if they just give exposure to the student, direct to the university, it's good enough. Not necessarily to have more things or whatsoever.
149	R	So, just to confirm, you are saying engagement with the industry. And especially for the lecturers who don't have an industrial exposure.
150	I	Not necessarily. I mean, the important thing is to get the student exposed to the industry with whatever they do. The second thing on the lecturer point is like sharing information only.
151	R	So, if they don't have the industry experience, it's okay. As long as they bring their students to engage with the industry. [Hm hm hm]. What is it that you wish the university teach graduates before they enter your industry? Meaning something like..
152	I	Aa ethics lah. Because nowadays, graduates don't have ethical. Ethics in everything, ethics. Ethics, good manner, respect for people, no bribe. Because if you have a good or very brilliant person but no ethical, then they will do evil. [Hmhm]. Because I think

		local university still don't apply ethics as one of the.. compulsory subjects to the candidates. I'm not sure. But when I study in Japan, ethics is one of the.. compulsory subjects. So, in ethics, normally they mention that you cannot bribe, you cannot do...that mean you perform your work in ethics <i>lah..</i> in <i>amanah</i> way.
153	R	Can you... Because not everyone has that exposure to learning about ethics. Because you said in Japan, you learn about that. Can you maybe briefly share what you learned, what kind of assignments?
154	I	Ethics means... What I learned is... First, they'll go for fundamental, definition and so on. And then they give a case study with a study groups. So, each group have a different case study. For example, they give Company A, have this kind of case. Company B, have this kind of case. Then what you need to do next. And so, from that assessment, they will discuss among the lecturers. What you should do, you answer is like this, but what you should do, for example.
155	R	And then assignments, what kind of assignments do you need to do?
156	I	The whole study group is the assignment. [I see.] So, they give a big case study. So, you need to have some research on that...among your friends.
157	R	Do you still remember what was your case study?
158	I	No. But about bribe <i>lah</i> .
159	R	How do you think this subject can be included in Malaysian university?
160	I	I'm not sure, but yeah maybe can improve. Because when you have the ethical person to work. Then... at least the work.... Yeah, we have a responsible person who do their work. Because nowadays, everything is independent, right? With the introduction of 4.0. If we don't have ethical person, then they will manipulate the freedom that they have. For example, like, work from home. If you don't have ethic, you just don't do your work. So, that's part of our concern.
161	R	Okay, last question. Were the graduates thought how to document their skillsets? For example, using portfolio just now? [No]. What about reflection of learning? Do they know how to write reflection or report? After they graduate, when they go into the industry, they know how to write reports. Or they know how to reflect..
162	I	So far, if fresh grad I think, aa the basic thing, sometimes they don't know, but because they are... When we taught once, then they able to perform it according to whatever we taught. Actually, it's not like a specific format for that. The important things that they willing to learn, they can learn from it. Because if you talk about reporting or reflection of learning, it will be different among the industry. Different industry requires different kind of reporting.
163	R	Do you have reporting in your industry? [Yeah.] So, for the graduates, is it easy for them to do the report?
164	I	Yes, it is. Not that difficult. I teach them once and then they are able to follow.
165	R	How does it help you when they are able to write reports? How can this help you?
166	I	Because when they can perform the report, then we understand the job that they performed. So, we know they do the job or they don't do the job. And also it's easier for us to report back to our management on whatever activities that they have been carried out by them, based on the report.
167	R	Do you have anything else before the end?
168	I	No.. Later if I have more, I will contact you.
169	R	Okay, so that's all from me. Thank you so much for willing to be interviewed. Your answers provide key findings and it's really eye-opening. Hopefully it can help with my research. <i>Assalamualaikum</i> .
170	I	<i>Walaikum salam warahmatullah</i> .

APPENDIX H

VERBATIM TRANSCRIPTION INFORMANT 4

Name: Lecturer 1

Place: Lecturer's room

Date: 8 June 2023, 2.30 p.m.

DU	R/I	Transcription
1	R	<i>Assalamualaikum.</i>
2	I	<i>Walaikumsalam warahmatullah.</i>
3	R	Alright, so previously I have briefed to you.. about my research objective and the purpose of our conversation today. So before we start, can you share a little bit about your experience as a lecturer? What are the programmes or subjects that you are teaching and about your students' levels?
4	I	Okay, erm.. a little bit of my experience as a lecturer, I started teaching in... 1999 as an English lecturer at a local college. Okay, then... in 2003, I got accepted to be an English lecturer as well in IIUM International University in the CELPAD, Centre for Languages, as an English lecturer, and then during that time, I further my study for a Master's degree in Instructional Technology from- part -time from 2005 to 2008. Okay, and then I continued teaching in the language centre. And then in 2000 aa late 2010, I got accepted to become an Academy Trainee in the Kuliyyah of Education for the specialisation of Instructional Technology. So I pursued my PhD in Instructional Technology on scholarship in the University of Nottingham Malaysia Campus, and.. I started in 2011 and I completed my PhD in 2015. I was on study leave. [Okay.] And then I returned to Kuliyyah of Education as a lecturer in- specialising in Instructional Technology attached to Curriculum and Instruction Unit aaa Department, sorry, attached to Curriculum and Instruction Department with the Instructional Technology Unit. And I have been teaching this area focusing on students... doing their minor in Instructional Technology. So this is the programme that I am focusing on. These students come from various major in Kuliyyah of Education. There are four majors, major in TEASL, major in TAASL Teaching of Arabic, Major in Islamic Education and Major in.... Counselling, Guidance and Counselling. Most students.. doing minor in IT, Instructional Technology are TEASL students. Yeah, majority are TEASL students. The other minor is minor in Moral. And the subjects that I am teaching currently are all subjects under this minor in Instructional Technology Package or Plan. It covers three... main areas which is V isual Literacy, Instructional Design and Digital Literacy. So these students, once they choose their minor, they will have nine courses, nine subjects, where the subjects focus on these three main areas. [Hm hm]. And basically this minor in IT is to prepare them to become a teacher that has an added value.... where they are not just.. teaching their subject matter which is their major but they also have an additional skillset in this case, Instructional Technology or Educational Technology where they learn.. how to become an Instructional Designer and how to become an Educational Technologist where they can make use of this knowledge to enhance their teaching of their major aa to become more engaging, more active. So it is expected that they are to become teachers equipped with 21st century learning skills, teaching and learning skills <i>insyaAllah.</i>
5	R	So mainly they are from Bachelor's degree programme, your students?
6	I	Yes correct. But we do have postgraduate degree in Instructional Technology as well so I am teaching these subjects under this Master's programme and PhD programme as well.
7	R	So you are covering both undergraduates as well as postgraduates?
8	I	Correct. For students for postgraduate they are mainly teachers, who wish- or educators who wish to pursue their postgraduate degrees in Master's or PhDs in Instructional Technology.

9	R	Okay. So how do you feel that the Bachelor's degree that you are teaching.. has prepared your graduate students for employment?
10	I	Erm.. To be honest this minor in IT which is a... minor supplementing their major degree is preparing them at the minimum.. to equip them with a skillset that will distinguish them from the normal.. from other students doing the same major. Okay. Let's say aa 100 students with a major in TEASL for example. Okay. And these students they have minor in IT. These gives them an added value of a different skillset that enhance or boost their teaching capability beyond just what the normal major provide them. So what this is preparing them for employment where they is a step above other graduates where other graduates might not have this minor.. in Instructional Technology and they have this add-on or added a skillset which give them a different skillset to enhance their subject-matter. Okay. So.. at minimum.. because if they were to focus on this skillset this will give them a new another layer to their.. marketability. Okay. 10 students with the same major going into an interview. These students can go into the interview saying that I have this major, TEASL for example, and I also have this minor and this sets me a step above other candidates. So it is.. the purpose is to prepare them for employment, to give them an added value to their resume.
11	R	So when you said to give them added value, what are.. some examples of the skillsets covered in the subjects, in the minor subjects?
12	I	If we put these students in the scenario where they are to become educators, where they go out and apply to become educators. So this.. program, minor in IT gives them the ability to teach beyond aa what their major is preparing them for. Okay. They have another layer of skillset, where they teach.. aa their teaching is enhanced with technology. Their teaching is enhanced with the knowledge of Instructional Design. Their teaching is enhanced with the knowledge of Visual Literacy. So this allows them to explore or to design or to develop more efficient, more engaging more active learning experience for their students. Okay. So in the job market, if they can display this, if they can.. demonstrate this ability, employer would see that they are a better candidate than other applicants.
13	R	Hmm. So when you said demonstrate, right, they are able to demonstrate the skillsets that they learned earlier during the minor program.. Do you include this in your teaching? Do you teach them how to.. demonstrate this skillset?
14	I	Yes. Yes. Correct.
15	R	How?
16	I	In my class, my students, it is compulsory for them to document their learning progress, for each of the subjects that they are taking with me. And.. when this is documented, this can become the evidence that they can carry into the job sector, into the job market. Aa.. This documentation for my students are in the form of... e-portfolio. [Hmm] So it is compulsory for each student to create their e-portfolio where they can document these skill sets, these tools that they learn, the skills that they learn, their expertise in Visual Literacy, in Instructional Design, in Digital Literacy. So all these are documented in the form of reflection and artefacts in their e-portfolio. This e-portfolio is what they will add to their resume. [Hmm] That they will show.. it's a showcase to the employer that "This is who I am". This is telling the job market, this is telling their potential employer, "This is who I am". You can see the evidence, you can see the documents, the artefacts, their reflections. So.. I am not only preparing the students with their e-portfolio for assessment, but also to become.. their whole package, to display or to present to potential employers of who they are. It is creating them a package. So this e-portfolio does not stop after they, once they graduate. It is something, a product, an output that they can carry with them throughout their career. It's a lifelong project. So it's like their promotion, their advertisement for who they are. [Hmm] So that's why I really emphasise on these students to create their e-portfolio in the form of a website that they can share in the form of a video resume that they can share to potential employer. So they showcase their skillsets, they showcase their characteristics, their ability, their attributes, all in one package, e-portfolio.
17	R	So.. when you are teaching them this documentation of skillsets.. and reflection, right, is it done by all lecturers or only some lecturers practice this?
18	I	Unfortunately, it is not a compulsory element of assessment, for all throughout the Kuliyyah. It is only selected lecturers choose this aa method or this path for assessment. But to me, it should be included as part of their assessment especially for teacher trainee, this pre-service teachers. We call them pre-service teachers or teacher trainee, because they are teacher in training. So to me.. they should be part of their aa.. formative assessment as a teacher as a student, sorry, as a teacher trainee, okay. So that they can reflect back, and they can evaluate their learning journey

		throughout from the beginning of their degree until they graduate. Okay. So to answer your question, no, not all lecturers are doing this. Only certain lecturers especially in Instructional Technology Unit and some other lecturers.. are aware of the benefits of this documentation, this e-portfolio, but it's not a compulsory assessment component.
19	R	I see. Okay, so does this help you in teaching your students for their employability, for them to document skillsets?
20	I	Help me or help students?
21	R	Help the students for their employability.
22	I	Yes, because the reflection part.. within the e-portfolio helps them to reflect back on their skills. They can go back to their reflection, they can review.. their skills, they can look what they are lacking, they can aa go back through the reflection to see, okay, this is what I'm lacking, I need to improve on this. Okay, so these are the skillset that I am currently not competent yet, so they can improve on it. So they can revisit their e-portfolio, they can revisit their reflections, they can aa you know, reflect back what else do they need to improve themselves to make themselves ready, for the job market.
23	R	Okay. And then does this help them to be highly employable when they graduate later on?
24	I	Oh yes. I mean, there are several cases where former students of this Kuliyyah who carry this e-portfolio or who carry the video resume, who shared video resume and e-portfolio with their potential employer, got called for an interview, right away without being filtered. [Hmm] Okay. What they did was they watched their video resume or they go through their e-portfolio and, they see, "Oh, this candidate is good! Has the potential" and they got ticket to their interview right away. [I see.] Okay. And on top of their certificates. So aa.. video resume for example, helps a lot to showcase who the person is, because within the video resume, the potential employer got to see how the person speaks, how the person behaves, how they express themselves. So that in a way, becomes a pre-interview to the interview. Alright. So it helps. If you ask me, yes, we have had cases that can be evidence of how.. this documentation of their skillsets helps in getting a place in the job sector.
25	R	Hmm.. So in a way, it's like a.. shortcut..compared to other students..
26	I	You can say that. You can say that. Yes. Because if, let's say just from the certificates that you sent to the employer, your resume and your certificates, the Human Resource will filter and if they see the certificate is good, they might call, might or might not call the candidate for an interview. But, only during the interview they get to see how the person is face-to-face, how the person speaks, how the person express themselves. But from e-portfolio or video resume, they get to see.. even before coming for the interview. So it helps them to be filtered faster, than other candidates without this documentation.
27	R	Okay. So what about the students' learning sustainability? Learning sustainability here, meaning.. whatever that they learn during your stay, it doesn't stop. When they go for an exam, it's gone. No, it's not like that. But instead, whatever that they learned, they are able to sustain it. They are able to apply it during workplace and even they are able to.. go for continuous education or lifelong education, self-learning.
28	I	Okay. In that sense, students who are doing minor in IT, they are trained not through exam-oriented approach. Okay. They are trained by aa formative assessment, project-based assessment, project-based learning, collaborative learning. So these are their formal training to teach them the skillsets that they need or they require in order for them to be able to do their job outside. Because the project, their projects, their assessment that we give them are real-life project or authentic assessment, that they will face the same kind of... task when they go out there as teachers or as educators. Okay. So we are not focusing on as exam-oriented project, sorry, assessment.
29	R	Is there any reason why you focus more on collaboration, project-based, real-life, authentic assessment instead of just exam-oriented?
30	I	Yes, because to us in the Instructional Technology unit, exam-based will only last.. up until the exam day. Okay. These skills are not permanent. Okay. It's what they memorize, then they answer during the exam and that's it. It will be gone.. the next day. So what we focus on is giving them the skills that they need as an educator or as an Instructional Designer or as an Educational Technologist that they will actually use in real life. [Hmmm] So by giving them or by assigning them projects, or authentic assessment, they will learn the skills in a way, and these skills will remain because they learn it by doing, not by remembering. So once they do, it sticks. So when they go out there and they realize "This is what I did during my, in the projects during my study years". So.. this equips them with the right skillset and mindset preparing them for the real job

		sector.
31	R	Okay. So, can you share an example of the kind of assessment that you give them, and then what kind of product that is expected?
32	I	Okay. A few examples among the examples that I have done with my students. I assigned them, we all, I give them project to create interactive e-books, for example. Okay. So this is a real e-book that can be shared with people right away once they complete the project and this trained them how to prepare learning materials, self-instructional materials for learners out there, not just something that they memorize and answer in the exam. Or I assigned them to do instructional videos, okay, where these videos can be shared. So all the, all the skills involved in these two creations, for example, e-book, interactive e-book or instructional videos, the skills like video editing, audio editing, digital design, these skills are all skills that they can carry over, into a real job sector where it will not go wasted, once they graduate. [Hmm] Okay. And we teach them these skills to get them to be creative, to get them to be able to work as a group, as a team. So these are the skills that we focus on, and we use the, the current tool at the moment of teaching what is available in the market, tools that they need or tools that is current on that time and we encourage them to explore on their own, tools that they can use for the same project or for real life projects, editing skills, designing skills, production skills, all these skills that we teach them, we focus on the foundations of this skill so that, when they go out there in the job sector in the next five years, next six years, come whatever tools, current in the market on that time, they can still apply the same foundation.
33	R	Okay. All right. So just now you shared quite a lot actually. [Chuckles] So I would like to know, is there anything that you think could be done to enhance their chance of employability? So meaning to say something that is not being done yet, but you think there's a potential in the future.
34	I	I think the, the way to go.. to enhance their employability is to have themselves presented in a better way, so that potential employers can see them even before going to the interview. [Okay.] Okay. Going back, this is what I said about documentation of their skills, of their learning. So, e-portfolio for example, it's one of the way. Video resume for example, it's one of the way to enhance and this should be made compulsory to all students to have this, to have this promotion, to have this packaging of their skillset so that they can promote themselves even before.. they don't have to wait until the day of the interview to convince employees that this is who they are. [Hmm] So, before they have this, a good package already and they share this package to potential employers, for potential employers to filter, to see they are a very good candidate to be employed.
35	R	So, meaning to say don't wait until you're about to go for interview?
36	I	Yes, and yes correct. And don't just rely on traditional paper resume.. to prove yourself because there will be other candidates who has the same qualification, who has the same certification, who has the same, more or less the same resume as these students, what sets them apart? So, it's this kind of promotion or packaging that they need. So, in my case, what I'm trying, what I'm training my students to do is to package themselves in the form of e-portfolio or video resume, so that this can carry the promotion for- this can be their branding.
37	R	How do you suggest them to start their branding?
38	I	I mean, I have started with my students, e-portfolio, I will start from Year One and this will carry on, this will continue until they graduate. So, it's not just a one-course project. [Okay.] The e-portfolio that I get, that I get my students to do, for example, there are how many- seven courses that they have to do with me. Okay. So, the e-portfolio continues for every course that they are with me. [Ohh...] So, meaning they will have e-portfolio that summarizes their whole minor in IT that duration. [Okay.] Okay. So, this and this documentation is packaged in the form of website, that they can readily share with potential employer. They can give the employer, "This is the website to my e-portfolio", within the website their video resume, for example. You can, so.. they have their personal, in a way, they have their personal website that they can share, and within the website is the documentation of all their learning journey. That they can showcase who they are as a person. And these can be used to showcase their skillsets, to promote themselves rather than just promoting themselves. Some of them might have good qualification, but they might not be able to perform well in the interview, due to nervousness [Yeah] or something like that. So, this documentation in the form of e-portfolio and video resume speaks for them, even before going for the interview. So, this enhanced their employability.
39	R	Okay. So, do you set what kind of the platform, the website, that they are using or they have the freedom to use?
40	I	Okay. I used to give them the freedom, but aa... when I did that, it makes it difficult for me to assess their reflections or their documentation because of the different.. visual aspects of the

		platform, it gets confusing. Currently.. I get them to use only one platform. I am currently using Notion. [Okay.] So, I give them a template. So, this is where they document their reflections, their artefacts, their learning journey. So, it makes it easy for me to assess. Okay. But yes, in terms of visual, some students are saying that there is no variety. Okay. But I told them, this is just for the.. assessment. If they want, they can transfer all this data into a platform of their choice, and they can tweak this platform of their choice into however visual they want it to be. They can customize it how they want it to look like or to feel like. So, I give them the freedom. But for now, for the sake of assessment, I get them to use only one platform.
41	R	So, meaning the template, you have already identified what kind of information?
42	I	Yes. I provide them prompts. Okay. For them to answer, to respond to. So, they will not stray too far away from what I need them to do. But I allow them freedom also, to add on whatever that they want to add on.. if they feel that helps people see who they are. Okay.
43	R	So, coming back to the employability of the graduates, right? From your opinion, what do you think are some of the attributes and competencies that employers consider... important among graduates? So, you can list as many as you can.
44	I	I cannot speak for the employer. [Okay.] But if I were to employ anyone to work with me, I would want the candidate.. to have the skillset that helps them to do their job better and faster. And in these days, in the 21st century, elements, digital skills are one of the important elements that I will be looking at.. from any candidates. Okay. Digital skills, where they are able to use the latest tools, digital tools to help them get their job done better and faster. Okay. So, that is my main focus. So, to be able to handle whatever task given to them, in a very short time without, you know, being hindered by lack of tools.. or skills. Okay. So, if they can do their job fast and better with the help of digital tools, so that would be one of the criteria that I will be looking at in the candidate.
45	R	Okay. Anything else besides digital skills? What else do you think should be.. that do you think employees are looking for?
46	I	When you say employer, where I am at, I said as an academic... Okay. So, if I were to employ a fellow academic, okay. What I would be looking at also is their skills or their knowledge in Instructional Design, where they are not just a teacher who go into the class and teach, but they are able to design a very good learning experience with the help of knowledge in Instructional Design. Okay. They are not just teach, but they design and develop learning experience for their students. So, that would be a very good.. characteristic that I will be looking into a candidate for an academic. Okay. Because to me as an academic, you need to know how to design the best learning experience for the students. Okay not just go into the class and.. lecture. Okay. Because that would make a very boring class. Students has to be actively doing, actively participate in the class session. So, the knowledge in Instructional Design is very, very important and you pair that knowledge with the skills in using any educational tools or educational technology tools, and that would be a very good, potent combination.
47	R	Hmm.. So, you are saying knowledge in Instructional Design as well as knowledge in the tools that they want to pair.. [Correct] aa when they want to design the learning experience.
48	I	Correct. Correct. Yes.
49	R	And then another thing is digital skills, right? Digital skills on tools that help them do their work faster.
50	I	And better. Faster and better.
51	R	Okay. So, anything, any more attributes or skills?
52	I	I think.. of course, on top of their subject-matter, that would be mainly the skills that I'd be looking at, as an added value to a teacher.
53	R	Okay. So, out of the skills that you mentioned, can you rank which one would be the most important? Among the three skills that you listed earlier, digital skills, knowledge in Instructional Design as well as knowledge in tools that they want to use.
54	I	I think it's the same. The digital tools and instructional tools is the same. I would put it as Instructional Design and what do we call that aa.. Educational Technology. [Okay.] Okay. Ed Tech. So, if you were to ask me, I would put ID, Instructional Design or some people are calling it Learning Design on top. Okay. So, this is most important because this is your master plan. Learning Design or Instructional Design is the master plan. Because we have the master plan, you need the vehicle to carry out your plan. You need the tool to carry out your plan. So, the next comes to knowledge of Educational Technology because this will allow you to search for the right tool to execute your plan. Okay.

55	R	So, from your opinion, you would say that Instructional Design would be the most important skill. And then knowledge in Educational Technology tools would be the second.
56	I	Correct. If I were to rank it. I always see it as hand in hand. But if I were to rank, I would put ID on top.
57	R	What about skills like communication skills, problem solving skills?
58	I	Of course. Of course. Those skills also has to, I mean, it's a must. Okay. Regardless of how good you are in planning your instruction or your learning, or knowing what is the best tools for you to use, if you can't communicate those well, then your plan will not be executed as well as how you want it to be. So yes, communication skills, teamwork skills, all those skills are to me, all those skills are what you call that... [Necessary.] Necessary. It's a necessity. Okay. Every, I mean, whatever, if we look at our students here in KOED, regardless of their major, communication skills, what else do you say? [Problem solving.] Problem solving. These skills are all taught in other courses. Okay. So it's the same like what I said earlier... 10 people have the same skills, communication, problem solving, what sets them apart for my students? ID and Ed Tech. This is what I get them to document.. in their e-portfolio.
59	R	Okay. So speaking for communication, problem solving and all these necessities that you said just now, do you teach them how to include these in their e-portfolio?
60	I	Definitely.
61	R	How do they do it? How do they showcase communication..?
62	I	They have to document the progress of the learning activities in the classroom. They have to document and put evidence in the form of artefacts and they have to describe how it is done. For example, a group project. So they have to describe how they work with their group members, how they communicate. All these is a part of the reflection activity to be included in the e-portfolio. So when I read at their reflection, I get, then I will be able to know whether they collaborated well, they communicated well, they solved whether they solved all the problem or not. All these evidence included in the form of artefacts. These artefacts can come in the form of attachment aa video attachment, a photo attachment, whatever material that they feel suitable to be included as in the artefact in their e-portfolio.
63	R	Okay. So just now, all of the skills that you mentioned earlier are all included in your, I will say in your... learning design.
64	I	Correct. Yes. When I design, the learning experience for my students, all these are considered where they have to, because, that's why we mix, I mix, there are some individual projects. There are some group projects, because the problem solving skill is in the project, the communication skill is in the group project. Okay. So the project is not just to deliver the outcome, the main outcome only, but also for them to develop other soft skills, okay, required for them to be a good team player in the job sector.
65	R	Okay. What skills that they have gained during the degree that makes them attractive to employers? So just now you said they are prepared with the digital skills, as well as instructional design skills, right? So these two would be the main points, is it? That makes them attractive.
66	I	The main added value.. to their subject-matter.. for their major. Okay. So that would, to me that would be, I want to call that, a gold lining to their certificates. Okay. Their certificate or their qualification, it's not just a normal qualification, but it has a gold wrapping instead of plastic wrapping, if you want to say it that way. Okay. This added value or added skillset is what.. is a golden wrapping to their qualification that other students has also.
67	R	Okay. All right. Why do you think, because just now you said Instructional Design would come first, right? Aa... do you think it's important for employability?
68	I	If we are talking about employability in the academic world, yes. Because these students are teacher trainees, pre-service teachers. So as teachers, they need to be able to plan their teaching, to plan their lesson in a very systematic and creative way, so that their students get the best learning experience out of their class. So if you ask me.. whether this is important for their employability as a teacher, definitely. Because Instructional Design skill helps them to plan or to design the best learning experience for their students in the most engaging, active and creative way possible. So that's why- that sets them apart from other teachers who has the same qualification. Okay. 10 teachers applying to become English teachers, for example. Ten, sorry. Ten, TEASL graduates, applying to be English teachers. What sets.. this particular student who has the same qualification from other 9 students is he has knowledge, he or she has knowledge of Instructional Design. He or she is capable of designing the best learning experience for their students. He or she is able to create or to design active, engaging and creative classroom activities, because of knowledge that he or she gained from the Instructional Design class, for example. Okay. While other teachers

		just go into the class and.. lecture without students, very teacher-centred with not much participation from the students. So where does that knowledge come from? From what they learned in Instructional Design class or Educational Technology class, for example.
69	R	Okay. That would be the advantage of the knowledge gained for their employability, right. [Correct] What about their learning sustainability? How can knowledge in Instructional Design, Learning Design helps them for their...
70	I	Instructional Design field and Educational Technology field is a field that is evergreen. Okay. It evolves according to time. Okay. So students.. who has the knowledge in Instructional Design or Educational Technology, they know that they cannot remain stagnant.. in this field. Okay. They know that learning, teaching and learning as well as Educational Technology evolves over time. So they have to learn and relearn new ideas, new concepts as they- throughout their career. Okay. They cannot remain stagnant with the same technology, with the same approach that they learn forever. So that gives, that allows them to learn, to always look for new things. So that is lifelong learning skill for them. So.. they cannot just remain, for example, teaching using PowerPoint forever. [Hmm] Okay. They have to learn new ways to make it creative, to make it engaging. So in that sense, they will forever be learning. Technology progress very fast. All right. So if they were to stop learning, they will be left behind in terms of Educational Technology, because they won't be able to teach with new technology. Okay. When I was a teacher 10 years ago, there was no Kahoot, for example, there was no Quizziz, for example. So I made do with technology what I have back then. I think 10 years ago, there were only Facebook. All right. For example, but as time progress, new technology comes. Okay. Like Kahoot, Quizziz, there are so many other educational tools now. Different approach to teaching, which is there in Instructional Design, or Learning Design. So I have to keep on learning. And I have to keep on learning as well to teach my students, the current generation students, new ways, new technology. So it's the same mindset, the same characteristic that I'm trying to inject into my students when they go out to become educators themselves. You have to keep on learning. You have to keep on researching for new ways to make.. <u>your students learning experience the best that they can get from you.</u>
71	R	Speaking about this mindset, right? Have you ever faced students who have, I don't know if I should say negative mindset or not, but they have, aa they don't feel like technology is, they feel like technology is not that important. "They feel like if I go to this school, they might not have internet. So then what can I do?" So have you faced this kind of student?
72	I	Correct. Always. Always.
73	R	So then, what do you do to change their mindset? What do you tell them?
74	I	Mostly I.. teach by example. [Okay.] Okay. If something... I.. don't really like to tell students "You should do this, you should do that". I like to show students how it is, how it should be done. So I will showcase to them through my own teaching. This is how it is done. This is how it can be done. This is how it should be done. And when you go out there as a teacher, try to do better than what I did with them. So I tested it out with my students, new approaches, new technologies first. So I walk the talk. So I tell the students, yes, you might be in a different setting, you might be in school, primary school, different setting, but try as much as possible. And that's why I put technology second. That's why I put Instruction Design first. Because, even if they are in a setting where technology is not as digital as how they want it to be, it could be analogue technology. But if they have a very sound knowledge of Instructional Design, they can design engaging, active, creative learning activities using whatever they have around them. All that they need is to know how to collect and connect whatever they have into a very meaningful, engaging, active, and creative activities. So... I cannot just say that to my student. I have to show it to my students. This is how I am currently doing it, my time. If they were to go out into education sector in the next five years, something new might come, be ready, and you do better than what I did. Always try to be better. So because, their time in the next five years might be different. [Yeah] But I'm preparing them, their mindset to always learn new things, for the sake of giving new things to their own students. What I'm giving to my students now is the current new things now, it might be obsolete in the next five years. So I tell them, learn it in the next five years. Learn these new things. Teach it to your students. Because.. they might not be able to relate to what I am teaching them now. But they have to be prepared for new things. They have to always innovate. That's why I'm trying to- that's the mindset that I'm trying to instil into their mind to be an innovative.. educator.
75	R	Do you want to include that in the skills, in the qualities, innovative educator?
76	I	Yes. Yes.
77	R	So that would be.. aa what would be the ranking for innovative thinking, innovative educator.

78	I	An instructional designer has to be innovative actually, it is a subset of a good instructional designer, to always be innovative.
79	R	All right. So speaking of being innovative, being open to always learn new things, right. What are the strategies that you think the graduates should practice, early on so that they can enhance Instructional Design, Learning Design skills, Educational.. Edu Tech skills early on. Don't wait until the last minute. So something that they, the strategies or something that they can practice.
80	I	The strategies that I use.. is to give them real-life project, project-based learning... authentic assessment so that the skills that I'm teaching them is not just,, what comes from me in the form of lecture. It comes from them, in the form of doing what I say. Okay. So they learn it by doing. Okay. So that is the strategies that I hope will remain with them until they even way after they graduate, and the same skills that can be practiced when they go out into the workforce. Okay. Which is why.. I.. as much as possible try to stay away from summative exam-based assessment.
81	R	So all IT subjects will not have final exam?
82	I	Some has, but we are in the process of changing it to make it more or all project-based.
83	R	So speaking of this learning sustainability, right, where they need to continuously learn new things. What are the skills that you are teaching your students to help them learn better and to help them learn independently?
84	I	Okay. Aa... I teach them not to depend 100% on my sharing. And I also.. always supply them with additional information in the LMS, in our communication group. In this case, I use Telegram with my students. So.. on top of what is in the syllabus, okay, I prepare them a buffet of learning resources, where they can assess on their own, where they can self-study on their own to help them improve on the understanding of what I say in the classroom. So.. there will always be extra. So and I will always encourage the students learn not just from what I say in class, but also from whatever extra.. the side dishes that I provide in the LMS or in the Telegram group. Okay, so it's like preparing them. I don't just cook a single dish. I prepare them a buffet. So they can learn on their own as well. They can be.. independent learners, not just depending on my class session.
85	R	Yeah. And then they have the.. freedom to choose which one is suitable for them.
86	I	Correct. Correct.
87	R	Okay. So throughout the years that you have been teaching, have you ever predicted students that you know will stand out and will be highly employable in the future?
88	I	Yes. Yes.
89	R	So what made you predict that? Do they showcase skills or evidence that made you predict this?
90	I	Correct. All these skills or all these potentials, okay, students that have potentials, I can spot them early on from the project that they do in the classroom, or the skills they demonstrated in the classroom through the.. project, through their.. what we call, their assignments, okay, that I assigned to them in the classroom. So this helps me.. see who has the potentials.. to become a very good employee, okay, in terms of someone who can communicate well, someone who can lead well, someone who can design well, someone who can present well or someone who is very good in carrying out tasks. So all these, I can predict from the task given, as well as from their e-portfolio, from their reflection in their e-portfolio. So I can identify students who I can push to become more, to perform better, not just during their study years or even after they graduate or helps me also to identify students who need help in terms of improving their soft skills, their ID or technology skillsets. All these is easily detected from the projects I gave them, the tasks, the e-portfolio, their reflections. So all this helps me to connect and learn more from my students, okay, it helps me to improve my teaching as well. So their reflection for example, help aa allows me to evaluate my own teaching. So.. I allow them or I welcome from them, honest comments, they don't like it, just say it, but say why and even give suggestion how it can be improved. So all this I take into consideration. So in terms of predicting, yes, it can be easily be predicted.
91	R	So, are you still in contact with some of them?
92	I	Many
93	R	Okay, so how are they now in their career based on your prediction and the outcome right now?
94	I	Many are.. now well into the workforce, they have.. settled well into the workforce, some even go beyond my expectation. Some are having five.. aa very, I mean good pay. Some even though there are some who are not even in education sector, but related sector and having good pay and they showcase these, what do you call that, attributes early on throughout projects. So by giving them projects, the environment, the vibe feels like a small, a micro company. So I don't see them just as my students, I see them as my employee as well. So I could see their potentials. So it's

		like working with them. So the barrier of student-teacher is less, but it's more like a, you know... [Like colleagues] like colleagues, yes correct, that's the right word.
95	R	So they have the exposure early on, even before they join for internship. [Correct]. So this is like what you said just now, instead of waiting until the final year, final semester, you think that e-portfolio initiative should be compulsory for all?
96	I	Correct, because that helps them to document their progress, to document their experience, not just for them, for me as well as their teachers. Teacher.
97	R	Okay. So speaking of Education 4.0, what are some of the Education 4.0 tools that your students are using for employability? So Education 4.0 meaning currently we are in Education 4.0 where learning can be done online, it can be done online, offline, it can be done anytime, anywhere. You can learn at your own pace, you can learn not necessarily to be in the classroom, it can also be done outside of classroom. So are your students using Education 4.0 tools for employability?
98	I	Yes, the tools, the Education 4.0 tools and I mean after COVID, after the lockdown, so many things have gone hybrid. So I see these students, current and those students who have graduated now in the workforce, they are using all these digital skills, digital tools for their workforce. So they have the basic, they have the foundation set when there were students here, and now they like ease into it naturally, [hmm] because they have the foundation already. So now, they can naturally use whatever they use in their workforce, and without feeling alienated by it, it's not alien to them.
99	R	I like that term without feeling alienated. Yeah.
100	I	(Chuckles) Yes. Correct. Even though the tool might be new, a new tool but the foundation, the basics of the tool is the same as to what they had during their study years, as what I teach them for their projects. So because.. in my class, I don't focus on specific tools. I focus on the concept of the tools. What can the tool of this concept do?
101	R	Can you share an example, or a few examples of the concepts?
102	I	For example, whiteboard tools for example. Okay. I cannot just focus on one tool, let's say, because I know Jamboard. Okay. I cannot just, I cannot teach them Jamboard per se. Jamboard is a whiteboard tool, digital whiteboard tool, right? I teach them the concept of a digital whiteboard. [Hmm] So if they understand the concept of what a digital whiteboard is, they can use whatever.. they want, whatever comes their way. They can use Jamboard, they can use Miro, they can use Figma. So these tools share the same concept of a whiteboard tool. So, that's why I told my students, I don't really put, I don't really pinpoint on any specific tool or brand. Okay. I focus on the concept of what that tool can do. [Yeah] Adobe Illustrator for example, is for digital imaging, design. I cannot just because I know how to use Adobe Illustrator, I cannot get them to use the same because Adobe Illustrator is expensive.. for students to subscribe. So I teach the same concept that Adobe Illustrator can do using free or open source tools like Inkscape, like Figma.. for example. So my task is to teach them the concept of a tool. [Hmm] Like teaching driving, okay, I cannot teach them Ferrari, right? [Chuckles, yeah] I teach them how to drive a car. So given whatever car Ferrari, Kancil, they can drive. So that is the concept. I teach them how to drive, fullstop. I don't teach them how to drive a Ferrari, for example. How to drive a Kancil. The basic concept is the most important to equip students with.
103	R	So how are these tools being used? What kind of tools that they use for employability and then do they use the same tools for learning sustainability or is it different?
104	I	Yes and no. Not necessarily the same tools that I teach them but the tools that they are using currently, based on feedbacks that I get from my students who have graduated, share the same concept. And sometimes they found even better tools than what I taught them. And sometimes they share back with me of these tools. They say, "Oh, I remember you were teaching this when we were students but I found better tools" and I learn from them. Because the concept, they understood the concept already. So they can use this new tool that I might have never heard of. So it's a good foundation.
105	R	So in terms of the whiteboard tools, this one they use during their teaching and when they are in workplace?
106	I	Correct. Like collaborative tools for example, maybe way back I was teaching them collaborative tools like Google Doc, like Google Slides, tools that you can use collaboratively. Now they are using more advanced collaborative tools like Miro, like Figma, like Notion. Tools that I never taught them before but share the same concept and they already understood the concept. So.. that sustain and in the next five years, maybe new tools of the same concept will come. And they already know the concept. So that sustains their skillset. Because I don't focus on specific tool or brand. I focus on the foundation, the underlying concept of the tool.

107	R	So for the tools that you mentioned, what would be the advantages for their employability?
108	I	It goes back.. to what I said earlier, advantages would be, it gets them to do their job faster and better. Because that is what technology is. Okay, it helps us to do our tasks, our normal tasks better and faster.
109	R	And then, you also mentioned about it is the first impression of them before they go for interview, it acts like a pre-interview.
110	I	Correct. Because all these, what they know, what they have acquired, the skillset that they have acquired, they showcase it in their e-portfolio. They showcase it in their video resume. So this is the... their personal marketing team.
111	R	Hmm.. Okay. What about the disadvantages? Is there any disadvantage of using these tools on their employability?
112	I	The only disadvantages that I can think of is when they go to a place where they cannot execute or they cannot use the skill set or the knowledge that they have learned.. with me. Like poor internet connection or poor support.. from the place, lack of support in terms of digital tools. So.. I got feedback from my students that it is so frustrating when they know this is how to do it, but it cannot be done in their setting at the moment. So they got frustrated. Because they learned high-end skill, they learn high-tech but they go to a low-tech place, they cannot apply their skills. But that's why, I told them, that's why Instructional Design is most important. Because be it high-tech or low-tech, if you are a good learning designer, you will know how to design learning the best way possible using whatever that you have with you at the moment.
113	R	What about in terms of learning sustainability? What would be the advantages of using..
114	I	Of these tools? In a way, it sustains their learning because.. they.. while using all these tools, they will keep on searching for tools that can do it better, [Hmm] or tools that can do it faster or whatever that they want to do. Currently they might be using say, Miro for collaborative work with their colleagues. So, there might be things that Miro cannot do. So they will keep on learning searching and learn what else? What other tools out there that can make it better than Miro? So they keep on searching. So they won't stop learning at just one tool.
115	R	And then is there any disadvantage of using the tools for learning sustainability?
116	I	I think I just answered that question. Disadvantage would be if they learn high-tech and they go to a low-tech place, they will get frustrated.
117	R	Okay. So this one, is it focusing more on their employability for when they go to low-tech?
118	I	In a way yes. They need to be able to show their potential employer that they can do high-tech, they can do low-tech and they are prepared to adapt. That's the word. Okay. They are very adaptable. I teach them to be very adaptable even if you go to low-tech, you know what to do with low-tech. And if you go high-tech, you can give it your best because you have all the tools that you need. So most important is, an instructional designer has to be very adaptable. Okay. You cannot be stuck or frustrated with lack of system support, for example.
119	R	Okay. Actually we have finished all the questions. So do you have anything more that you like that maybe a conclusion?
120	I	I mean to conclude I would say based on what the questions that you have asked me, I think students have to prepare early on so that, they have to prepare their employability early on and not just wait until they graduate to prepare themselves to be employable. Okay. Package themselves. Okay. Prepare themselves. Promote themselves early on so that when they go out there, they have a very good branding of themselves that they can showcase to the potential employer. If that can be done, I think <i>InsyaAllah</i> they will be very employable. Some students now.. I mean a lot of students these days, their problem is.. they are still soul-searching. They don't know what they want until towards the end. But if they can pinpoint what they want, prepare themselves for it, they can be highly employable. And I hope my initiative with my students like e-portfolio, video resume, prepare the project, the task that I give them I send them, help to prepare them to have the right mindset and skillset preparing them to be a very highly employable, <i>InsyaAllah</i> .
121	R	Okay. Thank you so much for willing to be an informant and spending your time to be interviewed. The answers you have provided are eye-opening, hopefully that will help my research. Thank you so much, <i>Assalamualaikum</i> .
122	I	<i>Walaikumsalam</i> .

APPENDIX I

VERBATIM TRANSCRIPTION INFORMANT 5

Name: Lecturer 2

Place: Lecturer's room

Date: 15 June 2023, 9.30 a.m.

DU	R/I	Transcription
1	R	Okay, <i>Assalamualaikum</i> . Can you share a little bit about your experience as a lecturer? Can you share the program and subjects that you are teaching and... your students' level?
2	I	Alright, okay. <i>Walaikumsalam</i> ... So, regarding my experience in teaching, I've recently joined University Islamic.. International Islamic University Malaysia, IIUM, since two years ago, but still... aa...in probation period right now, okay. <i>Alhamdulillah</i> , this is my fourth semester. Well, basically, I have taught four batches. Of first year students, and most.... And each semester, I teach this one subject called Instructional Technology, for newcomers, for all the new students, because it is a Kuliyyah required course. That is one thing. Other than that, I do teach Instructional Design and Multimedia, which is a second-year course, programme. And then, for some semesters, I do teach third-year courses. One of it is Managing IT. And another one, I can't really recall the name, but the program ...the course has already been discontinued. Reason why it is no longer available in the IT unit. So, that is basically about me, a little bit about me.
3	R	Okay, so aa your students mainly, you are teaching subjects related to Instructional Technology?
4	I	Yeah, Instructional Technology.
5	R	Okay, what are their Bachelor's degree program?
6	I	Yeah, okay, for the Instructional Technology courses, since it is a Kuliyyah required course, all major need to take that courses. Well, basically, there are four majors, here in IIUM, there are ISED, Islamic Education, there are TAASL, Teaching Arabic as Second Language, TEASL, English as Second language, and also Guidance and Counselling. So, basically, all these major, Bachelor, they need to take these Instructional Technology courses for my class. But, for the specialisation, for the one that taking Instructional Technology as their minor, will come from TEASL student only, because they only allow TEASL student to take minor in IT. And yeah, TEASL student can also choose either one to go for IT or even.. Moral. But, most of the time, in my cases, the student from TEASL, they usually take IT as their.. minor. I would say, like, from 40 students, 35 to 37 students will take IT as their minor.
7	R	Hmm. Okay, alright, so how do you feel that their Bachelor's degree has prepared them for employment?
8	I	Alright, so, well, basically, aa when we talk about preparing them for their employment, they are basically a pre-service teacher, basically. They, by hook or by crook or by nature itself, and when they finish their degree, they will become a teacher, basically. So.. but, I do notice, when I ask in class, "Do you guys really want to be a teacher?" Some of them said, yes, they are clearly want to be teacher because they love teaching, but some of them, they are doubting themselves. I mean, they have other thoughts, they think that "I want to do something, but this is the only option that I have." So, some of them that taking IT, they can see that, "Oh, IT is something that can be a career too". Because I always inform them that.. there's a lot of opportunities nowadays for them to become a freelancer, basically, when they learn about IT, Instructional Technology or even Information Technology itself. Because, me, myself, previously, before I joined as a lecturer in UIA, I was an instructional designer, and.. from there, I share my experience that.. working as instructional designer is a promising career nowadays, because nowadays, people realize that instructional designer plays important role in

		terms of creating instruction for people to understand something new or some trainings. [Hmm] So, that is where instructional designer comes in. So, I do find that one student of mine said that, "Sir, I don't want to be a teacher anymore, I want to become a freelancer or even instructional designer". So... that's the thing. I would say that, in terms of preparing themselves, they are well prepared, they are known, they know that they are going to become teachers, but some of them, they are preparing themselves to become other than teachers. I would say they have options.. in terms of that.
9	R	Hmm. Okay, so, for those who don't want to become teachers, their minor would be..
10	I	Yeah, serving as another career path, I would say.
11	R	Okay. So, how well are you preparing your students for the job market? So, let's say, for those who want to become teachers, how do you prepare them, and for those who don't want to become teachers?
12	I	All right. Okay, that's a good question. To.... One of the things that I always remind them when I'm teaching in my class is that, when you become a teacher or not even only teacher, when you become an educator or whatnot, I always remind them that, "You want to teach someone you need to be on the same level with them first, and then you guys need to pull them up, don't expect them to come and climb to your level". So, meaning that they need to understand that.. if you want someone to follow and understand you, you need to persuade them. People don't like to be instructed. So.. it is best to use persuasion technique. That is one way. In life, I believe, I strongly believe, and I always remind my students for those who want to become teachers. Persuasion is always the best option when you're dealing with other people, especially with their students, one of it. Because nowadays, students are no longer need to be afraid with their teacher. They need to be.. friendly with their teacher. And then, one other thing that a teacher can do is to persuade the student to follow the instruction instead of giving instruction only. And then, for those who don't really want to become a teacher, one other thing that I do is that I introduce them to a platform, online platform, that they can sign up to do the freelance job, to sign up for free, how they can set up their own account, how they can set up their payment method, for the task that they get. Because most of the online platform like Upwork, Freelance, Fiverr, they will pay in USD. And the payment requires the freelance to have PayPal account. So, I do inform them. Because last time, back in USM, I was involved in one program called E-Rezeki, where they train a lot of digital freelancers. So, by chances, I do learned a little bit on how to set up all the accounts, and how to market yourself in that platform. So, I do inform that some of the students that doesn't really want to become a teacher. So, either they do it or not, that is up to them, but I do inform them with the information that they need, for the time being.
13	R	So, when you said just not about persuasion, right, can you give an example how you persuade your students?
14	I	Okay.... Okay, simple example. Usually, when we talk about, I want my students to submit assignments on certain dates. But I do know the state of the student that they always ask for extension. So, what I do is that I always set the due date a little bit early, than the date that I expected them to send, but I didn't tell them. So, that when they ask for extension, actually, I will always get the date that I want. [Hmm] So, showing that I'm not lying to them, but the thing is.. making myself more lenient on that way. So, when next time, if I have something to ask them, they have no issues to reject my request. Reason why they know that "Oh sir is good, he always give extension, deadline, and whatnot". So, give and take, but in the same time, the winner is always me. So, it's not really.. a little bit persuasion, but involve negotiation also.
15	R	Okay, so that's how you negotiate with them. And then it seems like you are lenient and you are okay. But, actually, you have your own agenda. (Chuckles)
16	I	Yes, I always have that my own agenda, because well, we know students. Even though we give them like two weeks or one month, the assignment, tomorrow, they want to send their assignment then, tonight, they will be doing it. So, that's a thing. I've been a student, been there too, so I do understand that.
17	R	So, just now, when you said about the, you teach them online platform for them to do freelancing, right, is there any reason why you teach this? Are there any benefits of doing freelancing?
18	I	All right, so just to get it clear first, when I teach about this freelancing, this is not under the curriculum itself, and not under the syllabus itself. So, this one is basically something that they come to my face to consult me, and then they just want to discuss more, not more than, not like, lecturer and student interaction, but more like a friend to friend interaction. So, basically, this one, one of the benefits that I think is that, back in my days, I don't have someone to..

		enlighten me with this kind of information. [Hm] So, since I do have, and I do see some people that have potential to be in this area, so why not I help them. So, that's the main point. I don't expect they thank me, they give me anything, they pay me for all the things. No. I just want them to see that there's always another way to do something in life, instead of not doing anything at all. Because we cannot really force them to become a teacher if they don't want to, which will lead to creating a bad example, a bad teacher, I will say, and a bad teacher will lead to bad students and so on. So, that is much more problematic in the future, I will say.
19	R	Okay. Alright. So, what else could be done to enhance their chances to be employed, besides freelancing?
20	I	This is an interesting, interesting question. One of the things is that, nowadays, I will say, people can become teachers, everyone can become teachers. When they enrol to the course and the program, they can become teachers once they finish the degree. But what are the added value? What are the added value that they can have? So, one of the things that me and my colleagues remind our students is that, you are a becoming teacher, but you also carry another badge. Another badge on your shoulder. Either you are educators, you are Ed Tech educators, which are a proficient user of new educational technologies. So, what are the added value that you can bring to the school? Everyone has a degree in teaching, but what are the added value? So, I always remind them to find something to add, to be added in your resume, in your.. skills. So, that you are become different from other candidates. And one of the things is that, nowadays, there's a lot of digital certificates that they can get online. And we always strongly suggest them to get Google Educators certificate, if I'm not mistaken. And then, since all students have Microsoft account, Microsoft also provide a lot of other certificates that is valid internationally, so that they can use and put inside the resume, so that they have these kinds of certificates, they are qualified, they are better than other candidates. So, added value, I always recommend them to add value to themselves, what they can be more, other than other candidates.
21	R	Okay, so, in terms of added value, you teach, you encourage them, right? To find, you know, not to find, to add more skills into their resume. Do you teach them how to collect the evidence, how to put it in one place? For example, in portfolio?
22	I	Yeah, that is one thing that, when I talk to the students, and this one, generally, to all students that I teach, I said, if you want to become a teacher, if you don't want to become a teacher, you should have your own portfolio. You should have your own portfolio to reflect and to showcase yourself to the world, actually. And one of the applications that I use for my classes is to use Notion. Notion is basically note-taking app, but.. we customize it to become our Learning Management System. And then, there is one section that they need to create their e-portfolio, where they put all the tasks, the assignments that they've done, during this semester, or perhaps, if they keep using it throughout the program itself, from Year 1 until Year 4, they can always use Notion to put all their works. And one day, if anyone wants to see their work, they can simply share the link, and people can view it. That is one thing. So I always say that, whatever kind of artwork or any task that you have, you should put it one place and share it to the world. And then, another thing is that, I always encourage them to start their LinkedIn profile, even though there is not much to put inside that yet, but they can always start small and then growing from that LinkedIn profile. But usually, for the time being, most of my students, the ones that I teach, they will have their own Notion account, they will have their own e-portfolio. So, that is their own place.. to put everything there.
23	R	Okay, so when you are talking about this e-portfolio, is it done by all lecturers in the Kuliyyah, or...?
24	I	That is not done by all lecturers, basically. So, basically, in.. this e-portfolio, come from the initiative of the IT unit itself. Yeah, so, the idea come from Dr. S and arwah Dr. R last time, and I'm continuing the legacy. Which I found that this e-portfolio is basically really helpful for the student to build their portfolio. And it is much easier to manage using Notion itself, basically. Because last time, they creating E-portfolio using Google Sites, if I'm not mistaken, but nowadays Notion itself is much more lighter and much more easy to navigate itself. So, that's why we transition to Notion. And most of the students, they are happy with the use of Notion to make their e-portfolio. So, I don't know.. some lecturers do ask the student to create this e-portfolio because some lecturers find it is important. And if I'm not mistaken, Dr. J, he already retired. He always aa trying to explore the new apps, to create this e-portfolio. But the one that always sustains creating this e-portfolio is basically the one that we teach, the one that taking IT minor courses, which is the TEASL student.

25	R	Okay, alright. So, aa in terms of their skills, what are the skills that your students have gained during their degree, that makes them attractive to employers?
26	I	Okay, one other thing that I find they have gained when they taking the minor in IT itself is that they know about the fundamentals of multimedia, one of the things that most people know what is multimedia, but what are the reasons behind the use of each multimedia itself? So, they learn about the theory behind it. Well, basically, I would say that all the students nowadays they know about multimedia because they was born with a smartphone with them. (Chuckles) [Yeah] I would say basically, so multimedia is not something alien to them. But they don't really know what is the fundamental, what is the theory behind it. So, from these IT courses, they learn why the texts need to be like that, why the colours should be like that. So, that is one thing that making them a better designer, that is one thing, making them understand what is the principle in designing certain things. And then, when we talk about Instructional Design and Multimedia itself, that course teach them on how to manage a multimedia project. But I always remind them that even though when you become teacher you don't really need to manage a multimedia project, but there's still project that you can apply the same concept or methods, when you become a teacher. For example, I always say that they can use the same method to manage Teacher's Day, let's say. But, well, managing project, most of the time, have the same concept. It's just that they have different contexts. But in that courses, Instructional Design Multimedia, I always remind them that whatever I teach today, they can apply it somewhere else.
27	R	So, when you give an example about this Teacher's Day, right, in the class, do they need to manage it from scratch, like creating a proposal?
28	I	Yeah, well, basically that is the interesting part in the course Instructional Design and Multimedia. There is only one project for them to manage, but the project is separated into five different stages. One of it is that to create a proposal, second is they need to create a storyboard. After that, they need to.. present their storyboard. And then they need to present their project development, and also final presentation and final report. Yeah. So, from then, they can see that when managing a project, there are several stages that they need to go through, because if they skip one stage, the project will become hard to manage. So, the process is the main things that I want the student to understand in that process, basically.
29	R	So, do you give them like a scenario "You are conducting a Teacher's Day", or they choose their own?
30	I	They basically choose their own topics, and most of the time, they digitalising some content that already being used in school. [Hmm] So, that one of the target audience that can use the project that they create is the teacher from school and the student from school. Well, basically, we can test out after they finished project. So, that's the aim.
31	R	So, for example, from the short story that they learn in school, they transform it? They digitalise it?
32	I	Yeah. They basically, for example, they are teaching English. Okay. Topic 1 is about grammar. So, they digitalise that to make it more interactive using all the new educational technology apps, and then, they can publish it and share it with the school to test out inside the class. Meaning that they are preparing something different from the ordinary. Yeah.
33	R	Okay. So, if I summarise it, the skills that your students have, the first one is design skill. Right? [Yup] They learn how to design. And then the second one would be project management. [Yes.] They learn to manage project. And then, erm would you say they learn how to do reflection of learning?
34	I	Yes. That is one of the tests for each classes. Basically, what we do for all the IT courses is that they are required to do a weekly reflection. Well, basically, the weekly reflection is when they have lectures only. If that week, they have presentation, there's no need for them to do a reflection. Well, basically, one of the purpose of doing reflection is that for them to, I would say, as an exercise for them, to reflect on what they have learned so that they remember and it serves as a notes for them, actually. And then, they can do it under Notion itself. So, they don't really have to get another platform or they don't need to write it on paper or any kind of things. They can put it under Notion and I can grade it from there. And then, this weekly reflection also is a good method for me to reflect on my teaching too. So, some of them, they are not quite talkative inside the class. But when they are doing reflection, they do give a lot of good inputs. Like, what are the blockers that they are facing during that time? Maybe they said that their classmate is too loud. Some of the explanation that I give is not clear. And then, from there, I can improve myself. At the same time, I can understand better my student, what they need and

		what can be added more in the next lesson or in the next semester. So, reflection do help both parties, the student and also me, to understand each other better.
35	R	Okay, so, this is one of the things that they put in their portfolio?
36	I	Yeah. Just to add, the questions that they need to answer in the weekly reflection itself, what are the artefacts that they found? Some of them, they just take a picture class, they take some picture from the slide as artefacts, something that they think important in that class. And then, what they have learned in the class, they need to reflect on that, they need to answer the question. How they plan to use what they have learned in class? And then, what are the blockers that they found inside the class? And then, last but not least, other reflection. The last part, the other reflection, well, basically, this one is the most interesting part, for myself. Because some of the students, I can see that when it comes to other things that they add on, they do find a lot of things that, outside from whatever I teach, but they share it there. So, which is a good thing for them and also a good thing for me. I always encourage them that, nowadays, since you are in higher education, you cannot expect the instructor or the lecturer to fit you everything. You need to find it yourself and you can share it with me. And then, if there is any disagreement, we can discuss on it. And we can learn from each other. So, I always encourage them to do that.
37	R	So, they always include this in their other..?
38	I	Not all reflection, but most of the time, they will include at least one or two things that they found new, other than whatever I have teach in class. New tools. New info, new topic. Or sometimes, they just want to reflect something that doesn't really relate to what I've already taught. "I think this week, the class is so fun because there is activity", something like that. Maybe sometimes, it is a fact, sometimes, it is just how they feel about the class.
39	R	So, they have the freedom, how they want to do reflection.
40	I	But the first four questions, it is a must-answer question. Just the number five is optional for them to write.
41	R	Okay. Alright. From your own opinion, right, as a lecturer, and previously, you were an instructional designer, right? [Yeah] What do you think are some of the attributes or skills or competencies that employees consider important among graduates?
42	I	Okay. One of the things that I found.... students need to prepare for making their chances a little bit higher, to be hired by the employers is that, they need to know how to delegate well and to work well with others. Reason why I'm saying this is that wherever you go in this world, there's always politics, we call it as politics, work politics, friends with politics and everything. So, they need to know.. when to become friendly, when to be firm with their decision, and then they need to know how to carry themselves and bring themselves to the spotlight. Because employers, they don't really want to know what is your PNG, the PNGK or whatnot. CGPA, what is your pointer, they don't really care. They really want to see either you can get the job done or not. What one of the things that I learned back in the industry. If you can get the job done, then they will hire you. And if you can convince them, they will ask you to stay. But if you.. there is a case when I was back in the company. I was on probation for six months and then there's another candidate that is on probation for six months. But I was late like two weeks from her, at the time. When I joined, I said, maybe I'm not better than other staffs here, but I need to be better than her. But I just do my task, I didn't sabotage her or anything. But towards the end, after finishing the probation, he was not accepted as a permanent staff, but I'm being accepted as permanent staff. So.. you need to know how to show yourself to the company itself. To the company, so that they trust you to hire you. So, students need to be prepared in terms of showcasing themselves. But at the same time, don't, how do I say it.. Don't oppress or <i>aniaya orang lain</i> .
43	R	Yeah. Okay. So, I would like to confirm, you said just now the skills that you feel like it's important for.. you think employers consider important. One of the skills is you think they must work well with others.
44	I	Yes, work well with others.
45	R	And then number two is, they know how to present themselves.
46	I	Yes. How to make yourself presentable and carry themselves.
47	R	And then the third one would be, they get their work done. They know how to get their work done. [Yes] Okay. So, out of these three, can you rank which one would be the most important? Which one would be number one?
48	I	Okay. So, for me myself, I would say number one to get the job done. Because when we talk

		about company itself, they always, by hook or by crook, they want the client to be satisfied with whatever they request. Because, me myself, last time, they assigned me like 12 projects at the same time. They don't care how I sleep or how I work. They just want to know that all the 12 projects is being submitted on the due date. So, getting the job done is the number one priority. And then the second one would be, they need to know how to work well with teams. Because when I'm working at my previous company, we always work in teams. So, well, we cannot, we cannot say that when we work in team, everything will be okay. Because sometimes we are the problem, sometimes other people are the problems. So, we need to know how to navigate and delegate to that. How to persuade people to work with us. So, that's the thing, the second thing. And then the last thing is that you need to know how to show yourself. Because when you work in team, sometimes there are some people that trying to steal your spotlight. So, you need to know how to be in the spotlight too. And sharing the spotlight. Or if that person is not qualified to be inside your spotlight. So, you need to make sure that that person didn't go into your spotlight. So, because the corporate world is a little bit cruel, I would say. Because if you don't do that, other people will take advantage on you. That is the thing.
49	R	So, do you teach these things to your students?
50	I	I don't teach them, but I explain to them as a story. [Okay.] Well, towards the end of the class. Five minutes at times, I share with them my working experience. And I will share with them some... I would say it is a funny story. But I don't know if they don't laugh at it, that's their problem. [Chuckles] But for me, I'm just sharing the story. So that, they can understand that this world, whatever world, they are right now. It's not even the real world yet. Because, back in my days, there is no human being that wants to share about this real world with me. So, I want them to have someone to share a little bit, so that they are not scared to jump into their career life. Because I do see that some students say, "Sir, I'm afraid to become, I'm afraid to work. I want to study, I don't want to work". So, I said "That it's not how life goes on. You need to move on, move forward and whatnot". So, I'm sharing this story for them to get some insights on how the real world works.
51	R	So, this would be the main reason why you always share this story so that they can get some ideas. Some ideas of how the future might be to them. Is there any reason why you are telling them these stories?
52	I	Yeah, because one thing, I have my own opinion is that in the future, working as an.. working and getting salary is, is no longer relevant. I would say that because you need to be someone that can create a job opportunity for other people. So, that I always say to them, nowadays there's a lot of opportunities. You need to try to break the cycle of getting salary. Because.. for me myself, I'm not saying that it is too late, but I'm already inside this loop, inside this chain. So, getting salary, working each month, paying all my debts. But you guys still have a lot of opportunities that you can try. You can become your own coffee shop owner. Any kind of thing that you want to do, whatever things you want to do, but try to look at the good side where you create job opportunity for the people. Instead, you are working for the people. Because if you have that mindset, you can actually help a lot of other people. So, I always remind them on that part, so that they can think a little bit outside from their comfort zone. Some of the students have a lot of things that they want to do, but they don't have someone to talk to. So, I'm always trying to be that someone. Even though sometimes I don't really know what I'm talking about with them. But.. I do share my experience and I do share whatever things that I know. And sometimes, ...I still remember that one student, she doesn't really want to become a teacher. She likes to become a translator. She wants to become a translator, transcriber, someone that translates the text from English to BM, BM to English or audio deciphering something. And then I said, I don't really have experience on that, but I do have friends that are doing that. So, I introduced her to my friends. And I'm not following up, but my friends did say that my student contact her. Maybe they are working on something. So, whatever link that I have, I always try to link with my friends and with my connections. And one of the students that I know that have a really good voice and English pronunciation, he likes to do voiceover. So, I introduced someone from my previous company that if you want to have a male talent, you can ask my student to do so, you can try to reach him out. So, he said that he'd been interviewed for that task, basically. Well, I do tell him that a voiceover artist, a professional voiceover artist, one sheet of A4, they can charge up to RM800 to RM1000 for the first page. And the subsequent page is RM500 or RM400. So, meaning that there's a lot of job opportunities that can give you good money. You just need to know how to find it, and how to market yourself. So, that is why I'm introducing him to my previous company.

53	R	So, you're the kind of lecturer who sees potential among your students and you help them to...
54	I	Yeah, because I believe that I believe in multiple intelligence itself. So, people can be excelled at many things, actually. Some people, they only think that they are good at education, but they're not good at something else, but actually they are good at many things. It's just that they don't explore or they don't tap into that area. So, they need to... They need some catalyst, I will say. So, I will try to be that catalyst for them to explore on their other potential. Because, one of the students previously, they have doubts in either to become a teacher or not becoming a teacher. Nowadays, they are so relieved that "I don't really want to be a teacher. Teacher is my last option, but I want to be this guy. I want to be designer. I want to be website developer". So, they already have their own goals, meaning that they have becoming sure on what they want to do, compared to last time. So, that is my aim. I don't want to persuade them because for me myself, I don't want them to make decision based on what I tell them. I want them to know what are their options. But, in the end, the one that making decision and being responsible towards that decision is they themselves. Because it's their life.
55	R	Okay. So, coming back to the skills that you shared here. So, your elaboration just now mainly focus on employability. Right? So, what about these skills? How can it help their learning sustainability? So, learning sustainability here meaning whatever that they learn during university, they can sustain it. It doesn't stop at exam. After exam gone. No. They remember what they learned. They can apply what they learned in their workplace. And even some of them, they go for lifelong education. They self-study. So, how can these skills help them with learning sustainability?
56	I	Okay. That is a question that I always wonder to. How they can use whatever they have learned through the semester, in their life. One of the things that I always remind them, or not not remind them, I always use in my classes that, why I work things that I teach in class. The example that I give is always related to the real world problems, the real world context. Sometimes, the example doesn't really reflect on the topic, but I try to make it more understandable. Let's say, I'm talking about ADDIE model, which is a model in instructional design. To give example, they always can learn about the definition and whatever they need to do inside the ADDIE model from the website, from the book itself. But how to give example that easy to understand. So, I relate them to concept. Let's say, you are becoming... You are in a chocolate factory, I say. You have a new machine. So, how do you use ADDIE to teach about this machine? So, we discuss from that. So, that they can see, oh, so this can be related to the model, but at the same time, the context is about this chocolate machine. And then, let's say, about the Bloom's Taxonomy itself, that 'understand' level and whatnot. So, I always use the example of Dalgona coffee. How I use that, maybe on the 'understand' level, "You know that this is Dalgona coffee, you can drink it, it tastes something like that". And then, how it ends towards the 'create'. You create your own Dalgona coffee menu. So, from each stage, I will elaborate on how they can see the Bloom's Taxonomy take place, by using the Dalgona coffee as example at that time. So, for me myself, to make sure that they can use and remember whatever they learnt in their class is that we need to relate whatever we teach with the real world example. Because it is much more easier to remember and understand. That is my take on that one.
57	R	So, are you saying, when you were giving this example, and then when they are learning about the ADDIE, Bloom's, do they, in a way, when they learn these skills, they get the job done, they learn to work in teams..
58	I	When I assign, I can say that when I give an example that related to the real world problems, and then when I assign them tasks to them to complete, they know how to relate that task towards whatever I teach in the class which means that, they can get the job done. And then, when I talk about leadership, when I talk about how to manage their team or project itself, they know how to work well with the teams. And the recent case is that one of my students said to me, "Sir, I want to change my group because my group didn't respond to me". Today is the presentation. That student texted me yesterday. So, I said, "Why not, we conduct meetings, include me in. I will be the moderator, you discuss with your team". And then she said, "Wait sir, I ask them". And I said, "If they don't respond, we will have the meeting". And <i>Alhamdulillah</i> , she actually, she didn't know how to approach the teammates itself, how to delegate with the teammates. Because this student, it's not last-minute student, maybe her teammate is a little bit last-minute-kind-of-student. So, there's an issue there. That makes her want to change the group. And then yesterday, she told me that the issue is resolved. They already know what they have to do. They are giving, they are having their own task to complete.

		So, that is the second point, where they need to know how to work well with each other. Well, in life, we can't really choose who we work with, especially when we go to the company. Same goes when we assign the task in the class with the groups. And then, about the spotlight itself, how to show yourself, I would say that when you do group work, I also remind them when you do group work, always keep activity log. So, whatever task you assign to your group mate or whatever conversation that you have, always keep track on that. Because that will be your backup or your evidence when things doesn't go so well. So, that is one way that they need to do in order to save themselves too.
59	R	So, when we are talking about this, right, the skills that you mentioned here, what are the strategies that you think graduates should practice early on? Don't wait until the final year, but they should practice from your first year, so that they become highly employable.
60	I	One of the things is that they need to be punctual. One of the things that I always think that a little bit lack in nowadays student, nowadays student a little bit lack on punctuality, especially in submitting the assignment itself. That is one thing that they should improvise... Because when you go to the real world, when you work in the company, due date is not negotiable, usually. Usually, most of the time due date is not negotiable. So, by hook or by crook, if they want you to submit tomorrow, if you don't finish it by tomorrow, then, there's a chance that you might be terminated from company itself just because of that. So, punctuality needs to be practiced since Year 1 actually. That is one thing. And then, the second thing that they need to practice early on is how to be confident and promote themselves. Because I do understand that back in my days, I was being scold by my teacher because I'm asking a lot of questions. They said "Shut up first, let me teach first before you ask questions". [Hmm] Well, we cannot really blame the student nowadays when we ask in class. They don't really ask questions to us. So, they need to practice to ask questions. I always say to my class, "You can ask anything, even though it doesn't really relate to whatever I teach, I want you just to ask. Maybe something little bit related should be okay, but doesn't always have to be something academic to us to me. Just as practice of self-to-ask question". Because I believe when you work with other people, you need to ask everything until you get the clear picture of what that client or that people need you to do, so that you don't make mistakes. So, asking. So, the next point is asking, asking question. You need to know to ask questions. And then, last but not least, I think they should prepare on how to manage their time. Because managing time is a lifelong learning skills. So, at certain age or in life, you need to manage your time between your school, your playtime and your sleep time. Maybe that's it. But when you become workers, there will be another time management set, when they become a father, parents or anything else, the time management is always changed from time to time. So, they need to practice. And I always remind them, my student, that when you are a student, there are 24 hours in everyone's life, make sure that you always try to have 8 hours of sleep. Because when you get that good 8 hours of sleep, other 16 hours will be functional for you. You'll become much better person. Because nowadays, I mean, well, I was a student too. Sleeping is not really the priority at that time. But, yeah, I do realise that sleeping should be prioritised more for us to function well for the 16 hours later on.
61	R	So, the few strategies that you mentioned just now about punctuality, how to be confident, and they need to practice asking questions, as well as prepare on how to manage their time. [Yup] Okay. What are the skills that you are teaching your students to help them learn better, to help them remember what they learned? So, just now, I remember you said about, you always give them examples related to real life, related to them, so that easier for them to remember. Besides that?
62	I	So.. giving examples related to the real world context is one thing. And then the second one, the reflection actually helps a lot from them. Okay. And then, when I do assign tasks to them, the tasks should be related to whatever I teach in class, and try to test out their ability to create something based on whatever I teach in class. For example, let's say I am teaching about a theory of multimedia design, and then I am teaching about text, audio and graphics, and the task would be to design a poster which involves text, graphics, and also maybe any little bit of animation inside that. So combining the three things that I teach into one task, so that is how I am testing the student on their understanding.
63	R	Okay. So, for the poster, meaning do they need to create a poster for real life, for example, for Teacher's Day?
64	I	Yeah. One of the poster is that they need to create wallpaper carousel of their resume, actually. Meaning that they are promoting themselves by using the graphics, creating their poster for themselves. And they can apply for jobs using it, they can publish it on their social media

		platform, as a task, and also as a thing that they can promote themselves.
65	R	Okay. Through all the years that you have been teaching, have you ever predicted students who will stand out? That you know have potentials and you know that they will stand out? [Yeah] Okay. What made you predict that? What is it that they showcase?
66	I	That is an interesting question. I can give you two answers to this one. One of it.. is when they do the reflection itself. Their reflection is really.. how to say.. Me as a lecturer, I become looking forward to read their reflections because of whatever they read, because whatever they share there. So it is really interesting to see. And then from there, they reflect on their assessment too. So I can see that these students do well in these two parts, which is the reflection and also the assessment, which makes them stand out from the other students. But.. there is one case that they do well in the coursework, but they don't do really well in the final exam. Because the final exam is about remembering, and then understanding and need to create words.. to explain about what you understand. Sometimes some things that we understand is easily demonstrate compared to written. So it might be the problem there. So.. we can't really say that if you're good in this coursework, scoring this coursework, it will be great in this final exam. So.... to see that they excel in both, I would say there is a little chance to see that happen, but some students have both of them. They are good at their coursework and they are also great with their final exams. Yeah.
67	R	Are any of your students already graduated?
68	I	No, the oldest ones are in practicum right now. They are not yet graduated. So I don't really have any graduated students right now.
69	R	So from the students that you mentioned earlier, the students who stood out, you can see it from their reflection. Do they showcase any skills from their reflection?
70	I	Well, in terms of the content that they publish in their reflection is one thing. And then the quality of their assessment. The quality make it different from other students. The quality is that they apply the theory that they learned in class. So that is the major difference. Some students, well, I do teach my students the same things in class about the theory and everything. But we can see from the assignment itself, if they understand the theory, they would apply it. Some of them, they just know the theory but they didn't apply in the assignment. Let's say, for example, dark background with dark text colour, which is wrong. But some students think that this is nice to have that, but in theory it is wrong. But some students still do it even though they know it is wrong. So.. that is where the quality differs between each assignment. Yup.
71	R	For the students that you predicted, how are they now? Do they continue with their...
72	I	Yes, as far as I know, they do excel each semester. Well, basically, to my knowledge, it is on their IT papers. For other papers, I don't really follow. But most of that I do know, they do excel. They get good grades on that paper.
73	R	Okay. What are some Education 4.0 tools that your students are using for employability? For example, just now you say, Notion, they use this for their e-portfolio and then, LinkedIn, right? So everyone is using it?
74	I	LinkedIn is optional, maybe some of them doing it, but some of them didn't use the LinkedIn itself. But all students of mine, they will have Notion account, that's for sure. And then they will have Canva for themselves, for the design process and whatnot. And then recently we got Pixlr for free. But that one, I'm planning to use that for the next semester, because just recent recent apps that we get. Basically, it is a editing apps like Photoshop, but much more simpler. And then they also use Microsoft Teams for their classes. What else? Yeah, some of them, they also use Adobe software. But for this Adobe software, there's an issue. Because Adobe software is a paid software. I always remind them that if possible, don't use the cracked version, because it can be harmful to their device. But if you still want to use it, use it at your own risk, but I'm not suggesting it. So some of them, they use it at their own risk and they did produce high-end quality works for their assignments.
75	R	So the tools that you use in your class, it doesn't include Adobe?
76	I	No, I do explain about Adobe, but I teach alternative software for them to use.
77	R	Mainly for their employability, just now is Notion and LinkedIn right?
78	I	Notion, LinkedIn and Canva.
79	R	So for Pixlr, Microsoft Teams, these are used for learning.
80	I	Basically it's actually a platform for online classes and whatnot.
81	R	So this would be for their learning sustainability, right? [Yup] Do they use any other tools for their self-study?

82	I	I'm not aware of that, but for me myself, I do remind them that since they have Microsoft accounts, make use of the OneDrive to store all the related documents towards their study, because they have 1 terabyte of cloud storage, make use of that. And then, I also do use OneDrive for as a place for them to submit all the assessments.
83	R	So besides Notion, they can also submit to OneDrive. [Yeah] What will be the advantages of using these tools?
84	I	One of it, all the data that being put inside OneDrive can be accessible anywhere anytime. Just you need to have internet connection. That's all. But the ease of use, you can get the information or data that you store on the cloud anytime. And sometimes I only manage my class using my phone, where everything is there. That is the convenience on that part. That is the most important advantage of using these apps, essentially.
85	R	So in terms of conducting your classes, you feel like it's easy for them to access and easy also for you to conduct your class. In terms of their employability?
86	I	In terms of their employability. I'm not sure about other companies, but my previous company. And to my knowledge, a lot of companies actually using Microsoft as their own company system. So basically, by having Microsoft during their degree time, when they go to the corporate company or when they start their job, it is not something new to technology for them to learn. So which leads them, which make them a proficient user of Microsoft 365 itself. And plus, nowadays I told previously, they can get all the certificates from Microsoft 365 and it is free, which become an added value for them to be employed, when they have this one.
87	R	Okay. So the resources are there, it's just up to them to use it or not?
88	I	We as IT lecturers encourage them to take it. But yeah, we can always bring the horse to the water, but we cannot force them to drink the water. So same goes to the student, we can always inform them, but we cannot force them to do that.
89	R	Okay. What about the disadvantages?
90	I	So the disadvantages sometimes I will say, erm... they don't have a proper device that can support all the new apps. Because to be frank, Adobe software is quite heavy to be used on low-spec computer. The computer might get burned when using Adobe software itself. So they need to have a workable device. So disadvantages to have a device, a working device, I will say. And nowadays, hopefully, the initiative of giving device to students to use for their higher education should be continued from time to time. Because the device is the main concern. When you want to use the new tools, you need to at least have a proper working device to support the tools.
91	R	So are all your students have the problem?
92	I	Some of them have problems.
93	R	And then how did you manage that? How did they learn with their device?
94	I	One other thing is that I asked them.. I just check on the compatibility a little bit, and I suggest for them to upgrade certain parts. But it is up to them if they are to upgrade or not. And then I do suggest that they use the computer that we have in our lab, but not much helpful actually. So.. I tried to ask them to get new device, but I suggest them on where to buy or what kind of device that you should buy. At least to get a working device, a properly working device. But I don't force them to go for a high-end device, that's one thing.
95	R	Do they all follow your suggestion?
96	I	Some of them do upgrade their device for the use. And some of them do get a new device for the classes. Because some of them, they are using their parents laptop previously, like back in 10 years ago, devices. Well, I'm explaining why they need to upgrade the device. Because technology, whatever technology it is, is going to be obsolete at certain point of time. So now is the time for you to change. So I informed them why you need to change it. Sometimes they just say that as long as this is still okay, can run certain things and that should be okay. But in terms of you want to use certain apps or certain tools, you need to have a better working device to do so.
97	R	For the students who are maybe they might have some financial issues, how did they go through this?
98	I	One of the things that my students share is that, they share the device with their roommate. Because they have a good roommate, so they share with their roommate. That is the only things that I heard. Because.. the tools that I use in class usually doesn't require high-end device for use.. to work on. So they can use a mid-range device for them to work on the projects and whatnot. And when it comes to group project, they can always share the device with their group

		mate. And then for individual tasks, they can always use their smartphone to complete the task. So that is another way. Because nowadays smartphone is something that everyone has. And then they are capable to do most of the things nowadays. Yeah.
99	R	So you said just about the device given. Are you saying about the PerantiSiswa?
100	I	Yes, the PerantiSiswa. Well, I'm quite surprised because last time, when the government gave the device, I would say it is a waste of money, because the device is not good. Well we heard the news, that the device was burnt during charging. [Chuckles] But now they are collaborating with Samsung, which is a decent device, which can be used in class and helps students a lot.
101	R	So some of the students, they receive this and they can use it for your IT classes. [Yeah] What about in terms of their employability, what will be the disadvantage of using the tools?
102	I	Hmm.. I would say not much disadvantages. One that I can think of the disadvantages of using these tools, is that the tools will not be used during their work life. Or the tools might be replaced when they are start working. Because technology changes from day to day, not from time to time. Nowadays, from day to day, every day there will be a new tech. Maybe when they start working, the technology will already be too advanced for them or something has been changed. So that might be disadvantages, but not really a major concern when we talk about these advantages. Because I would say that, when you learn about some new tools or new apps, consider this one. The first social media that I use MySpace, and then I transition to Facebook. But for me to learn on how to use Facebook doesn't take me that much time to learn about Facebook. Because the learning curve is much easier, because of the same components and things. Same goes to them. When they learn about something right now. And then there will be a new app for tools. The learning curve will not take a longer time for them to adapt or adopt the new system itself. More or less, the concept will be similar, just that they need to catch up the pace.
103	R	Just now when you said you teach them reflection of learning, and you teach them to document their work in e-portfolio right? How did this help you in teaching?
104	I	Okay, this one basically helped me when I see what I can improvise during the class, especially for the Question number 3. What are the blockers that they are facing for this class? Sometimes they say that "The explanation is not really clear, and then sometimes they say that the air-cond is too cold", something like that. But sometimes it relates to whatever I teach, sometimes it relates to the environment that they are inside the class. So from then, in the next class or in the next time I teach about that, I will always try to improvise.
105	R	And then in terms of helping your students, how does it help them for their learning sustainability? When they do reflection?
106	I	One of it, the reflection can serve as notes on whatever they have learned towards their courses. And then it can serve as a portfolio that they can showcase when they finish their study. Basically, both help in employability and understanding and remembering whatever they have learned.
107	R	So actually we are at the end, no more questions. So do you want to maybe add a conclusion?
108	I	Okay. To conclude this one, I would say that nowadays, everyone has the chances to learn. Either they choose to learn or refuse to learn. So the choice is in their hand. For me myself, I remind my student and myself, you need to do something in life. Don't just simply laid back and do nothing. So that is the mindset that I always taught my student, hopefully they take that into account. So.. hopefully we can produce a good students in the future. Because they are teachers that will teach students, and then these students will become human being and contribute to the community and society. So that's the whole.
109	R	Thank you so much for spending your time. [No problem.] Your sharing is very eye opening. Hopefully it will help with my research.
110	I	Alright.
111	R	<i>Assalamualaikum.</i>
112	I	<i>Walaikum salam.</i>

APPENDIX J

VERBATIM TRANSCRIPTION INFORMANT 6

Name: Lecturer 3

Place: Interviewer's car

Date: 17 June 2023, 10.40 a.m.

DU	R/I	Transcription
1	R	<i>Assalamualaikum.</i>
2	I	<i>Walaikumsalam warahmatullah.</i>
3	R	<i>Ok, sebelum kita mulakan, boleh tak Dr. share sedikit pengalaman sebagai seorang pensyarah? Apakah program yang Dr. ajar, subjek Dr. ajar dan juga mengenai pelajar? Mereka ni dalam tahun berapa?</i>
4	I	<i>Ok, saya seorang pensyarah di salah satu universiti awam di Malaysia. Berpengalaman mengajar selama hampir 20 tahun dan mengajar untuk pelajar Kejuteraan Awam. Jadi pelajar saya ni kalau dikatakan 20 tahun tu sebenarnya memang dah berbagai pengalaman yang saya lalui. Pelajar dari Tahun 1 pernah, sehinggalah kepada pelajar Tahun Akhir. Dan subjek utama ni lebih kepada core subject kepada Civil Engineering lah. Iaitu macam structure, design, structural analysis, macam tu.</i>
5	R	<i>Ok, dari segi student, mereka tidak diri daripada pelajar Bachelor?</i>
6	I	<i>Ya. Kebanyakan kita punya pengambilan pelajar, terdiri daripada pelajar lepasan Diploma, pelajar lepasan Matrikulasi dan juga lepasan Diploma Politeknik.</i>
7	R	<i>Ok, alright. Bagaimanakah Dr. rasa degree mereka ni? Ijazah Kejuteraan Awam kan, menyediakan pelajar untuk menghadapi employment?</i>
8	I	<i>Ok, kalau kita cerita pasal employment ni, memang di.. universiti, memang kita ada menyediakan, maksudnya kita sebenarnya.. kalau kita kata pasal kejuteraan, kejuteraan kita di-accredite oleh EAC, Engineering Accreditation Council. Yang di mana dia adalah di bawah Board of Engineer. Jadi, kami memang dah, daripada awal lagi sebenarnya, telah didedahkan dengan sistem outcome-based education. Di mana kita sendiri sebenarnya ada.. dalam syllabus setiap subjek, kita ada menyediakan program outcome yang highlight kepada skill pelajar, delivery skill pelajar dari segi knowledge dia, dari segi presentation. Jadi, dia terkandung dalam 12 program outcome yang kita dah gubal untuk setiap pelajar. Dan semuanya diterapkan dalam syllabus yang diajar. Maksudnya, setiap syllabus akan menilai mengikut PO-PO yang kita dah tentukan. Ha macam tu.</i>
9	R	<i>PO?</i>
10	I	<i>Program outcome.</i>
11	R	<i>Silibus outcome-based education ni, adakah dia dijalankan di semua universiti awam?</i>
12	I	<i>Ya. Memang EAC, EAC daripada yang Board of Engineer ni, memang dia dah tetapkan, program outcome ni. Sebenarnya, EAC sendiri telah menetapkan 12 program outcome ni untuk kita measure kepada semua pelajar-pelajar Engineering. Jadi, memang semua pelajar Engineering yang di mana universiti yang dapat accreditation by EAC, memang akan diukur keupayaan mereka melalui program outcome yang telah ditentukan.</i>
13	R	<i>Okay. Kalau dari segi Dr. sendiri sebagai pensyarah kan, bagaimana Dr. prepare pelajar untuk employment? Untuk job market, your students?</i>
14	I	<i>Kalau sebagai kita pesyarah sendiri, kita pastikan, maksudnya langkah pertama adalah kita mengajar mengikut syllabus dan di mana syllabus sendiri sebenarnya dah digubal untuk persediaan pelajar apabila mereka menghadapi dunia luar lah, apabila mereka tamat pelajaran. Jadi, maksudnya tadi macam saya kata tadi, kita dah sediakan 12 program outcome ni. Outcome ni terdiri daripada skill yang mereka sepatutnya dapat sepanjang berada di dalam universiti selama 4 tahun. Jadi, dalam masa yang sama, kita juga, dalam</i>

		syllabus kita, kita telah implement juga macam contoh beberapa perkembangan terkini. Meskipun IR 4.0, SDG, memang kita ada terapkan. Tapi bukan semua subjek lah. Dia bergantung kepada subjek-subjek terpilih. Maksudnya kalau subjek itu, dia ada banyak penggunaan macam komputer, software. Jadi, kat situ kita akan anggap subjek itu akan implement IR 4.0. Kemudian bagi subjek-subjek yang mungkin lebih kepada environment, jadi subjek-subjek itu kita akan masukkan pula elemen-elemen SDG. Jadi, kat situ sebenarnya kita dah bagi pelajar ni untuk bersedia dengan...Maksudnya apabila dia tamat dalam setiap kursus yang dia ikuti itu bermakna, the skill itu sebenarnya, the skill is there lah. Jadi, maksudnya dia dah grab skill itu melalui apa yang kita implement-kan melalui syllabus. Itu kalau dari segi syllabus matter lah. Tapi kemudian bila kita combine-kan semua ni, sepatutnya apa yang kita assume ialah pelajar itu bila dia tamat. Memang dia sepatutnya dah memenuhi semua ke-12 program outcome kita yang kita dah tentukan itu. Jadi, program outcome ni juga dia akan mencapai juga program objective. Maksudnya, setiap mata pelajaran akan ditentukan beberapa program outcome untuk mereka capai. Lepas itu, program outcome ni juga memenuhi objektif yang kita dah sasarkan untuk pelajar ni. Macam kalau di universiti saya, dia ada tiga program objective. Jadi, objektif itu yang kita anggap dia orang akan capai. Kemudian bila pelajar ni sudah bekerja, kita masih follow up lagi dengan majikan, untuk kita minta penilaian majikan terhadap pelajar-pelajar ni dari segi bagaimana program outcome ni memenuhi kehendak majikan. Dan juga bila pelajar ni juga sendiri kita akan tanya balik lah, buat balik semula survey, untuk pastikan yang adakah semua program outcome yang mereka perolehi, tadi 12 program outcome dari universiti ni, telah tercapai dan diaplikasikan ketika mereka bekerja.
15	R	Apa lagi yang Dr. boleh cadangkan, yang boleh dilakukan untuk meningkatkan chances student ni di-employed? Maybe something yang sekarang tak ada, tapi yang Dr. harap boleh dilaksanakan supaya in the future, pelajar-pelajar ni akan mudah dapat kerja?
16	I	So far, alhamdulillah, sebenarnya universiti saya ni merupakan, kalau ikutkan baru-baru ini punya survey, kita punya employability sebenarnya yang tertinggi. Tapi, tak apa kalau kita kata macam, masih ada lagi ruang untuk penambahbaikan. So, macam itulah sebenarnya tahap selain daripada pendekatan kepada teori, memang sebenarnya pelajar-pelajar ni perlu didedahkan kepada lebih praktikal, kemahiran praktikal. Jadi sebenarnya kemahiran praktikal ni, memang sebenarnya kita juga menyediakan pelajar untuk pergi ke latihan industri selama 2 bulan, 8 minggu lah. Sebab itu pun juga sebenarnya salah satu daripada requirement untuk mendapatkan EAC tadi, untuk mendapatkan akreditasi ni. Tapi dalam masa yang sama sebenarnya kita banyak juga libatkan pelajar kita dengan, sepanjang mereka pelajar, kita banyak juga libatkan mereka dengan aktiviti-aktiviti yang attachment dengan industri. Selain daripada mereka pergi latihan industri tadi, mereka juga mungkin selalu juga terlibat dengan macam contohnya, bila mereka Final Year, mereka ada satu subjek yang dinamakan sebagai Engineer in Society. So, subjek ni akan memberikan peluang kepada mereka untuk lebih banyak buat engagement lah dengan industri. Misalnya mereka perlu cari industri untuk bantu mereka untuk menyelesaikan beberapa masalah. Ataupun pendekatan menghapiri pelajar-pelajar sekolah menengah, contohnya kita buat aktiviti dengan sekolah menengah tapi dalam masa yang sama kita jemput industri untuk bersama. Jadi kat situ yang saya rasa pelajar-pelajar ni dah banyak terdedah dengan industri luar. Jadi kadang-kadang, masa tu juga lah sebenarnya dia ambikan peluang untuk dia orang cari kerja bila dia orang tamat nantilah.
17	R	So, yang attachment dengan industri ni memang dalam universiti Dr. memang buat ni lah?
18	I	Ya, memang ada. Itu memang subjek wajib lah.
19	R	Dia ambil ni buat waktu tahun bila? Engineer in Society ni?
20	I	Engineer in Society ni memang dia orang akan ikuti pada Tahun Akhir.
21	R	Menurut pendapat Dr. kan, apakah skill pelajar-pelajar capai sepanjang program degree mereka ni? Yang menyebabkan mereka ni, employer tertarik dengan mereka. Apa skill mereka capai sepanjang 4 tahun ni bila mereka dah habis graduate, skill-skill ni lah yang menyebabkan employer nak mereka.
22	I	Macam tadi saya kata yang 12 PO tadi, program objective tu, itu adalah sebenarnya skill dia. Contohnya macam katalah kalau saya nyatakan kat sini, macam contohnya program outcome pertama ialah ability to acquire and apply knowledge Mathematics. So, skill dia lah. Skill yang paling umum ataupun paling basic bagi pelajar-pelajar, dia mampu lah apply knowledge of Engineering, Mathematics and Science tu sendiri. Kalau yang kita tengok PO yang ke-2, dia mampu to identify, formulate or research literature on any problem ataupun

		any engineering problem. Kalau kita tengok PO 3 pula, dia mampu untuk able to design system. Jadi maksudnya design system tu dah mula nampak ke arah aplikasi dia kan. Aplikasi kepada apa yang dia belajar daripada Mathematics and Science, dia apply ke engineering dan dia mampu untuk design system. Lepas tu kalau kita tengok PO 4 pula, dia mampu untuk conduct investigation on complex civil engineering problem. So, dia kat situ lah kemahiran dia kan. Dia dah mula-mula bila dia dah faham, jadi dia dah boleh untuk buat investigation pula untuk lebih dalam lagi kan pemahaman dia lah. Tadinya lah macam tu kalau kita tengok PO 5 pula, dia mampu untuk utilise appropriate technique dan juga menggunakan modern engineering IT tools. So, masa ni kita bagi mata pelajaran yang ada berkaitan dengan penggunaan software contohnya, ataupun design software, design analysis ke kan. Yang ini kita akan masukkan subjek tu untuk mereka measure kemampuan pelajar dari segi PO 5 ni, sebab dia boleh gunakan IT system ni tadi. Macam tu lah. Dan seterusnya banyak lagi macam PO 6 contohnya, dia pasal Health and Safety dia ada kat situ. Kalau kita tengok PO 7, dia berkaitan dengan sustainable work macam tu lah. Dan seterusnya, jadi kalau kita tengok sebenarnya 12 PO yang dah ditetapkan oleh EAC ni, sebenarnya memang dah rangkum semua. Kalau kita tengok maksudnya graduan engineer yang accredited di universiti awam kita ataupun universiti swasta sekalipun di Malaysia, memang sebenarnya sepatutnya ini yang patut dicapailah. Dan bagi kami di universiti kami, kami memang sangat menekankan dari segi pencapaian pelajar untuk mencapai setiap PO-PO ni.
23	R	Yang ni nanti saya boleh search tak?
24	I	Boleh nanti saya akan bagi nanti.
25	R	Okay. Kalau menurut pendapat Dr. sendiri, apa yang Dr. rasa ciri-ciri, ataupun skill yang employer rasa penting di kalangan graduates?
26	I	Kita sebenarnya di peringkat universiti, kita sebenarnya memang kerap. Even kita sebenarnya ada penasihat industri. Kita lantik penasihat industri di mana kita akan adakan mesyuarat dengan penasihat industri. Boleh dikatakan macam setahun sekali ataupun setahun dua kali. Jadi penasihat industri ni memang daripada luarlah. Maksudnya daripada consultant ataupun contractor kan, yang bekerja dalam bidang kejuruteraan awam. Jadi mereka akan datang ke universiti ataupun kita set lah dia punya mesyuarat, untuk kita minta diaorang feedback. Jadi masa tu kita dapatkan apa yang mereka rasa kita perlu tambahbaik dari segi sistem pendidikan kita. Jadi kat situ sebenarnya, hubungan kita dengan industri ni sebenarnya tak ada gap lah kalau ikutkan.
27	R	Itu yang diamalkan di universiti Dr.? [Ha ya]. Kalau dari segi ciri-ciri ataupun skill tu, memang semua yang PO yang dinyatakan ni?
28	I	Ya betul. Dia memang balik. Macam mana pun dia akan berbalik kepada PO. Itu yang kita panggil outcome-based education tadi kita tu.
29	R	Daripada yang ni kan semua ke-12 ni. Boleh tak Dr. rank menurut pendapat Dr. sendiri, yang mana yang Dr. rasa paling penting? Maksudnya yang nombor satu, atau yang top three lah.
30	I	Kalau ikutkan semua penting. (Chuckles) Dia sebenarnya susunan dia tu, dia lebih kepada kalau PO 1 ni dia datang daripada yang mula-mula fundamental dulu. Maksudnya tadi kita nampak dia punya macam mana kita nak develop dia punya knowledge. Jadi kalau kita susun masa kita buat agihan PO ni kepada subjek-subjek, biasanya subjek tahun pertama ni, dia memang banyak subjek yang PO 1, PO 2. Maksudnya masa tu, pelajar masih lagi nak gunakan Mathematics, Science untuk yang nak digunakan apa yang akan diaplikasikan dalam mata pelajaran kejuruteraan kan. Tapi bila dia dah mula nampak matured sikit, Tahun Tiga kita dah mula kenalkan dia kepada macam safety tadi, kepada social kan, jadi kepada communication. Masa tu kita mula nak terapkan kepada itulah supaya masa tu mereka dah mula dilatih untuk mereka bersedia untuk pergi ke industri nanti.
31	R	Okay, kalau saya nak summarise sikit. Maksudnya daripada 12 PO tadi, ada belajar tentang design, ada pelajar tentang communication, social skill dan juga safety and health. Okay antara empat ni, mana yang Dr. rasa antara yang penting hingga ke kurang penting?
32	I	Okay kalau bila kita lihat dari segi engineering, of course kita nakkan pemahaman dari segi basic tu itu yang paling penting. Basic dari segi engineering lah sebab kalau dia tak ada knowledge yang engineering basic tadi tu, dia tak mampu untuk bekerja dengan cekap lah di luar, kan. Jadi once dia dah ada that knowledge, kemudian dia just preparekan diri dia dari segi bagaimana dia nak bekerja secara teamwork tadi ke, dia nak bekerja dari segi nak applykan knowledge-knowledge lain lah tadi lah macam safety apa semua. Jadi yang penting sebenarnya ialah dia punya fundamental theory, concept mesti berada di dalam dada

		<i>dia dah, masa tu sebelum dia keluar.</i>
33	R	<i>Okay so nombor satu paling penting dia punya basic engineering knowledge. [Yes. Betul.] And then yang akan datang tu, dia kena tahu macam mana nak bekerja dengan orang lain?</i>
34	I	<i>Ya betul, teamwork. Jadi teamwork-teamwork tu, walaupun dia antara di dalam PO kita, teamwork semua tu, tapi benda tu, dia masih boleh memperbaiki lah bila dia kerja. Sebab teamwork akan change kan, bila dia keluar kerja, teamwork dia akan berubah. Cuma dia dah tahu bagaimana bekerja teamwork tu dah ada, skill dah ada, cuma dia mungkin akan kena lagi mantapkan lagi lah kan, dia akan perbaiki lagi lah skill-skill yang macam tu. Tapi knowledge, memang kena ada kat situ. Maksudnya kalau dia kena belajar pasal design, pasal kiraan ke kan, semua benda tu memang dia sepatutnya mesti ada sebelum dia keluar, supaya bila dia keluar sebagai jurutera dia tahu bertindak bagaimana.</i>
35	R	<i>Kalau yang skill empat tadi tu kan, apakah strategi yang Dr. cadangkan untuk pelajar buat.. daripada tahun awal lagi, jangan tunggu last minute. Daripada First Year, apakah tindakan ataupun practice yang graduate boleh lakukan daripada awal untuk dia.. untuk menjadikan diri dia highly employable?</i>
36	I	<i>Kalau dari segi skill ni sebenarnya dia depends pada pelajarlh juga. Jadi kalau pelajar ni memang jenis active, kadang-kadang dari tahun pertama kita dah boleh nampak dia punya skill, kemampuan dia tu untuk dia nak bekerja sendiri. Kami boleh nampak kadang-kadang bagaimana dia boleh create the team kan. Kita nampak leadership dia pun, kadang-kadang dah boleh nampak walaupun dari tahun awal lagi daripada tahun pertama. Cuma melalui kursus-kursus ni bila kita.. setiap kursus ni dia ada objective dia kan. Jadi objective kursus ni berikan lagi mereka lebih peluang lah. Kadang-kadang peluang tu menyebabkan setiap pelajar akhirnya berpeluang macam kata buat presentation kan. Jadi sebenarnya presentation tu kadang-kadang kalau ada subject yang memang dia akan mainly focus pada presentation. Maksudnya subjek ni tu memang banyak presentation. Jadi masa tu lah pensyarah akan pastikan presentation ni mesti dilakukan oleh setiap pelajar. Itu satu. Lagi satu memang sebenarnya pelajar ni sendiri pada peringkat tahun akhir, mereka akan ada subject dinamakan sebagai final year project. Final year project ni memang lama sebab dia setahun. Sepanjang final year tu dia akan buat project. Ini sebenarnya memang fully pelajar itu sendiri. Sebab dia sendiri yang kena buat investigation berdasarkan tajuk yang diberi oleh pensyarah. Jadi dia sendiri kena buat investigation. Dia sendiri mungkin kena buat experiment, dan dia sendiri kena analyze data. Dan akhirnya dia menghasilkan satu report yang untuk dia present. Jadi kita buat presentation pun dua kali. Kali pertama, kita maknanya pada semester pertama tahun empat, dia kena present dia punya proposal. Masa hujung semester, memang dia kena present dia punya project dan kita jemput masa final year project yang kedua, yang akhir ni, kita akan jemput industri sebenarnya. Industri datang untuk bagi penilaian dan masa tu memang biasanya industri akan bagikan feedback yang sangat baik lah, untuk nak menunjukkan sama ada hasil kerja ataupun research yang dia buat tadi tu, mencapai kualiti sebagai seorang pelajar yang mampu bila dia bekerja nanti, sebagai jurutera dia mampu nak selesaikan problem tu tadi. Isu tu.</i>
37	R	<i>Boleh saya tahu kenapa universiti Dr. sangat menekankan hubungan dengan industri?</i>
38	I	<i>Sebab universiti kami ini yang agak dah lama jadi kita ada mempunyai ramai alumni yang telah berjaya. Jadi alumni-alumni ni sebenarnya yang kadang-kadang dia sendiri volunteer untuk comeback kepada kita untuk bagi bantuan kepada kita lah. Tapi memang sebenarnya bagi kita, hubungan dengan industri ni memang tak boleh terputus lah, sebab kita nak pastikan yang pelajar kita ni ready untuk masuk industri dan industri pun boleh terima pelajar kita dan dia faham pelajar kita ni macam mana. Maksudnya kita cuba untuk bentuk pelajar kita supaya dia diterima oleh industri. Itu memang kita punya objektif kita.</i>
39	R	<i>Okay. Yang skill tadi tu kan, yang Dr. share tu kan. Kalau dari segi learning sustainability.. Learning sustainability ni maksudnya, apa yang pelajar itu belajar, dia dapat sustain apa yang dia pelajari. Bila dia exam, dia bukan habis exam, terus lupa. Tak. Bila dia masuk tempat kerja, dia boleh apply benda dia belajar. Dia boleh buat lifelong learning. Dia boleh belajar on their own, even dah masuk tempat kerja pun. Jadi kan untuk skill tadi kan, design skill, communication skill, safety and health knowledge, engineering knowledge semua ni. Bagaimana boleh membantu mereka dari segi nak sustain learning mereka?</i>
40	I	<i>Even sebenarnya dalam PO kita ni pun, memang kita antara PO ni, kita nak pastikan pelajar kita ni, dia ada konsep lifelong learning ni tadi lah. Pembelajaran secara berterusan. So kita nak pastikan pelajar sentiasa belajar walaupun even sehingga mereka bekerja nanti lah. Sebenarnya proses of engineering education ni, memang dia tak akan berhenti. Sebabnya</i>

		once you pergi ke industri, macam you kerja di consultant, dia punya project ni berbeza. Jadi setiap kali project ni berbeza, kita memang kena belajar. Jadi maksudnya kalau pelajar kita ni, dia keluar dan masuk industri consultant, yang memerlukan mereka sentiasa dapat knowledge. Knowledge dia tak terhenti macam tu je. Knowledge dia akan sentiasa bertambah lah. Jadi kalau kita buat survey pun, kepada pelajar kita yang alumni ni, memang mereka akan mengakui lah yang semakin mereka bekerja, mereka akan berjumpa dengan berbagai lagi isu dan problem yang memerlukan mereka untuk sentiasa belajar sehingga.. sepanjang kerjaya mereka.
41	R	Jadi dari segi strategi yang tadi Dr. cadangkan, Dr. nak pelajar-pelajar ni dari awal kena aktif. [Betul] Kena aktif, participate. Kemudian ada subjek presentation, fokus pada presentation. [Betul]
42	I	Itu untuk kemahiran dia punya communication skill dia.
43	R	Communication skill. Kemudian leadership ni sewaktu kerja berkumpulan?
44	I	Yes betul, kalau leadership sewaktu kerja berkumpulan.
45	R	Apa yang skill lain yang Dr. ajar mereka supaya mereka boleh learn better, dan mereka boleh ingat apa yang mereka belajar?
46	I	Antaranya juga, kita buatlah beberapa macam aktiviti lah sebenarnya. Yang misal contohnya, mungkin kalau aktiviti kita pergi lawatan sendiri kan, lawatan tapak, site visit, macam tu. Itu antara yang biasanya dia lebih memberi kesan lah kepada pelajar. Dan sebenarnya dia lebih kepada macam tu lah, practical. Benda-benda macam tu dia lebih beri kesan. Ataupun kadang-kadang kita libatkan mereka dengan macam.. masuk tournament. Macam kadang-kadang ada juga pertandingan macam contohnya UTM kerap akan mengadakan pertandingan membina bridge. Jadi kita dedahkan mereka kepada macam tu. Maksudnya kita dedahkan mereka kepada benda-benda luar. Selalunya kita juga dalam ada certain-certain subjek, dia akan banyak menunjukkan macam the latest technology yang ada, yang sedang digunapakai. Supaya macam ni, pelajar ni dia faham yang ilmu tu tak terhenti di universiti. Maknanya, teknologi baru sentiasa ada, berkembang dan they have to be aware dengan benda-benda macam tu. Itu maksudnya cara yang kita cuba untuk nak pastikan yang the lifelong learning itu berlaku. Walaupun mereka telah tamat, dan juga mereka aware dengan any latest punya teknologi lah.
47	R	Boleh saya tahu contoh latest technology tu?
48	I	Latest technology tu macam kalau kita kata pasal construction, jadi itu banyaklah latest technology. Ataupun dari segi.. sebab kalau kita kata kejuteraan awam ni ada macam-macam. Kita kata dari segi teknik, itu latest technology juga kan. Jadi kalau.. bila pelajar ni keluar, dia tengok maksudnya kena design satu bangunan baru yang menggunakan bahan material yang baru. Itu contoh yang teknologi lah juga. Teknologi baru, yang bila dia kerja tu, benda tu dia akan jumpa. Dia tak akan jumpa dekat universiti. Jadi kita selalu tekankan. Kadang-kadang even dalam project, kita pun kadang-kadang kita minta dia orang come out lah dengan apa idea yang dia orang boleh bagi lah. That's why tadi saya kata kadang-kadang kita involve kan dia dalam macam tournament pertandingan rekabentuk ke kan. Jadi dia orang kadang-kadang combine dengan budak architecture ke, untuk nak dapatkan idea baru lah.
49	R	Sepanjang Dr. mengajar kan, ada tak Dr. predict pelajar ni akan berjaya in the future? Macam Dr. tengok, pelajar ni nanti one day dia akan...
50	I	Oh, kita punya harapan kita nak semua berjaya. Tapi biasalah, ada pelajar yang memang kita nampak sangat dia menonjol. Especially kadang-kadang pelajar tu sendiri dia pun terlibat jadi MPP lah. Jadi kita memang boleh nampak lah dia punya keupayaan tu untuk nak jadi leader. And finally bila kita tengok dia grad pun, memang dia mampu lah untuk seperti berjaya macam tu. Jadi kalau nak kata predict seorang-seorang tu, kita tengok kepada mana salah satu bakat lah. Kalau yang dia memang dapat menonjol, kadang-kadang semua pensyarah dah tahu dah, "Oh pelajar tu, memang patutlah dia berjaya". Maksudnya karakter dia tu sendiri kadang-kadang memainkan peranan. Jadi tak boleh nak kita nak kata kita develop, kadang-kadang sebab benda tu memang karakter jugalah. Kita cuma cuba buat untuk kasi sama rata apa, yang sepatutnya kita sampaikan. Tapi bagaimana akhirnya kemenjadian pelajar itu bergantung balik kepada karakter dia sendiri juga.
51	R	Karakter macam mana yang mereka tunjukkan tu yang menyebabkan Dr. predict macam tu?
52	I	Okay, karakter dia tu macam maksudnya kita nampak tadi lah skill macam kata leadership. Kemudian mampu untuk dia macam kalau kita bagi soalan, bagi problem, dia antara orang yang awal untuk selesaikan masalah tu. Kemudian kalau kita bagi apa-apa tugasan, dia

		<i>cepat datang kembali dengan macam tu lah. Atau kadang-kadang kita kata, "Okay, can you create a team" ke apa ke, dia cepat saja boleh nak cari team dia untuk dia nak buat. Kemudian kawan-kawan dia pun nampak bagi sokongan. Itu macam karakter tu memang selalunya dia khusus lah. Memang hanya untuk pelajar-pelajar tertentu saja yang boleh hasil karakter macam tu. Itu memang balik ke karakter dia kembali kepada individu tu jugalah.</i>
53	R	<i>Jadi macam mana mereka sekarang dalam kerjaya mereka? Mereka berjaya sekarang?</i>
54	I	<i>Ada yang saya tengok, ya Alhamdulillah dia dah berjaya lah. Maksudnya dia dah macam contoh ada pelajar saya tu. Finally, sekarang ni dia.. dulu dia FYP saya. Maksudnya saya adalah supervisor kepada dia punya project, final year project dia. Dia dah sambung sekarang ni dia tengah PhD lah. Maksudnya kita dah nampak lah kan masa tu. Kemudian kalau pelajar yang berada di luar ni pun, yang bekerja di industri. Memang adalah pelajar yang ada jugalah yang dia return balik kepada kita. "Sekarang ni saya dah mula buat project macam ni". Dia dah leading kepada project, certain-certain project. Dia cerita lah dengan rasa macam proud lah kan. Jadi kita pun bila dengar tu macam happy lah. Sebab, bukannya senang kan ada pelajar yang nak return balik. Kadang-kadang dia ucap terima kasih ke dengan apa yang kita rasa kita tak buat apa sangat. Tapi dia appreciate macam tu lah. So kita tahulah. Maksudnya dia bagi tahulah sekarang ni status dia macam mana. Maksudnya, bagi dia, dia rasa dia dah melangkaui kejayaan hasil daripada apa yang dia dapat daripada universiti, macam tu.</i>
55	R	<i>Okay, jadi apakah antara alat-alat Education 4.0 yang pelajar Dr. gunakan untuk employability? Education 4.0 ni sekarang ni kita dalam Education 4.0. Learning can be done anytime anywhere. Learning can be done online. Sometimes no instructor, no teacher but you can still learn. So, apa kah antara alat-alat yang mereka gunakan?</i>
56	I	<i>Okay, kalau secara general, sebenarnya universiti sendiri menyediakan platform lah. Jadi kita pun sebenarnya ada macam apa tu, M-O-O-C. MOOC. Kita ada MOOC tu. Di mana dekat MOOC tu, maksudnya memang dia adalah sistem yang bebas untuk pelajar gunakan untuk dia nak rujuk, untuk dia nak buat assessment. Tapi, dalam masa yang sama, perbelajaran secara formal tetap berlaku lah. Maksudnya dari segi.. kita punya contact hour dengan pelajar. Kata dalam seminggu kita perlu jumpa mereka 3 jam. Contact hour tu tetap berjalan. Cuma kita akan bagi galakan untuk mereka ikuti juga lah pengajian-pengajian tambahan yang kita dah sediakan melalui platform macam MOOC. So, itu antaranya lah. Jadi platform MOOC tu memang universiti sediakan dan kita sebagai pensyarah kita try to develop lah dia punya pengisian dia. Lepas tu, kalau kita kata dari segi pelajaran macam blended learning apa semua tu, mungkin selepas hasil daripada yang Covid hari tu, boleh dikatakan memang kita blend kan lah. Maksudnya tak semestinya pertemuan yang kita kata 3 jam tu berlangsung dalam keadaan face to face. Dia kadang-kadang dia juga boleh berlaku dalam keadaan virtual lah kan. Google Meet macam tu lah. Jadi benda-benda tu banyak lah juga dan juga ada juga macam inovasi-inovasi lain yang kita perkenalkan. Macam contohnya, masa zaman Covid tu kita tak mampu nak buat makmal secara face to face kan. Sedangkan subjek makmal merupakan subjek yang penting untuk belajar sebab dia kena tengok sendiri. Sebab it is a psychomotor skill kan. So, masa tu kita try lah untuk buat macam contohnya kita develop lah.. Walaupun nampak macam tak berapa orang kata ni tapi macam model macam kita panggil virtual lab kan. Adalah juga macam tu antara benda-benda yang kita try untuk nak supaya selari dengan perkembangan terkini. Dan dalam masa yang sama masa tu it is limitation. Because kita tak boleh buat pertemuan secara face to face antara pensyarah dengan pelajar. So, kat situ lah datang sebenarnya beberapa inovasi baru jugalah.</i>
57	R	<i>Yang virtual lab ni ada guna aplikasi apa-apa ke?</i>
58	I	<i>Virtual lab ni sebenarnya tak sampai lagi ke peringkat aplikasi sebab dia memerlukan kos yang tinggi sebenarnya. Sebab kita pun tak ada kemahiran apa kepakaran sangat dari segi nak buat orang kata guna internet tu kan. Tapi kita try lah gunakan macam yang orang kata simple-simple lah macam guna.. saya tak ingat masa tu kawan saya yang lain buat kan. Jadi maksudnya, kat situ student masih boleh faham lah kalau dia buat sendiri tu. Okay, ni step-step nak operate lab tu dia faham lah masa tu. Tapi nak guna katakan ada apps yang betul-betul ni tak lah. Dia macam apps-apps biasa lah. Kadang-kadang kita guna Excel, kadang-kadang apps-apps macam tu yang kita boleh ubahsuai sikit lah supaya dia orang boleh gunakan juga.</i>
59	R	<i>Nanti doktor boleh share apa yang kawan Dr. gunakan untuk virtual lab ni?</i>

60	I	<i>Okay, boleh.</i>
61	R	<i>Apakah kesan baik penggunaan Education 4.0 yang Dr. nyatakan tadi alat-alat tadi tu, apa dia punya advantage?</i>
62	I	<i>Kalau kita kata laboratory sebenarnya physical laboratory is the best lah. Sebab susah juga sebenarnya kita nak bayangkan macam kata bancuh concrete kan. Dia agak limitation lah cuma masa tu, kita bagi juga sebenarnya waktu Covid tu, kita bagi juga sample concrete cement ni kepada pelajar-pelajar untuk pelajar buat sendiri kat rumah. Maksudnya tetap nak, psychomotor skill tu tetap nak nampak juga. Kita post, masa tu kita tak boleh keluar kan. Kita post kepada pelajar untuk pelajar buat tapi dengan.. guidance kita lah kita guide dia orang melalui online meet tadi tu lah supaya dia orang nampak juga macam mana contohnya nak bancuh. Maksudnya dari segi kalau untuk kejuteraan ni, physical tu kalau kata laboratory punya isu lah kan, physical tu memang paling penting lah sebenarnya sebab dia kena nampak dan dia kena buat benda tu. Itu jelas. Tapi kalau benda-benda lain isu-isu lain tak ada lah maksudnya, IR4.0 ni maksudnya, latest technology ni memudahkan lah. Kadang-kadang kalau kita kata kita nak buat meeting dengan pelajar tu, pelajar katakan kadang bertindan masa dia orang pun ada banyak program, jadi kita kata, "Ok kita buat meeting". Bila-bila masa pun benda tu masih boleh berlaku kan macam tu contohnya.</i>
63	R	<i>Kalau dari segi advantage untuk employability mereka menggunakan tools ini?</i>
64	I	<i>Advantage tu kalau kita tengok-tengok memang pelajar yang, lately lah maksudnya pelajar after Covid ni, memang dari segi kemahiran dia orang guna apa the latest technology ni memang lagi better daripada dulu. Haa.. Kita boleh nampak sebab kalau dulu ni kadang-kadang kita suruh guna Excel ke apa benda, yang simple basic pun dia orang memang tak reti. Tapi sekarang ni dia orang memang lagi advanced sebenarnya. Even kalau kita suruh dia orang buat presentation ni, ya lah kadang-kadang kita suruh dia orang macam highlight kan benda tu kat social media kan. So kadang-kadang dia orang buat memang sangat interesting lah dengan gunakan TikTok ke benda-benda macam tu lah, YouTube ke apa jadi memang kadang-kadang kita pun tak tercapai lah sebab kita kira old generation punya kan. So macam banyak benda yang kita kena belajar. Tapi dia orang memang sangat cepat lah dan cekap. Kadang-kadang, kita minta dia orang pula yang boleh mampu untuk bantu kita sediakan bahan-bahan macam tu.</i>
65	R	<i>Jadi maksudnya disebabkan Covid tu macam ada silver lining lah di situ?</i>
66	I	<i>Mungkin lah saya rasa disebabkan Covid tu lah dia menyebabkan murid kita pun dia lebih banyak explore dan mungkin sekarang pun keadaan sekarang ni menyebabkan dia orang lebih banyak tahu lah kan benda-benda macam ni. Berbanding dengan kalau kita tengok generasi dulu kan masa pelajar-pelajar yang zaman awal-awal saya dulu mengajar, dia orang memang kurang lah pendedahan dari segi latest technology untuk education ni.</i>
67	R	<i>Kalau dari segi disadvantage kelemahan alat-alat tadi tu terhadap employability mereka, apa kelemahan? Macam tadi Dr. dia bagi satu tentang virtual lab. Kelemahan dia tak akan sama dengan physical lab. Lagi kelemahan alat-alat tu? Yang memberi kesan kepada employability mereka?</i>
68	I	<i>Rasanya..... tak nampak sangat kelemahan dia tu. Cuma, kadang-kadang adalah yang macam kita kata kebergantungan dia sangat-sangat kepada menyebabkan mereka macam.. rasa tak yah lah benda ni macam ni. Kalau dulu mungkin pelajar banyak ingat, benda tu macam orang kata benda tu melekat dekat kepala. Sebab kan dia dah terlalu bergantung dengan apa sahaja sources yang ada di dalam social media dan apa semua, jadi menyebabkan dia terlalu bergantung. Macam itulah. Maksudnya kadang-kadang build of confidence pun jadi kurang juga. Sebab dia rasa "Tak apa, benda ni ada. Nanti kita boleh cari", macam tu. Tapi dia sendiri tak nak try untuk nak explore atau nak menjadikan diri dia lebih matang kat situ. Maksudnya dia lebih banyak bergantung sangat. Ada jugalah pelajar begitu. Kebergantungan dia terhadap social media, terhadap dunia teknologi ni terlalu menyebabkan orang kata basic dia lemah sebenarnya. Dia jadi macam dia rasa, "Aku tak perlu hafal benda ni". Dia jadi macam malas. Sebab dia tahu benda tu ada. Tapi kalau kita zaman dulu kita rasa benda tu jadi macam.. contoh macam kalau budak-budak lah kan. Kalau dulu budak-budak sifir tu memang mantap hafal kan. Tapi sekarang, "Taklah, tak hafal sifir pun, tekan calculator je". Macam tu kan. [hmm] Macam tu. Macam ni jugalah pelajar benda yang walaupun dah matured macam ni. Kalau kita, kita rasa benda macam, "Ini patut awak boleh ingat dah kan". Dia kata, "Tak apa. Benda tu boleh ni". Jadi macam dia jadi kurang efektif lah bila dia kerja, sebab benda tu macam sikit-sikit nak kena refer. Sikit-sikit nak kena refer kan. Dia tak melekat. Kalau dia memang dah sentiasa gunapakai,</i>

		<i>hafal benda tu dia jadi melekat. Dia boleh jawab benda tu secara spontan. Ini kalau tak, dia akan cakap "Jap eh, nak kena refer dulu". Haa gitu..</i>
69	R	<i>Adakah Dr. mengajar mereka untuk dokumenkan apa yang mereka pelajari, letak dalam satu portfolio?</i>
70	I	<i>Oh itu memang ada. Itu memang ada. Kita amalkan setiap pelajar memang ada dokumen dia. Dan kita sendiri pun ada satu platform untuk kita letak segala bahan-bahan pengajaran, bahan-bahan rujukan semua untuk mereka akses lah. Memang ada. Dan pelajar pun kena buat juga daripada Tahun 1.</i>
71	R	<i>Adakah online atau offline?</i>
72	I	<i>Aa... Buat masa ni kita tak compile kan lah. Dia lebih kepada dia orang yang simpan. Ada juga yang kita memang akan, masa tu kita ada juga kita recheck tapi lately dah kurang sikit lah. Maksudnya dia lebih kepada dia orang sendiri punya documentation.</i>
73	R	<i>Maksudnya ni dia orang buat sendiri tak ada assessment ke apa tak adalah?</i>
74	I	<i>Kalau macam dokumen untuk nota ke apa ke tu, tak ada lah. Tapi kalau benda-benda lain tu sebab finally kita come out dengan dia kena submit report ke apa ke. Macam tu maksudnya ada lah. Kena dia simpan lah. Ikutlah kepada apa yang kita punya assessment kepada dia. Maksudnya kalau kita punya assessment tu, mengkehendaki dia untuk compile dia punya notes. Tapi biasanya jarang compile notes. Sebab biasanya assessment kita lebih kepada macam problem-based. Atau pun case study. Jadi benda-benda macam tu sebenarnya dia kena explore balik semulalah. Dia kena cari buat investigation, analysis semua.</i>
75	R	<i>Maksudnya, kalau macam FYP tu, kena simpan lah design dia tu?</i>
76	I	<i>Itu confirm. Itu of course. Memang macam kalau pelajar matang kan buat thesis kan. Jadi dia kena macam tu juga. Memang dia kena start dengan cari objective, problem statement. Semua tu dia kena lalui.</i>
77	R	<i>Lepas tu bila nak minta kerja, dia tunjuk lah FYP dia tu kepada...?</i>
78	I	<i>Itu depends kepada company lah. Kadang-kadang ada separuh company dia tanya... kan. Jadi that's why kadang-kadang kita pun suka bagi tajuk yang mana research dia tu boleh membantu industri. Macam contoh kan, dia propose new design ke. Jadi kadang-kadang, saya akan kata, "Pastikan benda ni awak buat dengan baik supaya bila awak pergi interview, this is benda yang awak boleh highlight. Jadi kadang-kadang kerana itulah juga yang menyebabkan dia boleh dapat kerja". Sebab dia highlight kan, masa dia buat FYP apa yang dia buat. So pengalaman dia tu lah sebenarnya is part of experience juga bila dia kerja nanti.</i>
79	R	<i>Maksudnya Dr. sebagai lecturer, Dr. kena tahu tajuk apa nak bagi kepada mereka?</i>
80	I	<i>Ya of course. Jadi yang relevan dengan industri. So yang ni berbalik kepada tadi, akan ber meeting dengan industri. Kemudian dari situ, kita tahu apa masalah yang mereka hadapi. Dan kita boleh bincang dengan students supaya mereka boleh tolong selesaikan.</i>
81	R	<i>Okay. Kalau dari segi reflection of learning, Dr. ajar mereka tak untuk reflect apa yang mereka dah belajar? Mereka kena tulis report.. Yang ni untuk FYP kan. Kalau untuk subjek-subjek lain?</i>
82	I	<i>Kita ada satu sistem lah. Nama dia SuFO. Menjelang akhir semester. Biasanya dia akan buat evaluation balik lah. Kepada pesyarah mengajar. Kepada knowledge yang dia.. Maksudnya kita macam measure dia balik lah. Sebelum pada awal semester dia ada entrance survey. Nama entrance survey tu. Maksudnya kita akan bagi beberapa soalan. Soalan yang berkaitan dengan subjek tu. Untuk nak measure sama ada dia tahu tak benda tu. Jadi kebiasaannya pada awal semester, memang markah dia ke sikit lah. Sebab tahap pemahaman dia macam kosong. Atau pun sikit saja. Tapi bila hujung semester, kita akan arahkan dia untuk buat lagi sekali. Sebab memang dia orang kena buat. Kalau tak, dia tak boleh dapat result sebenarnya. So dia kena buat lagi sekali. Kita panggil exit survey lah. Tadi entrance. Jadi ni exit survey. Kita tanya balik semula beberapa konsep yang penting. Sepanjang satu semester dia belajar, setakat mana pemahaman dia. Dia lebih kepada nak tahu dia faham macam mana. Dan kebiasaannya memang pemahaman dia akan bertambah lah. Maksudnya dia dah tahulah. Benda-benda yang basic yang sepatutnya dia tahu tu. Dia tahu. SuFO ni online. Memang semua subjek ada. Ini memang sistem universiti. Universiti yang sediakan. Jadi kita memang ada platform itu untuk kita just build up dia punya soalan. Supaya pelajar menjawab waktu awal entrance tadi, dan juga waktu exit tadi.</i>
83	R	<i>Adakah sistem ini membantu Dr. dalam mengajar?</i>
84	I	<i>Ya. Itu dia membantu kita dari segi kita buat kita punya penilaian, satu melalui tadi kita</i>

		<i>tengok pelajar punya entrance dan exit. Lepas tu, kita juga sebenarnya ada... Kita ada analyze semua dia punya PO-PO melalui dia punya markah. Bila kita buat assessment, macam soalan final exam kan. Assessment kita akan berpandu kepada PO yang kita sasarkan tadi. Jadi, dari situ kita dapatlah markah PO mereka. Lepas tu kita ada namakan sebagai CQI. Continuous Quality Improvement tak silap. Jadi kita ada satu CQI sheet, yang kita boleh nilai. Dan kat situ kita selalu akan buat cadangan. Untuk bila kita ajar semester depan, apa penambahbaikan yang kita patut lakukan supaya dia lebih baik daripada semester yang kita ajar sekarang.</i>
85	R	<i>Cadangan daripada student?</i>
86	I	<i>Bukan cadangan dari student, melalui analisa kita sendiri. Dan juga melalui entrance and exit survey yang pelajar buat tadi tu pun. Kita dah boleh nilailah. Maksudnya kita tahu pelajar ini, sampai mana dia boleh faham. Bila hujung semester tu. Penilaian yang dia bagi tadi lah. Apa tahap kefahaman dia tadi.</i>
87	R	<i>Kalau untuk portfolio ni kan, bagaimana boleh membantu employability pelajar?</i>
88	I	<i>Kalau ikutkan kepada pelajar tu punya... Bagaimana akhirnya dia grab knowledge tu sebenarnya. So nak kata portfolio tu sangat. Sebab rasanya buat masa ni. Kalau dia orang pergi interview pun, bukannya portfolio yang dinilai selalunya. Selalunya lebih kepada dia orang tengok result dia. Of course CGPA dia. Kemudian, bagaimana dia deliver waktu interview tu lah. Sebab dia orang waktu interview pun. Di situ dia orang boleh nampak level of knowledge dia orang setakat mana.</i>
89	R	<i>Maksudnya CGPA untuk subjek Civil Engineering penting jugalah?</i>
90	I	<i>Ya, itu sangat penting lah. Bila interview tu, biasa CGPA lah yang orang check dulu kan.</i>
91	R	<i>Okay. Dari segi learning sustainability, portfolio tadi tu membantu tak? Ataupun reflection of learning ni membantu tak mereka nak ingat apa yang mereka belajar?</i>
92	I	<i>Hm... Sepatutnya itulah yang berlaku. (Chuckles) Cuma, ya lah, mungkin ada lah juga pelajar yang macam tadi lah. Bukan semua pelajar mereka ingat semua kan. Tapi mungkin paling-paling tidak pun, kita ada satu lagi kursus. Masa tahun akhir, kita namakan sebagai IDP, Industrial Design Project. Sebenarnya itu juga adalah subjek yang mana sebenarnya dia dah rangkum boleh dikatakan keseluruhan knowledge yang dia ada. Sebab dia kena design satu project bangunan yang memang daripada ground up to upper level lah. Maksudnya, dia kena design bangunan lima tingkat. Jadi memang dia kena faham daripada konsep strength tanah tadi tu kan, sampai naik atas lah. Sampai dia siap bangunan tu. Jadi, kat situ sebenarnya, kalau dia boleh buat that subject, bermakna sebenarnya dia dah cover kebanyakan daripada PO kita sebenarnya. Jadi subjek tu pun sebenarnya dah cukup ending lah. Itu adalah yang kita summarize kan. Inilah pelajar kita yang sepatutnya.</i>
93	R	<i>Subjek ni yang ada dalam FYP lah?</i>
94	I	<i>Bukan. Dia bukan FYP. FYP tadi dia lebih kepada student tu sendiri. Individual skill untuk dia explore, cari masalah, selesaikan masalah. Jadi dia boleh bebas kepada apa saja masalah yang berkaitan dengan civil engineering lah kan. Untuk dia nak selesai. Tapi yang kalau tadi IDP ni, dia memang macam dia bekerja sebenarnya. Macam dia kerja kat consultant, dia kena design bangunan. Jadi maksudnya kalau kita kata civil engineer ni lah design bangunan. Jadi maksudnya dia memang kena tahulah nak design bangunan ni. Dia kena tahu pasal masalah tanah, masalah macam-macam lah. Masalah air, semua-semua kan. Semua tu dan juga bagaimana keperluan-keperluan untuk dia dapatkan kebenaran-kebenaran daripada authority kan. Semua benda tu dia tahu. Itu memang kita conclude kan semua dia dalam satu kursus lah untuk dia apply kan semua knowledge-knowledge tadi dia belajar masa Tahun 4.</i>
95	R	<i>Okay. Maksudnya yang subjek ni dia akan work dengan industry ke?</i>
96	I	<i>Yes. Kita panggil juga industri untuk bagi penilaian kepada mereka. Industry akan nilai design tu. Di situ pun dah balik-balik industry jugak lah.</i>
97	R	<i>Dia kena buat betul-betul ke? Dia kena pergi jumpa authority betul-betul?</i>
98	I	<i>Dia kena.. tak ada lah jumpa sangat. Tapi dia tahu the process. Tapi.. lepas tu dia kena buat presentation lah. Jadi kat situ kita nilai lah. Sebab nak jumpa authority pun, untuk apa? Sebab authority ni kalau nak jumpa, memang kita nak buat bangunan yang sebenar. Jadi tak ada lah dia cuma sebagai exercise. Tapi dia tahulah, "Okay kalau you nak buat macam ni. Kena start dengan jumpa authority. Kena dapatkan kebenaran merancang". Macam tu kan. Jadi semua benda-benda tu dia dah faham lah kat situ. Itu dia subjek akhir lah.</i>
99	R	<i>Maksudnya tugas ni adakah lecturer yang akan bagi? Atau mereka boleh design building</i>

		<i>dia nak macam mana?</i>
100	I	<i>Kita bagi guide lah. Ikutlah kepada dia orang untuk buat pilihan. Macam mana dia orang nak design. Biasanya, guide yang diberi tu memang yang apa yang industri minta.</i>
101	R	<i>Okay. Kita dah habis sebenarnya. Kalau Dr. nak bagi conclusion sikit ke before kita tamatkan?</i>
102	I	<i>Conclusion apa yang saya boleh katakan.. Pembelajaran kalau untuk jurutera. Maksudnya untuk menghasilkan seorang jurutera, ini sebenarnya memang dah ada orang kata platform dia lah, kan. Yang saya kata tadi EAC tadi tu kan. Jadi EAC tu dah buat satu platform yang sebenarnya yang orang kata dah complement untuk everything lah. Untuk menghasilkan bagaimana jurutera tu akan terhasil macam tu. Cuma bagaimana kita laksanakan dia. Dia bergantung lah balik kepada macam mana universiti-universiti, bagaimana nak laksanakan lah untuk nak fulfill apa yang EAC dah bagi guideline kan. Jadi kita follow kepada EAC. Kemudian daripada situ, kita cuba hasilkan pelajar-pelajar kita dengan kita measure dari segi syllabus, dari segi kurikulum, dari segi assessment. Semua benda-benda tu memang kita dah ada dia punya pattern dia sendiri. Macam tu.</i>
103	R	<i>Saya nak ucapkan terima kasih kepada Dr. sebab sudi meluangkan masa untuk interview ni. Apa yang Dr. share ni memberi beberapa dapatan baru lah untuk research saya. Terima kasih. Assalamualaikum.</i>
104	I	<i>Walaikumsalam. Good luck.</i>

APPENDIX K

VERBATIM TRANSCRIPTION INFORMANT 7

Name: Alumnus 1

Place: Researcher's car

Date: 24 May 2023, 11.30 a.m.

DU	R/I	Transcription
1	R	<i>Assalamu 'alaikum.</i>
2	I	<i>Wa 'alaikumsalam.</i>
3	R	Okay so aa I've briefed you just now about my research as well as aa your anonymity. So before we start I would like to know, can you share a little bit about your educational background? What was your degree in? Where did you graduated from?
4	I	Okay, I studied in IIUM. In... English Language and Literature. Graduated in 2014.
5	R	What was your major?
6	I	My major in... linguistics.
7	R	Do you have minor?
8	I	No.
9	R	So that was your Bachelor's degree? [Bachelor's degree]. How long was your, how long was the program? How many years?
10	I	Aa.. Four years.
11	R	Four years ha? And then you said you graduated in 2014. How long aa after that you immediately get employed?
12	I	Aa I got employed in the same year. Two months after, after exam.
13	R	Two months? So how did you find your job? At that time.
14	I	I found the job through... Erm.. Okay so my first job is I worked in a kindergarten. Okay. So I knew the owner of the kindergarten before, during the study because I did the second, I would say a part-time job, during study. So I met the person, I met the owner. And then the owner informed me about her... kindergarten and she said, if you want to work with me, just inform me anytime. So that's why I- after the study, I informed her to work with her.
15	R	So what was your, is that your... when you were in the Bachelor's program, is that what you wanted to be? You wanted to be a kindergarten teacher?
16	I	No, I don't want to be a kindergarten teacher. It's just a starting point for me to find another job. [I see]. Okay, so because my hometown is in a Kelantan. [Okay]. So my future husband, at that time, working in KL. So, I have to find a job aa around KL. So that's the starting point for me to find another job. At least I'm in KL, it's easy for me to go into, to go interview for another job.
17	R	I see. So how long was you... in the kindergarten?
18	I	Erm.. two months.
19	R	Two months.. And then after that?
20	I	After that I worked with, what is it? I worked with the company. It's a telemarketing. Ah, I worked. As what we call it, telemarketer, is it?
21	R	Telemarketer.
22	I	Telemarketer, okay.
23	R	So that one, how how long?
24	I	Aa telemarketer about six months.
25	R	Six months. And then? Can you continue with your working experiences?
26	I	Yeah, and then after that, during during the work, during the.. time I worked with that

		company...telemarketing company. Then I found out it's a bit... aa...not.. I don't find satisfaction. Because it's a bit of negative vibes.
27	R	What do you mean by negative vibe?
28	I	The working vibes. The working environment..
29	R	Is it because of the.. your colleagues or your boss?
30	I	Yes. Yes. Yes.
31	R	What do you mean by yes? (Laughs)
32	I	(Chuckles). The colleague and the bosses, because... <i>pilih kasih apa?</i>
33	R	Favouritism.
34	I	Yes, favouritism. So <i>kalau</i> you <i>tak</i> perform or <i>tak menonjol</i> , <i>orang akan bagi kerja banyak. Macam tu lah lebih kurang.</i>
35	R	Oh... So those who... they don't like, they will give a lot more work? Compared to those who they like?
36	I	It's like, if you're the boss's favourite, you'll get a longer break and can play games. But those who really focus on work, boss gives more work until late evening.
37	R	So you were the non..... favorite? (Chuckles)
38	I	(Chuckles). Non-favorite employee.
39	R	Okay. And then after that? After six months..?
40	I	After six months.. aa my future husband told me.. aa that his brother. His brother working place need a... lecturer for... English lecturer position. So I applied for that, and then I got it. Hmm.
41	R	So that one was, where did you teach?
42	I	In a private college. In Cheras.
43	R	How long?
44	I	Five years.
45	R	Okay. Wow. Five years. That's long. What makes you stay.. that long?
46	I	Because... Because... aa. Lots of reason.
47	R	Just in general..?
48	I	Because... Like... What's that? There are... aa the bosses they don't mind. They were not controlling. It's up to us.. to do our work how we want.. [I see]. They like.. they give us freedom. Ha.
49	R	No micro-managing?
50	I	No. And they were not that strict. So.. that made stayed for five years. And then.. let's say you're not feeling wel.. you can take a nap. It's okay.
51	R	I understand. It's not like they don't trust the employees.. you must sit at your desk only..
52	I	Haah. If we use our phone, they don't give warning or whatever..
53	R	So after that...? Currently, are you still there or...?
54	I	Aa.. No, after that... I find another job. Because of aa salary issue. So I choose another company. It's telemarketing as well. Aa but it's just for four months. Then after that, I.. quit my job. And then I do insurance.
55	R	So currently are you in.. insurance?
56	I	Yes.
57	R	What do you call your position?
58	I	Agent.
59	R	Agents. So, generally, agent lah. Is it full time?
60	I	Yeah, full time.
61	R	Aa how long? So far?
62	I	Aa.. One year.
63	R	One year. So are you happy now?
64	I	Yes. Better than before. Better than my previous jobs.
65	R	Okay. So, aa how do you feel about your... Because just now you told me you were graduated in IIUM in.. English Language and Literature, right? [hm hm] So, how do you feel that the program, has prepared you for employment? [hmm] I mean, does the program help you?
66	I	Okay. Okay. Because my working experience...There are many areas. So, there are

		certain... There are certain parts of the program that really help. Especially the teaching. For telemarketing, the program helps too. And even now, I think it helps.. Quite a lot.
67	R	In what ways? What's an example of a subject.. or.. something that you learned that helps you now?
68	I	In general, language <i>lah</i> . English language. Because I need it to understand the terms..aa because in my insurance company, the courses that we are taking are all in English. So we need to understand the terms and the words.. and then, in contracts, there are English terms as well.. and then.. during presentation.. some clients they don't prefer.. how do I say.. some people they are more into English, then they prefer to talk in English. So when I have the basic or background in English.. it helps a lot to speak the language.
69	R	So, that would be your main point <i>lah</i> ? [Ha yeah] That it helps you.. for your employment. Besides that?
70	I	Aa subject wise, I don't think so. Because for Linguistics, it's more specific. For example the study of meaning.. what do we call that? Semantics.. aa the subject didn't really help me.
71	R	For your current and previous employments right? [Yes]. Unless if you go into a different field like Literature..
72	I	Haah. The same goes to... If for Phonology, it helps in general. It's not like I correct other people's pronunciation.
73	R	Phonology.... what's that?
74	I	The one... about how you pronounce the word.
75	R	So, that one.. does it help you in your employment?
76	I	Aa.. Not really.
77	R	What about like.. your curriculum programs?
78	I	Co-curricular programs.. meaning?
79	R	Where you join.. Did you join your curricular programs... when you were in university.. that might help you in your employment? Maybe something that you learned, not in a formal classroom. But something that you learned outside of classroom. Maybe you joined clubs.. or workshops.. when you were in university.
80	I	I wasn't active. I joined this one club. But I was only active during first or second year..
81	R	What club?
82	I	It's related to orphans. Aa CARING, CARING Club.
83	R	Did you do a lot of... social responsibility..
84	I	Outreach. And social responsibility. CSR types. But I never joined that one. So they go to orphanage and teach them Maths, BM and help them with their homework.
85	R	So when you joined the club.. aa did it help you to prepare for employment?
86	I	A little bit..yes. Because when I join the club, there were a few titles that we have. Like secretary.. like that. That helps with employment. But for other experience, not so much.
87	R	So aa.. because you told me just what helps you is English language. But subject wise, not really, right? [Hm hm]. What can be done by the university.. or lecturer.. something that they can teach.. for better employment?
88	I	I think aaa more soft skills. Like presentation.. and how to approach people.. how to initiate conversation.. how to have a conversation with people.. higher level than us. Attitude is important as well.. attitude at the workplace, that's needed. And then.. more on employment. I think we have a subject focused on this. During the last semester.. What was it? Aa English for.. Occupational Purpose, if I'm not mistaken. I don't really remember.. (Chuckles). But we learned how to prepare meeting minutes.. and how to organize aa event from scratch.. from writing the proposal.. and then how to... aaa organize the event <i>lah</i> . That one helps a bit.
89	R	What else do you learn? Do you learn how to write a report?
90	I	No. No report.
91	R	What about resume?
92	I	Resume.. yes. It helps a lot. We learn how to create resume.. how to attend interview.. do's and donts'. That one helps. But.. aa.. because resume.. it changes right? Previous

		styles are different than current styles. So maybe lecturers should.. upgrade or improve on that <i>lah</i> .
93	R	So do you still.. follow the style that the lecturer taught you? Or you've changed how you create your resume?
94	I	I think I've changed following the current style. Plus, it's easier now because we have apps. Just need to key in info. That's it.
95	R	What app did you use to build your resume?
96	I	I think.. the app is.. CV Resume. It's a mobile app. Just key in address, phone number, picture, education, working experience.. then it will generate. Then we can choose the format that we want. We don't need to do it manually.
97	R	Where did you know about this.. CV Resume?
98	I	Aa.. from my husband.
99	R	So.. did he learn about that during university?
100	I	No. That one, he knows from his brother. Oh.. I'd like to add.. in university, there should be more programs.. aa to increase confidence level. Because.. from my opinion.. among Malays, our confidence level is low.
101	R	Why do you say that?
102	I	Because other races are more outspoken. I'm not sure because of confidence.. or their race. For example, if we go to LRT, [hm hm] Malays are shy, timid, not talking.. but others, they are outspoken. So I'm not sure it's related to race or what..
103	R	Maybe due to culture kot..?
104	I	Yeah, maybe.
105	R	Maybe Malay culture is more.. reserved..?
106	I	Hmm.. and then.. for example.. if you look at most.. aa because currently I'm in insurance industry right? [Uhuh]. So from my observation.. most who do surveys.. approach people and direct-selling.. mostly are Chinese. The way they talk.. we can see their confidence is high. If Malays.. especially myself <i>lah kan</i> .. so if I want to direct approach.. I feel shy to start talking.. I fear of others' perception.. do they want to listen to me talking? Ha.. like that. It's different if we compare among races.
107	R	So, what do you think some of the attributes... or <i>ciri-ciri</i> or skills, or competencies that employers consider important among graduates? From your point of view? What are the skills that employers are looking for?
108	I	I think the most important is those who don't need much guidance.. what do we call that?
109	R	Independent..?
110	I	Independent.. or those who can do work without waiting for instructions.. creative.. aa high problem solving skill.. aaa.... They take initiatives to learn.. because my opinion.. I think employers don't want to hire those who only do what we ask them to do. If you say A, they only do A. For example.. bosses want us to organize event. They'll just say "Please organize an event. A birthday party for staff." So.. we are the ones who need to look for venue.. catering.. and all that.. So we need to know what to do.. It's not like the boss will say "Venue is here, food is from here.. bla bla bla". Bosses don't want that. For them "I have paid you, you do the work. You think."
111	R	Okay. Besides that.. do you want to add more?
112	I	If let's say for being honest.. trustworthy.. of course <i>lah kan</i> . It's just that, those cannot be assessed from the beginning. The one that we can assess.. one of things is.. aa confidence. The way they talk. Confidence and then aa... communication skill. And then aa..... aa well-mannered.. and those who listen to instructions. They do not rebel. Ha.
113	R	So.. out of the list that you listed earlier.. can you rank.. which is the most important..? That you think all employers are looking for that quality?
114	I	Can it be more than one?
115	R	Yes. You can choose maybe top three.. up to you.. and then the least important as well.
116	I	The most important I think problem-solving and creative.. and then confidence.. and independence and communication. Those are the most important.
117	R	And then, the least?
118	I	Being honest and trustworthy. (Laughs)
119	R	(Chuckles). Meaning employers don't really mind these right?

120	I	Ah yes. It's easy. If the person is not trustworthy, they can just fire him or her.
121	R	What else that are not as important?
122	I	Aa... well-mannered is also not important.. because sometimes those who are well-mannered, they don't really perform at work. Usually they just wait for instructions. If boss didn't ask, they won't do.
123	R	Why do you arrange in that order? Why do you listed problem solving, creative, confidence, independence and communication at the top?
124	I	Because those are the skills that make graduates able to do their work.
125	R	Meaning? What do you mean by "able to do their work"?
126	I	For example, if the person doesn't have problem solving skill right.. they need other people to settle their work. Meaning they fail to do their work. They are unable to do so. If they don't have problem solving skill. [Hmm] The same goes to creative.. let's say.. suddenly there's a problem, but the person is not creative to think of a solution.. he or she will burden other people.. to do the thinking for him..
127	R	So and then for confidence and communication?
128	I	Confidence and communication are needed when the task requires them to work with other... person. This is important because if they are not confident.. and have poor communication, it might give bad impression to the.. company. For example PR.. but poor communication skill.. so people might not trust or believe in the company..
129	R	Okay... if for learning sustainability.. are these skills important to sustain what they've learned during university? Learning sustainability is... learning doesn't stop at exam.. they can apply to real life career.. they can do self-study.. they don't wait for people to teach them. So.. does the skills help for their learning sustainability..?
130	I	I think yes. Because they need to improve from day to day. If you want to learn communication skill.. you have to.. learn more.. on how to be expert in that field. So if they are independent.. they will take initiative to explore and do self-study to improve their communication skill for example.
131	R	Okay.. So, what are the strategies that you think graduates should develop ..or practice earlier..? During academic years, don't wait until the end. Something that you think they should start early when they were still in university?
132	I	I think confidence lah. How to improve confidence level.. you should start earlier. Because confidence <i>ni</i> , it's not like you learn today, tomorrow you'll be confident, no. It takes time.. for example from when we were little.. when we go to the store, we didn't have the guts to talk and say what we want to buy.. but after a few practices.. we become confident. And then another example.. when we grew older.. we didn't have the confidence to talk to lecturers and teachers.. but after we practice, we will be come more confident. So to develop confidence.. we need time and we need to practice.
133	R	Okay.. so how do suggest graduates to improve their confidence?
134	I	I would suggest them to participate more in social activities.. For example like going to social events.. or join competitions that require them to be more outspoken.. even more like volunteering.. in classes is okay too.. as simple as that. For example, in class, lecturers will ask "Who wants to be the class rep?". So when you volunteer yourself, aa at the same time, you have the chance to communicate with your teacher.. with your lecturer.. and then you can aa transfer the task to your classmates. If you're not confident, you cannot transfer. But you still need to do it. Do you get what I'm trying to say?
135	R	Yes. Yes. If for learning sustainability? For them to remember what they learn, what should they practice early on?
136	I	I think if they don't know something.. they need to find alternatives.. because sometimes we don't know something, but we just let it be and didn't do anything. For example <i>lah</i> .. any <i>bantuan kerajaan</i> .. so we just wait.. we didn't ask at the counter "How to apply this?".. so if we didn't ask, then we won't get it <i>lah</i> . This is just example <i>lah</i> .
137	R	Did you do that when you were in university?
138	I	During my studies, I joined clubs to improve my social skills. I also worked part time during that time.. in campus.. I also communicated with people from different levels and backgrounds. Because I worked as a hairdresser at a saloon. When I worked there, I learned a lot. For example, one customer, she was a cleaner. She told me, she was

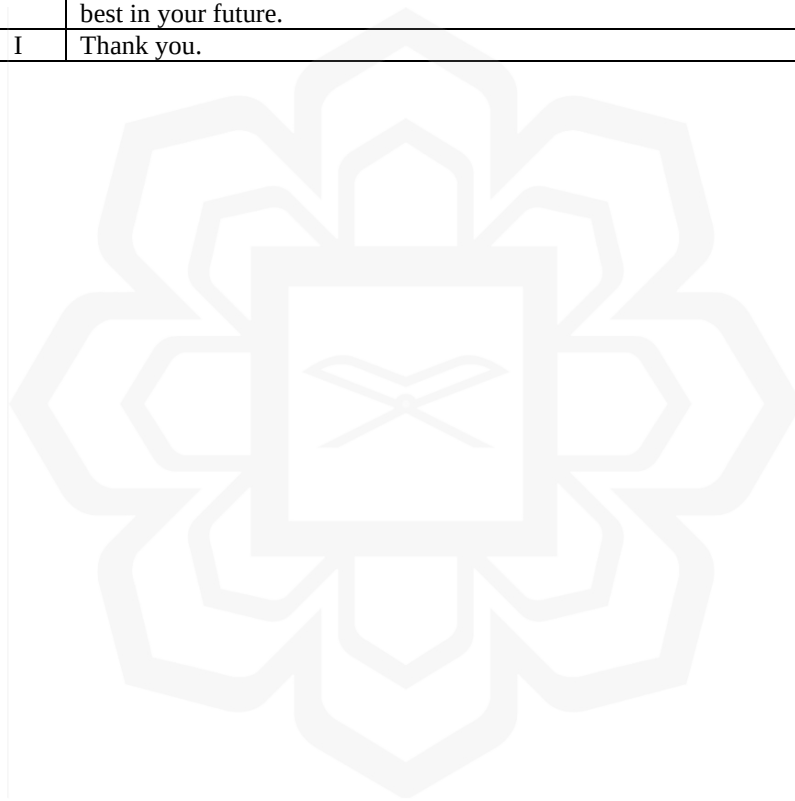
		bored at home and that's why she took the job. And then every year, she went for <i>umrah</i> . Meaning we shouldn't underestimate.. even if she's a cleaner, maybe before that.. she was a manager.. and then she retired. Then she wants to do something, so she becomes a cleaner. And it's noble as well.. to clean our heart. [Hm hm] And then, the other customer, she was a lecturer. I didn't know her because <i>ya lah</i> , UIA is huge. After a few times, then I knew about it. So I knew I had to change the way I address her, I cannot talk to her like I to talk to my friends or my aunties.. So of course I cannot say "Makcik sihat ke?". I said "Puan sihat ke?". That's what I said about communication skills.. how to talk to someone higher level.. and so on.
139	R	So.. do you recommend students to start working part time as well? Like what you did during university?
140	I	It depends on that individual. Certain people, they are able to do more than one... jobs <i>kan</i> . They can study.. at the same time, they can work. But certain people, they can only focus on one thing at a time. If you think you can manage working while studying, then, working part-time is good for you. Because you'll gain more benefits. But some when they work part time, they miss classes.. they didn't do assignments.. then, better stop <i>lah</i> .
141	R	Okay. So, what have you learned.. in the industries, that you wish you learn earlier during university? So you feel like.. "If only I learn this when I was in university.."
142	I	As I said just now.. confidence.. communication skill.. my current industry needs people with confidence and communication skills. That's why I use the same point <i>lah</i> . Maybe other person will have different answer. Aa... Maybe.. another point that I missed is dress-up.. aa self-presentation. Because if you work in a corporate world, this is important as well.. employer will take note on whether you are... well-dressed or not. For example.. simple <i>lah</i> . Women have a lot of hijabs [hm hm], and there are a lot of hijab styles. So, if her hijab style is not neat, it will represent the image where she is working as well. So practice early on. Don't wear jeans when you go to class.. don't wear flip-flops.. If you're wearing shoes, wear socks. And all those things. Proper dress-up <i>lah</i> .
143	R	Okay.. just now.. you said your degree helps you in terms of English language but Linguistics wise, not so much. So how do you upskill yourself to match the industry's expectation?
144	I	Self-study. Informal learning. Through Google. For example, on Google, how to be confident. First, I need to practice with friends. After I'm comfortable, then I practice with the next group that I'm not so familiar.. so that's how we can learn how to be confident. Presentation wise.. we learned before.. first, to read on the topic and then, practice in front of the mirror.
145	R	This one.. did you learn during university?
146	I	Yes. We had a subject related to presentation skill.
147	R	Besides that.. how do you upskill yourself? Have you taken any online workshop or..
148	I	No. I have the intention, but not yet. Because I need to pay for online workshop. It's good but you have to spend money <i>lah</i> .
149	R	There's this initiative by Trainocate if I'm not mistaken. The course is free until June. Later, I will share you the link.
150	I	Is it live or do I need to watch videos?
151	R	Yes.. there are videos. And you need to do some tasks.. to get progress. After you're done, you'll get a certificate from Google. It's on Coursera actually. It's asynchronous. Asynchronous meaning it's self-paced and... you're not joining the class in real time.
152	I	Hmm.. so it's like.. i think it was OpenLearning courses I think.. where we join the course and then we watch the videos.. we get new knowledge.. and then we need to do some tasks.. it's convenient right? [hm hm]. But for me.. it doesn't really help. To get the main points yes.. it helps.. but does not help me to really develop knowledge wholly..
153	R	Why.. why do you say that?
154	I	Because.. it's just.. theoretical only.. and it's one way.. For me personally.. I prefer two-way communication like in Zoom or Google Meet. Or even better, face-to-face.
155	R	What if you watch videos.. you ask questions at the comment section.. and then later, the instructor replies..?

156	I	No. I prefer live. For me, I think it doesn't really help me.
157	R	How do you upskill yourself in terms of problem-solving skill?
158	I	Okay.. for that one it's a bit difficult to describe. Because it's something that we cannot see.. because it's in your brain in your mind.. during my study, we have a subject Creative Thinking..? and I got C. (Chuckles) [Chuckles]. I feel so mad because up until now, I don't understand what I learned (Chuckles) [Chuckles].
159	R	What kind of assignments that the lecturer gave you in this class?
160	I	I don't remember. But in the subject, we learned about colors.. like yellow mind or yellow thinking.. I didn't really understand, that's why I got C. (Laughs). What's funny was because the subject required a lot of creative thinking, and I think my level of thinking is not the same with the lecturer's. So maybe that's why I didn't understand the subject.
161	R	What about the other students?
162	I	I'm not sure. Maybe they got B. But for me, I didn't understand. Anyway about the problem-solving, even until now, I think my problem-solving not so good.
163	R	Really? Even if you had a lot of experiences?
164	I	Because when I face problems, and I told my husband, he'll be like "Why don't you do this and this?", and I was like "Oh yeah, I forgot". I couldn't think like the way he think. So my problem-solving is not as good as his. So I need to improve on that <i>lah</i> .
165	R	Okay. So how do you upskill yourself in problem-solving? How do you plan to improve?
166	I	We need to read a lot. Because I think it helps with problem-solving. But I don't read a lot. I bought books but I didn't read. [Chuckles]. It's not like I don't have the time.. I don't know.. Hmm..
167	R	Maybe you can find another way? Instead of reading, something that suits you, maybe like intellectual discourse.. you can have a chat with friends but on topics that increase your knowledge?
168	I	Yes, I agree. We need to have the right circle. And in terms of social media, we need to consume the right content. For example my husband, he doesn't use social media on entertainment. He follows social media that are more on history, financial all that. As for me, more on emotional on girly contents. So actually, contents on social media that we follow can help us.
169	R	This is actually interesting.. because we spend a lot of time on social media right? So "you are what you eat, and you are what you see" right?
170	I	Yes. I agree.
171	R	So.. do you feel like social media can be a learning tool?
172	I	Of course, yes. My husband he's on TikTok a lot. And he told me that I need to create a TikTok as well. He said TikTok is not just dancing and those ridiculous contents. Because he said there are a lot of knowledgeable contents on TikTok. So he learned a lot on history, political issues, finance.. like how to be debt-free, knowledge on house loan and all that. He learned a lot from that.
173	R	So do you create TikTok as well, following his advice?
174	I	Because I'm working in insurance industry, I should create TikTok as well. So that I can spread the awareness. Because for me.. I'm not trying to be racist, but from my observation, Malays lack awareness in insurance and protection. And I don't know if you heard this, but there's this saying that says "A Chinese dies, a millionaire is born. A Malay dies, a land is pawned." Because they don't have the protection, so they will leave the debts to their children. Like Chinese, they have income protection 1 million for example. So when he dies, his children will get 1 million. So with that money, they can settle car and house loans. And others. As for Malay, they don't provide <i>hibah</i> or life insurance. So when he dies, the children have to settle loans. So as I said, TikTok contents are good actually, but I haven't started yet. The TikTok will help me to upskill myself and spread awareness.
175	R	Okay. So do you have a lecturer in mind that taught you valuable, that impacted your employability? Maybe it's not part of syllabus.. It could be their story.. that helps you with your employment.
176	I	I think the lecturer who taught me English for Occupational Purpose helped a bit.
177	R	What was the knowledge taught that you wish all university students should learn this

		to become highly employable?
178	I	To have more tasks or assignments that are hands-on and practical. When we do practical tasks, we learn better and more compared than writing task, students can copy-paste. Even now we have AI, so it's easier for students to copy-paste.
179	R	So what's an example of practical task that this lecturer gave you?
180	I	So the lecturer provided a scenario. For example, I have a boutique. What is my plan for the marketing? What am I selling? What's the price? Who's the target market? So for other subjects, we need to have more hands-on. Something that we can practice. Something that are similar to real world. Or real world tasks. Like university events like cleaning the river.. or planting trees.. real tasks. But the students need to do from scratch. From the proposal, meeting the sponsors, going to the place to ask for permission, all that. So when they do that, they'll learn a lot. So that when they graduate, they have the experience. They know how to prepare proposal, to write a letter to ask for permission, to communicate with the director, because they are used to it. Like for us, we're nervous to speak to the director.
181	R	So you wish everyone should learn this?
182	I	Yes. Like.. the director is a normal person, like us. But we are afraid for them. Because our culture <i>kot</i> . What happen to our culture? [Chuckles]
183	R	Well, we are the ones who need to shape our children. Don't be shy, to be outspoken. Maybe older generations, they'll find it rude. Maybe.. within reasons.
184	I	Yes, older people, they prohibit us from talking or asking questions to adults. When actually, we can, but just ask permission. Maybe that's why in class, we're afraid to ask questions to the teacher. Maybe that's the reason.
185	R	Okay. So what skills have you gained during your degree, that makes you attractive to the employer? [Wow]. No, because just now, the skills that you listed were generally, but you yourself, what was the skill gained that help you to be hired?
186	I	I think.. I think communication skill.. And a bit of confidence level. English language as well. For communication, I got the job because of communication plus networking. I communicated with her, then I got the job. Then confidence, can be seen during interview. When we are confident, employers will hire. For the English language, during interview for the telemarketing company, they asked me whether I can speak English. This influenced my salary. Those who cannot speak English, their salary is a bit lower than me. It's a bonus for English speakers. So those who have poor English, they should learn. They can do self-study. Even if they are from different course. For example, my husband. He's from Engineering course, but his English is so-so. So this affects his work a bit.
187	R	So if we're looking at the list earlier, what's the ranking for English language?
188	I	I would say the same as communication. It's important as well. Because sometimes other companies they use English. Or you're communicating with non-Malays. So when you speak English, and they cannot understand you, it's difficult. So if you have good problem-solving, you'll be hired. When you have good English, it's a plus point for you. Like my husband, he's not so good in English, but he still go hired. But his boss asked him to improve his English.
189	R	So.. how do you package yourself.. how do you showcase and present yourself, that influence employers to hire you? Before you go for the interview, how you make sure you are selected?
190	I	I need to prepare. In terms of.. research a bit about the company. So that I can answer if they asked me about the company. And then in terms of my dress up. We can see there are people who dress neatly, and those who don't. And... confidence is important as well. Some people.. for example group interview. Some people they speak very softly because they are shy. So boss doesn't want to hire even if the graduate's pointer is 3.8. Because employers don't really look at CGPA. They look at our preparation. And how we carry ourselves.
191	R	So in terms of resume, or portfolio, do you prepare that?
192	I	Of course. In my resume, it needs to look professional. And no typo. For example, the photo in the resume. Don't put a selfie picture. Even if the company is laid back, but our resume is our first impression. It is our image. It represents us. Because the employers don't see us first, they see the resume first. So if our resume is professional-

		looking and neatly organized, employers know that the employee is organized. But if there's typo, employers know the kind of employee that they will get.
193	R	What about in terms of portfolio? Do you prepare? Portfolio is the collection of past works or achievements. So, like you said you joined CSR, so you put a picture in it. "These are samples of my previous work".
194	I	Portfolio, no. In terms of certificates, yes. I bring files to show them during interview. For example, I have a certificate joining Arabic competition. That's a plus point for me.
195	R	Do you use any Education 4.0 tools..? Actually, we are in Education 4.0, which is learning can be done anytime anywhere.. it can be online offline. Google Meet, Google.. or social media like TikTok and all that. So.. what are some Education 4.0 tools that you are using? So just now, you said you use an app to create resume. What else? Do you use social media like LinkedIn to find jobs?
196	I	Not yet.
197	R	So where do you find jobs usually?
198	I	Aa.. website. I know there's a vacancy usually from networking. For the telemarketing, I know from website and JobStreet. For upskilling, I Google and social media.
199	R	Currently, what contents that you follow on social media?
200	I	I use Facebook and Instagram. I follow Kairul Abdullah, his contents more on parenting and insurance. On Instagram, I follow Dr. Adam, he's an expert in finance. I learn a lot from social media. I prefer to learn this way.
201	R	What are the advantages? Like using the app for example?
202	I	Like for the resume app, it's so easy. I can finish creating resume in just 5 minutes. 5 to 10 minutes. The outcome is pretty. I can choose the template, I can customize the colors. The app is called CV resume. It's free. For example, if I want professional-looking resume, I choose black or blue. For laid-back companies, I can choose maybe yellow. I can upload my details, picture, links and then I can save as PDF or print it. I can also customize where I want to put working experience.. and how I want to arrange it. And then.. I prefer using social media because the content is just nice, not too long. Unlike online courses like OpenLearning, I need to have one hour. Maybe my attention span is limited. So I prefer social media like Facebook and Instagram. I can scroll on my phone, and I can save it.
203	R	Meaning you prefer mobile learning right? Instead of on laptops?
204	I	Yes. I prefer mobile. I don't even have laptop. I don't need plug if I'm using my phone.
205	R	Is there any more advantages that you would like to add?
206	I	And then, it's easy for me to search if I want to revisit. Like of Facebook, I can use the search box. I just type the keywords. I like that feature.
207	R	What about its disadvantages?
208	I	I would say.. for social media, the content is just basic. And sometimes we can misinterpret its meaning, because it's incomplete. And then.. on social media, it is mixed with other non-related contents like entertainment, which can make me forget what I've learned. And then.. sometimes if I spend too much time on social media, I forget to eat.
209	R	Alright. So just now, that's related to learning sustainability. In terms of employability, what is the disadvantage of using the tools?
210	I	No originality. If I'm using the app to create resume, it will look similar with others. There's no creativity. And employers will know that I'm using a template. If all resumes look similar, my resume will not stand out. So that would be the disadvantage.
211	R	When you were in university, were you taught how to document skillsets like portfolio and reflection of learning? Writing reports after you conducted programmes?
212	I	Portfolio no.. reports, yes. I learned a bit.
213	R	Does it help you in employability?
214	I	The resume helped me. For the reflection, I learned that in a subject. Teaching subject. After we taught at kindergarten, the lecturer taught us how to reflect, what we can improve. So, I'm hoping that all lecturers will teach us to do reflection, for all subjects. Not just this one.
215	R	Okay.. hm.. coming back to one question before this, do you have anything to add in

		terms of what else can be done by the university or lecturer, for their learning sustainability? To help students sustain their learning. Remember what they learned better.
216	I	Like I said just now, I think it helps if lecturers include more real-world tasks. It makes it easier for us to remember what we learned. Because what's in the books sometimes they are not up to date. What we learned, and then when we work, the reality is different. And then employers will ask "You didn't learn this in university?". In fact we learned it, but the books are not up to date. Like nowadays, we have remote working and work-from-home. So we have to learn a lot regarding that. So, what I'm saying is the lecturers need to be up to date with the industry's expectation. But at the same time.. the students shouldn't wait to be spoon-fed. They should take initiatives to self-learn.
217	R	Okay. Understood. Actually, we are at the end of our interview, do you have anything to add before we end?
218	I	I think I have no more to add. So, yeah, that's all.
219	R	Thank you so much for spending your time. I'm sorry, we went overboard. [Chuckles] But all that you shared here is actually eye-opening. Thank you so much. And all the best in your future.
220	I	Thank you.



APPENDIX L

VERBATIM TRANSCRIPTION INFORMANT 8

Name: Alumnus 2

Place: Google Meet

Date: 29 May 2023, 12.30 p.m.

DU	R/I	Transcription
1	R	Okay, <i>assalamu 'alaikum</i> .
2	I	<i>Walaikumsalam</i> .
3	R	Okay, so just now I have briefed to you, aa the objective of my research and whatnot. So before we start, can you share a little bit about your educational background? Aa where did you graduate from and so on?
4	I	Alright, erm so before I started at IIUM. I was majoring in Bachelor of English Linguistics and Literature. English Language and Literature. So erm I graduated with honours erm and I did my major in.. both combo linguistics and also literature.
5	R	I see. Aa...When was this? What year?
6	I	I think 2015.
7	R	2015. Okay. AA and then aa how long after that you immediately employed?
8	I	Erm... I think a year after. A year after. I worked just for a while with a TV station, TV Al-Hijrah.
9	R	Uhuh. What was your post when you were... at TV Al-Hijrah?
10	I	I was a broadcast journalist, which means that I had to work erm... I had to be an interviewer [hm hm] for the talent that they scouted, because my major was English, so they gave me international talents. So what I did was I aa prepared the script for the English talk show and also I interviewed people, basically in English for an English program. And I a bit of editing erm using the apps in iMac. It was called erm Final Cut Pro aaa video editing. Besides that, I also prepared aa prepared some content for the show as well.
11	R	Okay. So how long were aa you when you work- were working in TV Al-Hijrah?
12	I	Three months. And then after that, can you share your working experience from that up until now.. including part-time if you have part-time..
13	R	Okay. I did a bit of part-time where I translated some documents and also a bit of erm... I wouldn't say paper because it wasn't like a master paper, like a very long paper. It was just like erm, I'm not sure what it was called, but it was about like 10 pages. [hm hm]. So basically I did a bit of translating. And then I also worked briefly at Zalora. So I was the content writer, so what I did was they gave me some products. So I had to write it, describe about the products in English, and try to make sure that people... Because Zalora is an erm online platform for shopping. So what we did was we wrote about the.. products that people could know what they are buying. For example, erm what are... We described the product, like if it's from leather or PVC, and at the same time we tried to write something creative about it, just to aa ensure that people are interested in buying the product.
14	I	Okay. So aa for the translation and Zalora, do you do it simultaneously?
15	R	Yeah. So how long? So this is after TV Hijrah, right?

16	I	Yeah. Zalora was very brief. (Shows one finger)
17	R	Uh-huh. Sorry? One month?
18	I	(Laughs embarrassingly)
19	R	(Laughs) Okay. So is there any reason why it was very brief?
20	I	Okay. Because I thought it was a bit tedious. [Okay]. I'm okay with the product that I had to write about the product. It was basically what I studied in uni. Right? [hm hm]. So that one was okay for me. Actually, I enjoyed it a bit. I enjoyed TV Al-Hijrah more. So Zalora is okay. It's fine for me. But the thing is, erm we had to go to the store and pick the products ourselves. And we had bags, and a lot of clothes as well. I don't think erm... I guess it was a bit tedious and I feel like more of a labor work. [Hmmm] You know, like if you could... If you could differentiate between blue collar and white collar, I'm not sure which one is which. So blue collar is the one who's not working at the office, right? .
21	R	Yeah. If I'm not mistaken.
22	I	Yeah. So it's more of a blue collar kind of stuff. [I see.] When we have to like erm get all the products from the store ourselves. Sometimes, I mean the boys would offer to help, but like everyone is busy. So... yeah, that's why I feel like it's not for me.
23	R	Was it not stated in the job description? Do you feel like you were lied...?
24	I	Yeah, I do feel that way... a bit. Yeah, because the thing is the other... You know, my colleagues, they don't really mind about that. They're okay because they were trolley provided, provided for us. So we could... But still we had to carry all the stuff. It's in the box. So we had to carry it in the trolley. So yeah, that's why.
25	R	Okay. Okay, so aa meaning to say...
26	I	Oh yeah, I remember something. The other reason is that because I had to deal with... Excel as well. And I wasn't very good with that. So because, they have like plenty of products. So everything had their own SKU. It's like the product code. So that one was a bit confusing for me. Like I remember doing that for... until up to... I think almost 9 p.m... Yeah.
27	R	Hmmm. Okay. All right. And then after that? After... Zalora?
28	I	After that, I did not work for quite a long time. Maybe five years.
29	R	Hm hm. Why? Is there a reason? Is it your choice? Was it your choice?
30	I	Yeah, it was my choice. I was.. I think I was very comfortable staying at home. I was married. So basically I was a housewife. But at the same time I do envy my friends who are a lecturer. Because I just... It's just like, something that I really want to try. So yeah. Okay. I do have that in mind. And I did apply at UIA.. But I didn't- it didn't get through.
31	R	Okay. All right. And then after five years of being a housewife, aa.. are you working right now?
32	I	Yeah. I'm a lecturer now at Cybernetics College. It's a private college.
33	R	How long have you been a lecturer here?
34	I	It's been more than one year. More than one year. A year and a half I would say.
35	R	A year and a half. Okay. Aa..... So... How do you feel that your Bachelor's degree? So you said just now you were graduated in... English language and Linguistics, right? Eh, aa English Language and Literature. How do you feel the program has prepared you for.. employment?
36	I	Oh, for employment or personally?
37	R	You can share both. You can share both. Personally and...
38	I	Well, okay. Well, personally, to be honest, I really, really loved the course that I took. I feel like I wouldn't change it for anything. Aa I felt like I had made the right choice. I always had this discussion with my husband because he he took the same course, but he felt like he should have taken something else because he came from a science school. And even though he loved

		English, but at the same time he he had a dilemma. Because sometimes people who come from boarding school, they are all-rounded person. They can do anything. But for me, I feel like this is my strength. So that's why I know that this is what I wanted to from the start. [Hm hm] And... I feel like I've never enjoyed studying, in my life, except for in college aa in university. So like I said erm..
39	R	What what was it that made you really enjoy.. your education experience?
40	I	Okay. So honestly, I loved the subject (chuckles) because I love English. At the same time, when I first aa studied literature, I thought that it was something very erm interesting and it could change your perception in life. And your outlook in life, how you see things, and you learn a lot. By like reading the novels, you don't just erm learn about the character, but you learn the history, you learn the development of the characters. So it makes you more matured, you become more wise, without having to experience it first-hand. You just read from the novel, and you feel like after this, if you go through something like this, you know what to do. At the same time, you could erm empathize with people more, just because you... it seems like you have experienced what they have experienced.
41	R	Hmmm. Okay. So that's your perspective aa from a personal point of view, right? [Yeah.] So in terms of employment? Did it help you?
42	I	Yeah. Yeah. I think it did help me, because I feel like whatever that I took, you know, as a job, I have to use my skills in language. [hm hm] Yeah. So I think it did help me a lot. Because when I was in school, I was quite shy. I wasn't really an outspoken student, but in university, I, erm I mean, during classes, we had to do Oral Communication class. And I feel like that one helped me a lot. So we gave a lot of speeches in front of the class, and it just gave me the confidence to talk more.. in public. And it taught me.. all the skills needed to be a good communicator.
43	R	Hmm. Okay. So that's one thing. Do you have any more to add?
44	I	How it helped me with employment? [Yeah]. Erm.. like I said, it helped me with my social skills. I could communicate with people better. Erm.. It helped me to be more comfortable with this language, because it's a foreign language, right? [hm hm] It also, like in literature, it helped me to widen my thoughts and also my knowledge. [Okay.] It makes me more matured person. So those are the three things. And I feel like how aa the course helped me in my life.
45	R	Okay. Aa so what can be done by the university, or maybe by the lecturers.. for better learning aa learning sustainability here, meaning you remember what you learned, whatever that you learned, it's sustained. It's not when you go to final exam and then, gone. No. Yeah. So whatever you learned, you remember, you apply it in your work life. So what do you think can be.. done by the university or.. the lecturers themselves?
46	I	Okay. I have a different answer for the linguistics subject, also for literature subject. [Alright]. The thing is with the literature.. I think my strength is there, right? But linguistics.. linguistics is the study of language, right? I see also my friends who came from a science background. They feel they like linguistics better. [Hmm] And I feel like for me personally with the students, I don't remember much. Yeah, but with literature, I could truly say I could remember a lot of things. And sometimes I would say this to my husband, because we were in the same class, back then we were in uni, and he couldn't remember things. So I feel like it's not just the lecturers, it's the student itself. The students themselves, if they.. truly enjoy the subject or not. [Hmm]. Yeah. If they truly enjoyed, they would definitely remember important-important things that they learned from the subject. But linguistics, what I can say, aa what can the lecturers do? Erm.. Because I'm a lecturer myself now. So I feel like what they could do is try to make the subject more relatable in our lives. For example, erm if we're talking about erm the critical period for acquiring a second language, [hm hm] so.. instead of just teaching us technically, maybe we can... maybe they could just add a bit more to making it more erm relatable to us. "When you have a child someday... this is what you need to do. Because eventually most of us will get married and have children." So what they could say, here I mean, "This is what I do with my children, because from the age of aa 7 to 11, for example, they are most probably aa they acquire a second language better than any other age." So, erm.. for example, if I'm the lecturer, I would say, "When my child is 7 years old, I will send them to international school... International Islamic school, because I want them to be able to converse in Arabic." So, they could provide examples that are relatable to our life. Because the thing is, I think, aa linguistics is very erm theoretical. So I feel like I would forget things

		easily, when it comes to those subjects.
47	R	Okay. All right. So... in terms of employment, what do you think the university should do? Erm maybe courses that they should teach, or something that the lecturer could teach, so that by the time you get out of university, you are immediately hired.
48	I	Erm I feel that they could teach us how to use erm language in a more formal way.
49	R	Okay. For example?
50	I	We actually had the subject, which is LOP.
51	R	LOP? What's that?
52	I	Yeah, did you take that one? I can't really remember, but maybe it's Language for Professional...
53	R	Occupational Purpose eh?
54	I	Yeah. Yeah, I think so. But... I did learn something from it. I don't think it really helped me for my employment, because the thing is, I remember we had to present.. about something, maybe about our business, like a mock business that we were running. And at that time, I presented, (Chuckles) I remember I presented about my cat. (Laughs)
55	R	(Laughs)
56	I	So, you know me, my friend, we were pretending like erm we had a grooming service. So, we presented about... our cat, and we brought our cats to class. (Chuckles) [Chuckles]. Which, I think the lecturer was fine with it. But I feel like they should have.. told us that they want, they had to, they should have made it clear that they want to help us with our employment later. So, we wouldn't do something that I feel like not really.. wouldn't really help us. Maybe what they can do is... train us more in writing reports.
57	R	Writing what?
58	I	Writing reports. Okay. And so, write letters as well. Like maybe, formal letters, aa request, email, how to request stuff from different department, erm how to manage a meeting, how to be the MC for a formal event. [hm hm] Because I feel like these are the things that are, like, will help you to climb the social ladder at work. Yeah, because if you're good at that, I think people will recognize you, and you might get a promotion better.
59	R	Hmmm. Okay. All right. What do you think are some of the skills.. or attributes that employers consider important among graduates?
60	I	Erm..... Communication skill.
61	R	Communication. What else?
62	I	Erm... Integrity. I would say, if I am a hiring manager and I want to hire someone, I would want someone who I can trust.
63	R	Okay.
64	I	Erm..... Interest. Yeah. Interest in their specific field.
65	R	Okay. Meaning aa they are passionate about...
66	I	Yeah, passionate. That's the word, passionate.
67	R	Okay. What else?
68	I	Can I just answer three?
69	R	Yeah. Can. If you have any more, you can also add later. Okay. So, out of the skills.. that you mentioned earlier, can you rank.. from the most important to the least?
70	I	Okay. Aa.. (Clears throat) I would say passion is number one. [Okay.] Because I feel like if you're passionate about something, you would give your all. Because the thing is, if you're not, for example I'm a lecturer.. Right? And I am passionate about teaching. So I'm not just doing this for my students. But at the same time, I'm doing this for me. Because I want to be a

		better teacher. [Hm hm] And by time, I want to just grow into a better person as a teacher. [Okay.] And what I did was, every semester, I try to implement something different, just to see what what are the things that work with aa different kind of students. So, yeah. So, I think passion is number one. Erm... Number two is.. what did I say just now?
71	R	Communication? Integrity..?
72	I	Ha okay. Communication skill. I put that as number two because I feel like it's a skill that could, you could brush it up. You could become better and better so I don't put it as number one. But still, you got to have it. You got to have the skill. So, I think communication skill would work in most field. [Hm hm] Because erm if you're not able to communicate, if you're like an introvert person, and you're not trying to erm be... I wouldn't say extrovert, but trying to be eloquent.. in certain things. Because, you know, when you're in a meeting, you have to erm to voice out whatever problems you're dealing with. Because if not, then you cannot deal with the issue. You cannot solve the issue. So, I think communication skill is important as well. [Okay.] Yeah. So, I put that as number two. Number three is the.. erm integrity. Because like I said, people could change and become better. Erm.. I think what I do not like is when people take credit for your work. I think that is like the most red flag for a person. Like I said, it could change so that one, that is the least. If if I have to rate from one to three.
73	R	Okay. Aa do you have any more to add? Maybe like problem solving skills, critical thinking skill. Do you think those are.. important?
74	I	Erm.. Okay, the thing is with problem solving skill and critical thinking, I think people who work in the office, yes. That would be applicable. But erm for.. I think what is more important is aa stress management.
75	R	Okay. So, how would you know that aa.. I mean, you as a graduate, how do you handle your stress? Do you think you are able to manage it well?
76	I	(Chuckles) No. But I am I am learning to. [Okay]
77	R	So, how do you learn aa to.. manage your stress?
78	I	Okay. So, what happened was, erm every time, I think I discussed this with you. Can I say this? As a friend.. [Yeah.] As a friend before. So, whenever we get stressed out, it's like as if we are sick physically. Something happens in our body. Like for me personally, I wanted to vomit. I couldn't sleep. I got erm stomach ache, feeling nauseous and so on. And erm in my life, there were a couple of times that I get extremely.. stressed out. Aa up to a point that I got stressed out for about one month.. or two months. And it was like-
79	R	Do you mind sharing? If if you don't mind sharing.. the couple of times you were stressed.. (Chuckles)
80	I	(Chuckles) Okay. Erm.. It was about work. So, I had to handle something.. that I didn't really want to do, but I couldn't say no. Just because I was not used to saying no. And I got so stressed out about it. And then what happened was.. it was actually, it is still affecting me now. So, what happened was I got erm... an autoimmune disease. So, this first came out because of the stress. But the thing is, the doctor still hasn't erm... They couldn't really conclude what it was. And I have a lot of appointments coming up just to see how can I deal with it. Because it is autoimmune, it started with stress, but you cannot stop it. [Hmmm] Yeah. So, because of that, I tried to manage my stress level. So, I was just telling myself, "Okay, I do not want to deal with all these diseases." With autoimmune, you could get erm lupus. You could get erm thyroid problem. Erm diabetes and so on. So, have you heard of autoimmune before?
81	R	No.
82	I	Okay. So, what happened with autoimmune is that.. when your body is... It could happen for a lot of reason, but with stress, when you are stressed out, your body is fighting it. So.. you are healthy, so your body is.. fighting your own cells that is making you sick. [hmm] So, there's no cure. It is autoimmune, so it is attacking you automatically. So, for you to aa be healthy again, the doctor said there's no cure. What you need to do is try to manage your stress level. So you don't get more disease.
83	R	Hmm. So, what are the symptoms that you are...
84	I	Well, it could be a lot of things, but I could get a eczema, skin.. skin problems. It depends on the.. person itself. Like, what are the things that they are prone to. [hmm] Some people.. have IBS.

85	R	IBS, irritable bowel syndrome?
86	I	Yeah, yeah, some people have that. [Okay..] So, because of that, I just feel like, "Okay, this is not worth it. I am not going to be stressed out because of work, or all these things that are temporary. Because I want to be healthy, and live my life erm as happy as I can with my family. So, that was what erm helped me to manage my stress level. So, I don't really... I mean, I give my all, with my work, but I don't.. like put too much pressure on myself. I just learn to be erm to be chill about it if something bad happens- if it didn't go.. like how I planned it to be.
87	R	Okay, alright. Aa so, out of the attributes mentioned, I think just now you have ranked it. But just now you said for problem solving and critical thinking aa is not so important for certain profession, right? Yeah, what are the examples aa what are the reasons?
88	I	Because right now I'm working as a lecturer. Erm because I don't really deal with problems. Sometimes I just dump it to someone else. (Chuckles) I would try to probably like talk to my superior about it. But the thing is, I don't think I want to carry the burden myself. I feel like someone who is a good problem solver, they don't really aa need somebody else's help. They could do it themselves. So, I feel like that one would be very useful when you're working in an office. Because erm like in an office setting. When I say office, I mean like corporate.. corporate job.
89	R	For example?
90	I	Like, what my husband is doing it right now, he's working with Maybank.
91	R	Okay. So banking?
92	I	So basically.. yeah banking. But he's a writer because he took English. UX writer..
93	R	Oh, okay.
94	I	So, what he was telling me is that he need to climb the social ladder very quick. So, what he did was, in the meeting, he would.. try his best to talk as much as he can. And make sure that he doesn't talk crap. So.. like I said, for people like him, problem solving is very, very important. Because when they are talking about a problem that they want to solve, he could come out with a new idea. And just to make sure that the big boss recognise him, you know, stuff like that. But for me as a lecturer, I don't really.. need to climb the social ladder. What I need is, if I want to do better, maybe I need to pursue my studies... Yeah, if you know what I mean, I would say that problem solving is...
95	R	Sorry, your voice is missing. What did you say? Problem solving..?
96	I	It's a very helpful skill in meeting... Yeah, but at the time being, I don't really try to be better at it. Because right now, I want to focus more on communication skill... Yeah. [Alright, okay.] If you can understand..?
97	R	Yes. So, meaning to say, you are saying, aa it depends on the industry. Some industries, they need more.. problem solvers, but some industries, they need people who are.. good in communication, who are.. good in stress management. So, it depends.
98	I	Yeah, exactly.
99	R	Okay. Erm.. What are the strategies that you think graduates, because right now you.. you are already graduated. Right? You are already in the industry. So, aa what are... something that graduates should practice, early on, when they will still studying, when they are still in the university? Something that you learn right now that makes you feel like, "If only we have been doing this since.. or we have been... We have learned this, or we have practiced this, since first year.
100	I	I feel like erm I don't know if this would... I mean, this is personal to me. Personally, I think what students should do is they should start aa online business. Okay. Yeah, because I feel like back then you still have a lot of free time, and you do not have any commitment. So, you don't have to work to get money. Because right now, if you want to start at 30 years old, you have to work. And you have commitment, you have to pay for your bills, your house, your car, and so on. So, erm you need more money to use it as a... To start a business. So, I feel like students should really start early, even if it's small. Just to have the experience in online business. Because.. I think money is very important, no matter what people say. (Chuckles) I

		know that they say money can't buy happiness, but.. it is still very important and we need money in our life. [Yeah] I feel like for you to be able to do your passion, because some people they have to work to, sustain, to sustain, to provide for the family. But some people, they can work, erm they can do what they like to do.. as a job. So, for you to be able to do that, I feel like you need to have money... You need to have the safety net. So, what you can do is you can start aa online business from the first year of studies. And you start small, because when you start small, if something bad happens. It wouldn't.. affect you too much. So... if you ask me what are the things that could help them, it's definitely online business. With online business, aa you could choose whether erm to go public. For example, if you have to look, you can be a model as well. So, you can sell aaa hijab for example. If you're a very shy person, you don't want to do that. If you still want to be a very private person, you can still do that by erm selling other stuff that erm do not require you to... show yourself in public.
101	R	Okay. So, aa how do you suggest that they... do this? What kind of platform they should use?
102	I	Aa I would suggest them to use TikTok, because right now, people buy stuff online from TikTok. Erm.. they could use Facebook as well and Instagram. And probably.. just use their... I don't know, because I've never tried this, but... erm.. Like a website that is free. Maybe Shopee? Shopee as well. Because the thing is, why do I say online business? Because I believe that they could learn a lot from it. They could gain confidence. They would know how to manage their money. So, if they know how to manage their money.. they could manage their stress level as well. It could help them to become more matured. And.. erm they would spend money more wisely, because usually, teenagers they... you know like us... back then (Chuckles). We spent money recklessly, right?
103	R	I think adults as well (Chuckles) spend money recklessly.
104	I	(Laughs) yeah some.. some adults.
105	R	Some.. Okay. So, erm do you think by doing online business, it will help them with their employment.. later on?
106	I	Yes, definitely, definitely. Because they would have more confidence. So, maybe they have dealt with a lot of different kind of people before. For example, if the business didn't work out, somebody.. like probably erm ran away with the money... You know, this happened to one of my friends. So, I think that would help them not to trust people too much, not to be too naive. So.. definitely it would help them a lot with their aa life skills. I wanted to say something. [hm hm] You know, I went on a holiday. So, I met this couple from Belgium. So, we were talking. And we went snorkelling together. So, we were in a boat. So.. the tour guide... The tour guide's English is not very.. good. So, erm this couple they talked to us a lot. So, we would translate whatever the tour guide was saying.. to them. So, we talked about it. We spent the whole day, the four of us, me, my husband and the couple. And erm we... eventually they tried to guess our age. And we tried to guess theirs. And obviously, we are shorter than them. So, they thought we are 25 years old. When we are actually 31. And we thought that they are 30 plus, when they are actually 26. So, the thing is, aa it's not just because of the height. But because of the confidence as well, the maturity when they talk... all this stuff, I think, is... erm.. is I feel like if you start something early, maybe a business and whatnot, it would help you to come up as someone who is more.. knowledgeable, someone who is convincing when they are talking, someone who could persuade people, and when they give information, they could give it in a.. coherent way. And easier for other people to understand.
107	R	Hmm.. Okay. So, the main highlight would be communication skills, like, because to persuade someone.. to be able to convince... aa and talk about the products that you are selling. All of these require good communication skills, right?
108	I	Even the voice projection. [Hm] Even the voice projection. When they are talking, they don't hold back at all. For example, I remember when I was on the trip, and I wanted to talk to the... I don't know how to say this. I wanted to talk to this pilot. I told you, right? I went on a helicopter ride. So, I wanted to talk to the pilot. I asked him in a rather.. slow voice, so he.. he said, you can turn to me and say, talk with confidence. And I feel like, Asian, we don't have that naturally. It would just be more like, if they want to say something, they want to ask for something. It would be a bit.. They call it "polite". But actually, I don't think it would help them that much with being that "polite". Because with the Americans... aa the white men.. have you ever heard of the term, "The confidence of a mediocre white man"?

109	R	Okay. No. (Chuckles)
110	I	(Chuckles). Basically, we're talking about a mediocre white guy. He could be just... a cashier. For example, he's not an architect or someone who is a professional. He could be just a cashier. But just because he's a white guy, it's how he was brought up. He's very confident when he is talking. And when he speaks, he speaks with conviction... And his voice, it just shows through his voice projection. Yeah.
111	R	So, do you think this can be, because you said just now about Asians being very... timid. [Yeah.] When we speak, we speak "polite"ly and softly.
112	I	Yeah. When I said "polite", I mean, we beat around the bush a bit. And we don't go straight to the point, because we don't want to hurt other people's feelings. But the thing is, it wouldn't help us much, especially when we're working. We have to be very direct.
113	R	Okay. So.. do you think this should be, there should be something, there should be an intervention when we are learning in university, for example. What do you think should be done? So, that this stereotype about Asian being "polite" and you know, beating around the bush, aa do you think something could be done? So, that we don't.. our future graduates don't become like this.
114	I	I feel like our lecturer should probably say this to our faces, that when we talk, they should highlight the voice projection more. Because I don't think any of the lecturers said this. Even when they are talking, I don't think that they.. are very.. enthusiastic about it. You know, sometimes I feel like some of them are just... reading the text. So, I feel like they should.. the lecturer should highlight this more, about the voice projection. Because.. when your voice projection is good, sometimes people get intimidated by you. Which is a very good thing, because you want that confidence that you could.. that you want that confidence from them, that you could handle a certain project or a certain task. I feel like first of all, lecturers should highlight that, specifically about voice projection. And the second one, I think we should probably carry like a.. mock meeting. Yeah. And then more dialogues used in a formal setting, erm include more vocabs, jargons, things that actually worthy, that would actually make us sound more.. professional. [Okay.] And one more thing is, I feel like if you are born an extrovert, and also someone who is very eloquent in speech, you might not need this. Because it will come to you.. naturally. But I feel like with Asian, I think probably 60% are not like this. Naturally, they are just very timid, like you said. So I think this would benefit them.
115	R	Okay... Aa is it because of parenting, like when we are small..
116	I	Yes. Honestly, if you ask me, I feel like it could, it started from early childhood, not just from university, but because this, this interview is carried on.. it's on the university aspect, right? So I do not touch the early childhood focus.
117	R	Okay. Can you maybe explain briefly, what do you say? It starts from early childhood?
118	I	Because I agree with you when you say, aaa parenting does affect this. Yeah. Because obviously we grew up in a household with our parents, right? So we would mimic a lot of things from our parents. So.. they are like that with our family members, they are very soft-spoken, and they are not direct. For example, we go back for a while, and we just want to stay for a short period of time. But just because we want to be polite, we couldn't say it. So it starts from there. So... we have implemented this in our... daily life.
119	R	Okay. All right. What about learning sustainability? You said just now, aa aa does online business helps graduates to sustain what they have learned in uni? Maybe something that they learned, maybe something that they learned from the online business experience, that maybe they couldn't get that in classroom, that helps them for future.. later on.
120	I	I'm sorry. I couldn't really, I don't really understand the question. Does online business help you remember things that you studied in university?
121	R	Ha. Something that they learned in university or something that they learned outside of classroom during university? Ha.
122	I	No, I don't think online business.. this is just my personal part. I don't think it helped you to remember stuff that you learned from university. But I definitely think it will help you in life.
123	R	I see. So what other things that they can do.. early on from first year so that they will remember what they learned? Not just after exam, gone. But they remember like you said just now, you remember what you learned in literature. So what was the strategy that you did that

		made you remember? Until now.
124	I	(Chuckles) Okay. Like I said, the first thing is the passion. If you're passionate about it, I think it will come naturally. And whenever... I never want to miss any literature class, and sometimes I go to classes that are... that I'm not even registered for. [Okay.] If it's literature, I would join the class. Because I always feel like lectures have a lot to share and I couldn't get it anywhere else. Because all of the things that they share is through their own readings, their own research and so on. So I truly, truly value that. Erm..... so yeah, like I said, the first one is passion. Erm... The second one.... This is not through my experience. Because I wasn't really a good student back then. But some of my friends, they are very good with note-taking. So maybe improve on that as well. [Okay.] What I have started to do is, whenever I read something, I do annotations.
125	R	Annotations? What's that?
126	I	Yeah. So I think that the annotations are basically, have you seen people reading the Quran, and they have all the stickers? [Uhuh] So usually that is annotations. So whenever you read something, whatever you're feeling about it, you just write it on the book. [Okay.] Whatever points that you learn from it, or you could relate it to your life, whatever that you're feeling inside, whatever emotion that you feel while reading that. So you just write it down. The thing is when you go back and reread it again, a few years later, you might feel different about it. [Hmm] But you are still able to revisit the memories that you have before this. About a certain aa paragraph or a certain phrase. So I think annotation would work as well. Because aa there's research I think, saying that when you write things down, it would help you to memorize things better. And especially when you relate it to your life. [Hmm] For example... with language studies, right? When students are learning new words, what they should do is, I watched a YouTube video about this girl. She tried to learn as many languages as she can. Probably seven languages or maybe less, maybe five or six languages at one time. So her secret is to write down erm all the new words and write it again in a sentence that is related to her. So when she learned new words, she tried to.. write a sentence about the word, including the word in the sentence, but it has to be related to her. So in her life, she would someday use the word. Because if she doesn't use it, she will not be able to remember it. So yeah, maybe annotation, number two is annotation. First is passion, second is annotation.. erm.....
127	R	As well as note-taking, right?
128	I	Hm hm. Note-taking and annotation. Aa..... Probably I would say the third way is to erm simply wanting to remember. Things that you think will help you in your life. You don't have to remember everything, but if you feel like this knowledge is valuable for you, your life and your dreams, maybe the students can.. erm from now on, have a goal. What they want to do in their life? Like I said, it could be very hard for people who are all-rounded. They could do anything. They're very good at everything. They went to MRS M. So they are straight-A's students. So I have a friend like this one. She's very good at it. And I think you are an all-rounded as well. (Chuckles) [Okay.] And I would like to thank you for studying with me a lot at university. [Chuckles] I remember I would sleep so.. early. And you would come and wake me up. And then asked me to study with you. So I really appreciate it because I've never done that. I would just go to sleep. I wouldn't care about the exam. But the thing is, what I'm saying is.. people who are very good at everything. It's hard for them to choose.. because they could do anything. [hmm] But for them to really try to weigh the pros and cons. Maybe they want to go for erm accounting.. or going for a science stream. Stuff like that. They are good at both. What they can do is they can just weigh the pros and cons. What are the fields that could lead to a less stressful life for example. So by having that goal and deciding, you know, maybe they could Plan A, Plan B, Plan C? [hmm] Because they're good at everything. But.. by having that goal, they would be able.. It would be easier for them to differentiate what are the knowledge that erm they could actively tell themselves, "Okay. This is something that's valuable to me some day. That would be valuable to me some day. Hmm.
129	R	Okay. All right. Okay. Thank you so much. That was.. really eye-opening. Another question. What have you learned in the industry? So you have been working.. you've worked in.. broadcasting industry. You've worked in.. fashion, fashion industry. You've worked in academic.. aa education. Yeah. What have you learned in the industry, that you wish you have learned earlier during university?

130	I	Erm... I would say erm.. video editing. Because the thing back then when we were studying, social media is merely used for fun. So I wish.. because right now working, it's very hard for me to learn at the same time erm to work as well. So I feel like if we could be more creative- because students right now, they are very good at editing they could do TikTok videos, that would probably take them maybe 15 minutes... that would take us half an hour, or maybe more, maybe one hour, just because we are.. not used to it. So I feel like, yeah, video editing is something that I feel is very, very valuable. Honestly, I do see YouTube and all this stuff, all this platform, it's quite a new way to generate income.
131	R	Sorry, just now you said what? YouTube and?
132	I	YouTube, all the platforms, like Shopee, TikTok. Instagram and so on. Yeah, I think we should really fully utilize it not just for fun, not for wasting time, but to generate income
133	R	So meaning to say, aa students should, aa early on from university they should utilize this, for generating income?
134	I	Yeah, at the same time try to learn and be more creative about it. Not just use it for fun. [Okay.] Maybe 50, 50, like use it for fun and at the same time learn, maybe learn better editing skills, because the thing is everyone can edit. [Hmm]. How to make your erm content stands out more. Of course, to give, to share knowledge as well. I think you know this better because you're very good at it. [Chuckles] You're also a YouTuber. So, yeah, but do you agree? I'm sure you agree that editing skills also play an important role?
135	R	Yes, I agree. Aa maybe depends on which industry you are in. So, the industries that are mainly focused on servicing to people. When you give aa service to people, you know, like education, what else? Aa Shopee, and all that.. we give service to people. So.. people are social creatures and... we use social media every day. Sometimes every hour. So, video editing is important. But maybe for... industries like I don't know. Aa banking, I don't think they have time. (Chuckles) Unless if they are in Marketing department, that's a different case.
136	I	Oh yeah, one more thing. I feel like what the students should start doing right now is.. try to use all this platform to share knowledge as well. Like I said, erm my husband is a UX writer. Sometimes he does this free talk.. The one that you've joined before, right? [hm hm] So, erm eventually, of course, he want to start making money out of it. But right now, he just want to do it because he is very passionate about it. And he want to be better at the.. erm presentation skill at the same time. So, I feel like everyone is unique. Everyone has their own erm strength. Things that they are good at it. So, they should share it.. online.
137	R	So, meaning share.. knowledge, something that they are very good at. Early on. Maybe they don't generate money, but what do you think they get when they share knowledge?
138	I	Yeah, they will definitely learn a lot from the, from the process. And erm at the same time, for example, someone who is very good at sewing clothes, maybe they could start erm showing how they do that. At the same time, if they do not want to erm teach them, they are not very passionate about teaching how to sew clothes. What they can do is just share with the audience, all the products, the final product of the clothing that they sew. So, I feel like this would erm help them in any way. I believe that it would help them.
139	R	What do you think, in what ways it will help them? Will it help them get customers or..?
140	I	Yeah, customer, they could help them get a following. So, if they want to start a business later, at the same time, erm help them to.. be hardworking in life. I don't know if this is applicable for everyone. Some people they are hardworking from early on, but some.. not so much. They are more of a someone who is a YOLO-er. (Chuckles)
141	R	(Chuckles) Yeah, I understand that.
142	I	Yeah, they just want to have fun, right? [Yeah] They're not very matured and they don't think about the future yet. So, having something like this would definitely help them to become more matured. One of the, you know, on Instagram, I followed one kid. She.. is a French and she live in Bali. So, what her parents did was they start an Instagram page for her. She really, really loves animals. So, every day she would help and feed street cats and stray dogs. So, she didn't do this for the profit, but they established a... website as well. So, what they do is they try to help people from all over the world to donate to them, because they're not rich people. But they want to help aa keep on feeding all the stray animals. So, the kid also did her own hand-crafted bangle. Which is, which to me is very interesting. She's only eight years old, eight or maybe ten, around eight to ten. So.. she did her own custom bangle and she sold it

		online. And a lot of people who visited Bali and right now it's quite established as well. They would visit her place and give her a lot of money and buy her stuff as well. So.. at the same time, she gets to do whatever she likes, which is feeding the cat and the dog. She also learned business. She learned to set up a website. She learned aa giving to people, communicating with others. Yeah. So, I think it's a very interesting thing. It would help her so much. She would become more matured than children her age.
143	R	Hmmm. Okay. Alright. Erm to what extent does your degree help you.. in current industry? So, currently you are teaching, to what extent?
144	I	Erm..... I would say erm.... 70%. It has helped me, because I feel like when I was studying, I mentioned before the subject Oral Communication. I think that one helped me a lot. After doing that subject, I realized that I really enjoyed speaking in public, especially if it's something that- if I am in control of it. Yeah. I still have erm issues when I have to speak in public on things that I do not believe in.. or I do not like, but I do find enjoyment in doing that. So, that is number one. Secondly, because erm we had this book right for Oral Comm. So, it taught us all the good things, all the skills.. that we need. And if you still remember, it taught us one by one, all the steps that we need to do. For example, we need to lay out the draft first, and then we had to write down the script. And then we had to do all the, you remember, the slashes? [hm hm] The slashes for the pauses when we were talking. So, that when we are giving a speech, the audience could follow us.. with the speech. And they do not have any difficulties understanding because they could follow the sequence. At the same time, erm we learned, to circle the words that we want to stress on. Just to make sure that we have intonation when we were talking. So, yeah, I do think that it helped me so much, especially Oral Comm. Erm.. You know, when I am talking to you, I could say that I did not go back to the book and reread it again. I remember from the class itself. So, that's what I said. Whatever that I truly like, I still remember it fresh in memory. So, I would say, yes, the subject in the the course helped me a lot.
145	R	Okay. Aa what about the 30%... that doesn't help you? How do you upskill yourself? For the 30%?
146	I	The 30% is definitely me having to just brush up my own skills. And try to erm just be active by asking others... like for example, I asked you a lot, right? Because you were a lecturer before.. for many years. So, I did ask you whenever I cannot deal with the students.. or I had trouble in dealing with them. But you like probably maybe 70-30 is not the accurate erm division, but that's just what I thought.
147	R	Hm hm. Besides asking others, do you go online.. and Google or watch videos or workshop.?
148	I	Yes. Yes. Now that you mentioned it, yes, I do Google a lot. I read online, I watch a lot of videos, erm workshop, not yet.
149	R	Okay. So, videos, meaning YouTube?
150	I	YouTube. And right now.... We have ChatGPT. I think it's very, very helpful.
151	R	You use a lot of ChatGPT eh?
152	I	Yes. Yes. For the recent months, I use a lot of ChatGPT. Especially when I wanna come up with a lot of exercises. And it has.. helped me save the tons of time. Yeah. And the thing that I did was.. I always tried to scout the internet for a very good article online. Something that is on my students' level of English. At the same time, I want it to be relatable and not boring for them. [Okay.] So, it is very hard because their English erm is not so good. So, whenever you want to look for articles, it would be too.. hard for them to understand. So, you would find articles that are very, very, erm that is catered for younger children. So, ChatGPT has helped me a lot, because I would just look up for all the topics that is relatable to them. For example, maybe heartbreaks or something that I feel like they would remember. Because whenever they read a text, if they remember, it will be better for them to remember all the new words. Like when we study Arabic, right? [hmm] Yeah. So, ChatGPT, the problem is aa it cannot read emotion. So, it's very hard for me to find an article that is relatable. But ChatGPT could give me and provide me an article and I could just edit it myself. It saves tons of time. Oh yeah. At the same time, what I did was, I would Google up like.. words or vocabularies for Grade 7, aa 7 Grader or 8 Grader. Something that I feel like is erm suitable for my students. And then I would probably get 30, 30 or 30 plus vocab. And I would give it to ChatGPT and I would type "Can you come up with an article that contains these words?" Yeah. Because I specifically

		want them to be able to get new words. That is for their level. Yeah. So, I do feel like ChatGPT is very helpful. Especially in teaching.
153	R	All right. Okay. Erm.. fo you have a lecturer in mind.. that taught you something really valuable, that impacted your employability?
154	I	(Nods)
155	R	Okay yes. So, what was the knowledge taught, that you wish this knowledge should be taught to everyone, in every university?
156	I	Okay hold on.....So, I could just choose one lecturer?
157	R	It's okay. It can be.. more than one. But.. something that- the knowledge is very valuable that it should be taught to everyone so that by the time they are graduated, they become highly employable.
158	I	Okay. There was this one lecture and her name's Ms. A (not real name). I think it's a.. she was a straight-A student. And then after she graduated, she immediately become the lecturer at IUM. Erm....What I learned from her, it's definitely how to take notes. Okay. Because when she was teaching me, she taught me through the notes that she had. And back then, like I said, I wasn't from a boarding school. I'm not a boarding school student. So, I wasn't trained with that. I just read and whatever that I remember, I remember, whatever that I don't is like, whatever. So, she taught me that, so I would say note-taking. And then Mr. B (not real name). [hm hm] I still remember what he said. He said that reading is very, very important. And he would say "Start reading newspaper every day. It's not like we want to believe everything that we read in newspaper. But by reading newspaper, of course it would make us more knowledgeable. After we read, we could decide whether we want to believe it or not. We can make the judgment ourselves." But it was- it definitely helped me to become more matured. And erm you could get more, you learn more vocab as well. And.. when you meet new people, you could do that small talk. [Hmm] Yeah. Which I think is a very, very helpful social skill. [Okay.] And at the same time, Mr. B also taught me to write erm a very critical paper. I wouldn't say paper, aa assignment. [Okay.] So, instead of saying something is black and white, I don't think things are black and white anymore. I do believe I need to be critical in something. It could be that I could write about a certain issue, but I'm not totally agree with it. Yeah. So, I think aa critical thinking. Mr. B taught me critical thinking as well. Aa Madam C (not real name) taught me public speaking. And I would say one more, aa Dr. D (not real name). Do you know him?
159	R	No. Who was it? Sorry?
160	I	Dr. D. And also, Prof. E (not real name). These two they are the... aa literature lecturer. So, what they taught me.... they taught me about life. They taught me to be creative in thinking because they taught literature. And they taught me that, the more you read... the more you realize that you do not know. [Okay.] Well, basically that's the gist of it.
161	R	Okay. So, I'm interested to know how did they... teach you to be creative? Aa..
162	I	Creative thinking, you mean?
163	R	Yeah. From the literature subject..
164	I	Because I think is- in literature what we did was, we were given materials to read. And then we would come to class and we would discuss or argue about it. [Okay.] So, basically everyone has their own point of view. For example, I come from a different background from my friend. So, I would see things differently. If I come from a poor background, I might see certain things differently and I.. might not agree with my friend, who is more wealthy than me. Yeah. So, we would erm argue about stuff. And at the same time, in literature there's no right or wrong. Because the thing is, when you read from a novel, you need to understand what was the state, what was the.. timeline that it was written. It was written in. For example, it was written a hundred years ago. And back then, women are still staying at home as housewife, for example. So... that really helped me to think through whenever I read something and whenever I encounter anything in life. So, yeah, that's how it helped me with creative thinking. I want to ask you something.
165	R	Okay.

166	I	I remember this one lesson I did with erm Prof. E. Actually, it wasn't my class. It was my boyfriend's (now husband) class. So, I joined his class, but then.. I was being outspoken in it. And I actually argued with him about it. And I remember my lecturer said he understands both of us. He understands both of us from our both point of view. And he said there's no right or wrong. So, what we were discussing about is.. about this guy. His name is Buphati. Do you have the time? [Yeah] It'll take about two, three minutes. So, Buphati, he lived in the... he's from India.
167	R	Is this from a literature?
168	I	Yeah, literature. So, this was erm probably 500 years ago. I don't know, 300 years ago, 500 years ago. So, Buphati, he got married to this girl. I can't remember her name. So, the first line of the novel, it says that "Buphati has enough money to live. Writing is his passion." [hm hm] Okay. So, I was holding on to that sentence and you will understand later why. So, what happened was, Buphati, he's very, very good at writing. So, back then, they.. just started with printing press. With the printing press. So, he made a... So, what happened was he was married to this girl, and he did not give enough attention to the girl. He was very busy with work. So, what happened was erm his own nephew came from another state. And he asked his nephew to spend time with the wife. So, this wife eventually fell in love with the nephew. [Okay.] Because her husband is busy working. So, I was arguing with my boyfriend. Because he thought that this girl is wrong. Because she actually cheated. Right? To him, she cheated. She didn't do anything. She just.. secretly in love with the nephew. And she likes spending time with him. The thing is, the nephew doesn't reciprocate the feeling. And Buphati knew about it. [hm hm] So, this was hundreds of years ago. So, what happened was back then in India, the guy was old and they married a younger wife. They had young wives. So, this girl, she's not matured enough. Right? Of course, every girl needs attention. [hm hm] So, what do you think?
169	R	What's the question? (Chuckles)
170	I	(Chuckles) Sorry, the question is, who do you side with?
171	R	Okay. Let me ask first. Aa... Is it incest, if she falls in love with her nephew?
172	I	No, no. It's a distant relative.
173	R	Oh, okay. What about the age gap?
174	I	Because aa the age was not stated there. But, our lecturer told us she is probably 9 years old, 9 to 13. [Okay.] So, she's very young. But, that was common back then, for an older guy to marry a young girl. So, what happened was, the guys were saying- the guys in the class were saying that this girl cheated. Because all husbands are busy working. They need to work, to provide for the family. Right? So, husbands cannot give us 100% attention. [hm hm] Yeah. But, I remember the first line of the novel. It was stated by the author that, "Buphati has enough money to leave." And it was described in the novel that the house was.. huge. So, writing is actually his passion. Even though he already had all he needs to provide for the family. But, he still did not give the attention to the.. wife. To me, that's my argument. Why do I feel like Buphati is in the wrong. Yeah. But, to the guys in the class, they feel like erm that's not an excuse, for the girl to cheat on the.. husband.
175	R	I thought you said her nephew didn't reciprocate? So, it's not cheating, right?
176	I	Yeah. But, to the guys, because this girl, she is already married to Buphati. And she has feelings for Amal, Amal is in the nephew. And she keeps on writing to him. She writes letters. Yeah. So, to them, that is cheating. Right? It's not cheating. If there's no action involved, you do not do anything. You do not tell them you like them or whatnot. But, the thing is, she wrote letters to him, asking him, "When are you coming back?" "I really miss all the reading session with you". And so on. Because the girl couldn't read.
177	R	I think I understand both... sides. Yeah. I wouldn't say Buphati is.. 100% wrong.. But, as you said, he has all the money in the world. <i>Kenapa nak kena kerja gila-gila?</i> He can just work maybe... I don't know, 9 to 5. And then come back home and give attention to his wife. And then, for his wife, I feel like aa she's selfish. Because.. aa you said it's normal during that time for the husbands to be working, and the wife to be at home, right? So.. aa I think it's selfish because the husband is.. working hard to earn for the family. But, you are only thinking about

		wanting attention from your husband. And then, when another man is giving you the attention, you forgot all the.. sacrifices that your husband is making. But, at the same time, I think the husband is also stupid (chuckles) for not thinking about your wife's needs. She doesn't just need money, she needs love. So, if you don't have the time to give love, then why get married in the first place? Just work <i>lah kan</i> , if you really love writing.
178	I	If you don't want to carry the responsibility, right? As a husband. So, basically, I can see that you are.. prone to having the same kind of thinking with the guys in the class.
179	R	Really? (Chuckles)
180	I	Yeah. So, what I said, this is what happened in the literature class. [Okay] We did not really argue, but we discussed ,with the lecturer interrupt from time to time. Because they know better. So, when we discussed, they would say, okay, this happened 500 years ago. It was common for girls to stay at home. So, all this knowledge, we do it with our reading, but at the same time, with the help of our lecturers as well. So, that is how it helped me in creative thinking, helped me to realise that nothing is black and white. Yeah. Yeah.
181	R	Later, after this interview, maybe we can discuss further about this. [Laughs] I have some more to add, but later eh. (Chuckles)
182	I	But right now, after we have that discussion about that one specific story, do you get how it's like to be in a literature class? [Yeah.] So, I want to know your point of view. Maybe after this interview.
183	R	Okay. I would say just one liner <i>lah</i> . It feels good to be.. able to point out your point of view, without feeling judged. [Yeah.] Meaning to say, you are celebrated. You feel celebrated, just by aa speaking out loud what you have in your mind. So, if it's in a normal classroom, with typical lecturers, maybe.. aa you will feel judged.
184	I	I agree. I agree.
185	R	So, maybe that's why you really love the lecturer and the class because every...aa <i>setiap pemikiran tu diraikan. Setiap pandangan diraikan.</i>
186	I	Yeah. At the same time, we can see how it helps us as students in communicating and voicing out our opinion. So, this really helps us.. later on.. in our job.
187	R	Okay. Alright. Aa.. Yeah, that was really long answer. (Laughs) [Chuckles] Okay. We have a few more to go. What skills have you gained during your degree that makes you attractive, that makes you stand out.. to employers.. in your field?
188	I	I would definitely say the language skills. Erm.. Communication skills as well. Yes, those two.
189	R	And then how do you package yourself, that influence employers to hire you? How do you.. showcase your skills? How do you present yourself, before the interview, during the interview?
190	I	Basically, what I did was erm definitely speaking in English. So, I show my strength in the.. language. At the same time, I try to share with them all the voluntary works. Oh yeah, I forgot to mention this before. I did a lot of voluntary works. Erm.. I helped to teach the refugees, which is something that I truly, truly like, for erm a couple of months. And while doing that, I showed my passion as well. So, definitely, language skills and also passion.
191	R	Teaching refugees.. who? Rohingya ke?
192	I	Oh, yep. Rohingya and also, I taught Orang Asli as well.
193	R	So, do you.. would you like to add this point to the previous question about something that the graduates should have been doing since first year? They should volunteer.
194	I	Yeah, definitely. Now that you mentioned it, I believe that yes, they should start volunteering early on, before they have all this commitment. Because once you have commitment, you will start thinking about all the cents that you spend.
195	R	What would, what would, what would volunteering help...aaa help them? What kind of skills that they will gain?
196	I	Erm definitely aa communicating skill, small talk, which I think is extremely important. I don't know about you, but I feel like small talk is important. Besides that, because when you do small talk, you don't want to talk crap. Right? You want to be, you want to have that skill of engaging in a conversation with someone new, that you just got to know. But at the same time, be very erm natural about it. And at the same time, be... not being offensive in any way, not hurting them. Even though you don't mean it.

197	R	Yeah. It's a skill. Not everyone is able to do that
198	I	Yeah, I believe it is. Which again, I would want to highlight how.. the whites do it very naturally.
199	R	Yeah. True, true. Okay. (Clears throat) So what are some Education 4.0 tools that you are using for employability? So Education 4.0 meaning currently, we are in Education 4.0. Education 4.0 meaning learning can be done anytime, anywhere. You don't, you don't rely... 100% for teachers to teach in class. Sometimes learning can be informal. It can be through social media, it can be online, it can be through YouTube, it can be anywhere. You know. Even when you join workshops or trainings, you can do it at your own pace. So.. what are some of the tools that you are using aa for your employability?
200	I	As a teacher?
201	R	As a teacher, as well as previously, when you were working, when you were looking for job.
202	I	I would say YouTube. Erm.....
203	R	So YouTube, you use it to find information?
204	I	Yes, to.... Aa whenever I want to come up with my own module, I would go on YouTube. At the same time... Sometimes I would just Google it, they have it in PDF. Okay. Like all the slides... Erm.. Instagram as well. I wish I could say TikTok because I do believe that there are a lot of materials there. But unfortunately, I'm not a TikTok user. [Okay.] So yeah. All right. I feel like there is a problem when it comes to this Education 4.0. Because.. the thing is when everything is there online, people don't really give you credits for it. [I see.] Yeah, if it's from you and you share it. Even if you share it for free, you share it. Even if you sell it, you sell the materials. Sometimes if we want the materials, we have to pay for it, we as lecturers.. But do we truly credit them?
205	R	Hmmm. What about when you were looking for jobs? Erm previously, how did you use these tools to look for jobs?
206	I	 Honestly, I didn't do that. Because I got this job. I got to know about it from my friend. So I don't have LinkedIn. So I know that some of the people might have all these other platforms and then use it. But I cannot say that I use it because I did not. And at that point I did not plan to work. But it's just that, teaching is something that I've always wanted to try. And my friend said there's a vacancy.
207	R	What about the job in Zalora and previously in TV Hijrah?
208	I	Yeah. Okay. For Zalora, it was from my friend as well. One of my friend, her husband was working there and she was saying there's a vacancy. So I just erm gave my resume and I came in for the interview. But I did not. I didn't know her husband personally. Yeah. So I did not apply from online or whatnot. For TV Al-Hijrah, the opening is mentioned on TV.. So my parents just like asked me to go and try. So I just walked in for the open audition.
209	R	Okay. Erm... So just now you said about.. the problem with using Education 4.0 tools is sometimes credits are not given to the creator. Right. Anything else? In terms of the disadvantages of these tools?
210	I	I don't think so because I feel like it is really helpful for the students to aaa do self-study. Some might argue that, by using all this platform, it's hard if they want to ask questions. Because you don't have like a... physical human being to ask. [Yeah.] So maybe that. But but I feel like if you're proactive enough, you could still find answers. Because there are vast of knowledge on the internet right now. So... I don't think.. I feel like students who are able to do.. to carry self-study correctly will be able to sustain without a.. teacher. Okay.
211	R	So in terms of learning..
212	I	But... But I feel like.. it could be a different thing when you do your Masters. I don't know, maybe you know better. Maybe it is really required for you to have a supervisor. Right? [hm hm] You need that someone for you to...[Guide] ask... yeah someone to guide you throughout your journey.
213	R	So... you are saying.. for learning sustainability, the advantage is it's helpful for self-study, right? By using Education 4.0 tools, it helps them.. to study independently. And then, aa in terms of the disadvantage, there's no human touch for them to ask questions. And then aa

		sometimes people don't get credits. Creators don't get credits. Maybe plagiarism. [Yeah] Are you saying that?
214	I	Yeah.
215	R	What about employability? How would Education 4.0 tools.. help.. for graduate employability?
216	I	You mean aa using YouTube?
217	R	Yeah. Maybe using YouTube, using social media, using all these.
218	I	I think there are two points that I want to highlight here. So the first one is, if you want to go for an interview, you can go on YouTube and Google up "How to be good at an interview". And there are a lot of tips given and those tips are extremely, extremely helpful. Especially for those who are.. eloquent from the start. They are very good at it. They just need some tips on how to make it right. But for those who.. are not very, they don't come naturally at that.. at an interview, they could, it still help them. But they have to start watching.. all these videos from early on. Maybe a few, a couple of weeks before the interview. So I do think it does help, with employability. At the same time, for the students, I think it helps as well. Because erm if you start doing your own YouTube video, from time to time, you'll be more good at public speaking. [Hmm] And people could just watch your videos. And from those videos, they could see what kind of person you are, if you're good at talking. What are the best that you could give? Because the thing is with YouTube, you could just aa record yourself at home. So you don't get nervous. There's nobody in front of you. So you could also do a lot of re-take. [hmm] You can shoot many times. You can take your own sweet time to erm provide the best result. So when you do that, your employer, your future employer can see what are the potential that you have in you. Because sometimes just the interview is not enough to.. show the hiring managers.. what are the best potential that you have in you. So I feel like aa this will help in both ways as a student who wanted to work one day, and also as someone who.. want to go for an interview.
219	R	Hmm.. Okay. So that's a very good point. Erm.. What about the disadvantage of the tools in terms of.. for their graduate employability? That affects their employability?
220	I	You mean.. the disadvantage of social media?
221	R	Social media, or any other Education 4.0 tools that graduates are using... what would be the disadvantage?
222	I	I would say erm..... there's no privacy. [Okay.] The thing is your.. your future employer could do a background check, just by looking at your profile. People could say that you could turn your profile on private mode. But, not everybody wants to do that, especially people who want to have their own gaining, something through social media, they have future plans about it. So.. yeah, I feel like privacy is the problem. Aa.. At the same time, you know sometimes on social media, you just want to be yourself. There are certain kind of people. Some people just want to be themselves. If they.. voice out about their erm political views for example, or certain certain things, it might affect the employability.
223	R	Okay. So meaning.... freedom of speech is being affected right? This person's freedom of speech? [Yeah]. Alright, anything more to add?
224	I	No.
225	R	Okay. So aa final question. When you were in university, were you taught.. how to document your skillsets? Maybe in a portfolio? Or.. aa maybe you were taught to.. create video resume or using Education 4.0 tools to prepare for your.. employability?
226	I	No, I don't think I could recall any of that. I believe that I wasn't taught.
227	R	Aa... When you were taking this subject, the LOP? Were you taught how to create resume?
228	I	Resume definitely yes. Actually, I wasn't... You know the thing is with the subject.. The LOP subject, the lecturer was quite interesting. It was very profound when he speaks. But the thing is, he's a part time lecturer. So I don't think he gave his all. Well, he just comes, he goes there, he just talk and talk and talk. And he's very good at it. So, but the thing is, I don't think he gave his all. So erm he probably just asked us to write a resume, and then give marks. So he

		did not truly guide us one by one, step by step, which is actually needed, right? [Okay]. Especially at the bio part, the place where you write a bit about yourself, a bit of info, certain sentences. Erm.. How do you highlight yourself and try to grab the hiring managers' attention.. So.. yeah, I do acquire that from one of the course that they did for BENL students. So.. they have a group of teachers, not actually teachers, they are preachers, they are Christian preachers. I don't know why they invite them to IIUM. But, these Christian preachers, they teach us English, they teach us how to do resume as well. So, yeah, those are the things that I remember. So they taught me.. how to write the bio section and also, erm I remember they say not to use this word in interview, like words like "stuff", words that are not formal... But then again, the course only took about one week. About one week... so they could not teach us much.
229	R	Okay, so did this help you.. when you were learning with the Christian preachers about how to write, what kind of information to be included in resume... Did it help you in employability?
230	I	Erm. Yes, maybe 20%. Okay, only 20%. Like I said, it was very short. Because actually took longer, probably two weeks, three weeks, I don't remember, but I could join for only one week.
231	R	Okay, aa what about, so meaning to say you were not taught how to create a portfolio? A collection of evidence... or..
232	I	No, and not even the video that you mentioned.
233	R	Video resume?
234	I	Yeah.
235	R	Okay, what about.. aa did you learn how to do reflection? So after you learned something, you have.. to share your reflection about something that you learned, your point of view, maybe from the.. literature class, did you learn how to.. do reflection, reflection of learning?
236	I	Yeah, actually I just learned about it here, Cybernetics. So we had to prepare a SIM, what does it stand for? S-I-M-S. Self self..
237	R	Self-Instructional Materials.
238	I	Yeah, yes, you're right. So for that one, we had to do the self-reflection box for the students, to do self-reflection. So I learn about it here, and I do think it helps a lot, because it helps your mind to keep focus on the things that matter in your lesson.
239	R	Okay. Focus on the learning goals. Are you saying that?
240	I	Hm hm.
241	R	Okay. Do you think it will help... this self-reflection.. Do you think it helps for employability?
242	I	No. I think it depends on the subject.
243	R	Okay. Meaning?
244	I	If it's a subject that is erm.. maybe an LOP subject, then it might help for the employability. Other than that, it helps you with your grades.
245	R	Okay. All right. Aa.. do you wish that you have learned this when you were in uni? Oh, doing self-reflection, and then how to write in resumes and all that.
246	I	Yeah. Now that you mentioned about the self-reflection, of course, yes, I think it would help me a lot.
247	R	In what ways?
248	I	To remember more.. when I study. But the thing is because I have a very cool best friend.
249	R	What? Sorry?
250	I	No, because the thing is I have a cool best friend who always remind me to study. (Chuckles) [Chuckles] And help me with my studies. So I don't know but the self-reflection could probably help us better.
251	R	Yeah. Okay. hat about E-portfolio? Have you heard about E-portfolio?

252	I	No.
253	R	So e-portfolio is basically a portfolio, a collection of.. evidence or skills that you have done. For example, during uni, you have done a lot of assignments, right? Maybe you go for field work, you go for volunteering. So all of these, you document, and you put it in one place. It's a collection of evidence. So we call it portfolio. Aa.. Some courses they have portfolio, for example, architecture. Because they need to showcase their designs. But some courses, they don't learn this. So.. and then right now in Education 4.0, we have E-portfolio. So meaning, you collect all these and then you put it online. And then when you send the resume, you can send the link, so that people can see the portfolio. Do you think.. this should be taught during uni?
254	I	Yes, definitely. I think it would have a lot, especially for the students to... give their all in their assignment. Because they know that this thing will be in the portfolio. Of course, they want to present themselves in the best way that they can. So I think yes, this would definitely help a lot. And I feel like I've seen yours. I don't know. I don't know if you have shown me before. Maybe I've seen yours. I think you have shown me this before. You have your own portfolio.
255	R	Okay. So aa you agree that it should be taught. [hm hm] And then how do you think it will help them, for their employability?
256	I	Like I said, it helps them to focus more during their studies, to do their assignment.. in a better way. Because.. erm it will be there forever. Okay, that's number one. Number two, I think erm... maybe at the same time.. they would be more enthusiastic and doing more work.. so that they could compile it in a portfolio. Yeah. And you know sometimes students, they are lazy. They do their assignment and they do not double check. So they give you with all these spelling errors, grammar errors, and plagiarism and so on.. some even go ahead and copy-paste stuff right? [hm hm] But if they have their e-portfolio, I believe that they'll be more concerned about plagiarising and so on.
257	R	Okay. What about their.. to sustain their learning? Do you think doing E-Portfolio... all these will it help them to sustain their learning? To remember..
258	I	Yeah, I think so. Especially, you know, back then when we were students, whenever we do assignments and we get good marks for the assignments, or sometimes when our lecturers use our assignment for samples for the juniors, of course we would remember, right? [Hmm] So yeah, I think so, yes. It does help us to sustain.
259	R	Alright, we are actually at the end.. of our interview. So do you have anything more to add, maybe a conclusion or anything?
260	I	No.
261	R	Alright, so I would like to say thank you so much. Thank you so much for willing to spend your time to be interviewed. And all your sharing is actually eye-opening and hopefully it can help with my research. Thank you so much. <i>Assalamu'alaikum</i> and take care.
262	I	Okay, thank you. <i>Walaikumsalam</i> .

APPENDIX M

VERBATIM TRANSCRIPTION INFORMANT 9

Name: Alumnus 3

Place: Google Meet

Date: 5 June 2023, 8.30 p.m.

DU	R/I	Transcription
1	R	<i>Assalamualaikum.</i>
2	I	<i>Walaikum salam warahmatullah.</i>
3	R	Okay, so I have briefed to you about the objective of my research and so on.. So can you share a little bit about your educational background? Where did you graduate? And what was the program?
4	I	Okay, firstly, thank you so much to Pn. Sakinah for inviting me to.. interview for this session. And first of all, let me briefly introduce about myself. My name is Alumnus 3. I'm one of IIUM alumni and I graduated on 2013 in.. major in Engineering. So I spent there about four years.. and I managed to be graduated within the time frame. And then I.... my major in Manufacturing Engineering, and then after study there about four years. So I spent about a week to.. get some rest and then after a week, I managed to be accepted to work as a.. what we call as a Production Engineer in DRB-HICOM. So during that time, so I.. involved a lot in a production especially in a production of car.. as well as automotive sector. So I spent there about... three to four years if I jumped to another industry which is oil and gas. So again, I spent there about.. three years also and then now I turned the table around, and then I changed my career to be a taxman. So that means I changed my area of working from Engineering to Finance and Accounting. So that's briefly about me.
5	R	Oh, currently you are in accounting?
6	I	Yes, to be specific, not Accounting but also in Tax. I work for IRB, Inland Revenue Board. Of course. But actually my area of studies in Engineering so aa if I talk about my interests. So I have a lot of interest actually still in Engineering... which is I have experience and interest in Engineering in dealing with the Manufacturing and Production, because of the what we call as <i>rezeki</i> right. So I decide to change my area of working, job career to tax which is IRB <i>lah</i> .
7	R	Okay, so what made you.. what was the decision that you take that made you change your career from Manufacturing Industry to Finance and Accounting industry?
8	I	Basically... the main reason I changed my career is because of the economy situation, past.. five years I think, because during that time I work as a Production Engineer in ABB, one of the leading company in oil and gas. And I think you also know about that during that time oil and gas industry not so stable. So mostly what we call they end the service of their workers a lot. So even myself I also worried about my career that time. I worry about my job that time and the offer from IRB come right on that time. So without further thinking, so I just accept the offer. So thinking because thinking about the.... future of my job. And I think I made right decision because I heard that my previous factory has been.. shut down because of the unstable situation of economy at that time. So I think I made the right decision.
9	R	Okay, so how long currently you are in IRB?
10	I	I've been in this industry about aa.. five years. I've started on 2018 until now, 2023. So I think so it made up about five years.
11	R	Okay, so how do you feel that your Bachelor's program? Aa bachelor's degree has prepared you for employment?
12	I	My bachelor's degree.. okay. So if I try to relate about my degree and my current job, the in terms of knowledge, it will not much related because my area of studies in Engineering. And

		then, I work as a taxman. So that means.. compared to previous job, it is more relate to my area of studies. But... okay, if I talk about the relation from my previous job to my area of studies, depends based on the knowledge that I learned from IIUM. So like I said previously, I studied in Manufacturing Engineering. So I managed to work in a right sector, which is manufacturing industries, manufacturing, manufacture the car. So the knowledge that I managed to get from my Bachelor's degree in IIUM, I managed to utilize a lot in my job career before, which means that everything that I learned from my studies, I can use it in my previous job. So I can say, I'm one of the lucky men because I managed to get a job exactly as my area of studies.
13	R	Okay. For your current industry?
14	I	Okay, one of the fact from past five years in IRB, I heard that they changed the policy of the company.. because previously they hired a lot of new staff from the background of accounting. But in 2018, I heard that they.. tried to hire from different backgrounds as well as Engineering. At the beginning, I don't know what's the reason behind this lah. But now, when I talk to my senior and other staffs, they said that because the company, they heard that.. the students from different backgrounds, they want to utilize the skill and the social skill because they, like this, the things that I experience, normally the staff, even though they come from Engineering background, they managed to adapt with the job career even though they come from different backgrounds. So that's why the company, they hire staff from other than Accounting background.
15	R	So in terms of the knowledge, because you were in different industry, right? And you were in Manufacturing and then now you are in Accounting and Tax industry. Aa.. how do you upskill yourself to meet the employers' expectation?
16	I	Hmm..... how do I upskill myself....
17	R	How do you... do they provide trainings or do you learn at your own?
18	I	Okay. It's tough questions.
19	R	No, meaning because you are in different fields, I would say different fields right, between Engineering and now you are in Accounting, right? So I don't know what kind of subjects that you took during your Bachelor's, maybe you learned Accounting or if you didn't learn Accounting back then, how do you.. how do you learn, how do you upskill yourself? Like aa.. does your company provide you trainings? Or do you need to go for a different training, an external training on your own? How? I just want to know how.
20	I	My company they do provide training. But most of the time I just need to undergo on the job training, that means I trained myself.. during the progress of the job. It means it's not a specific training for me. But the thing is.. when we talk about upskill myself, even everyone also, I think the thing is we have to.. willing to change and adapt to different roles. One thing is I am very proud about IIUM is.. most of the students graduated from our IIUM, they managed to adapt with any different roles. Even though they.. come from Engineering they managed to adapt with the environment as Accounting and the others. It means it is about myself, it is about ourselves. [Hmmm] Nowadays we talk about fresh graduate from university. Most of them, when they go into the job market, when they go to the job industry.. they willing to compete with others. Which means that they did not scared to step in the front and show what they have, to differentiate them with others. But most of the people, most of the fresh graduates, when they jump into the job market they still scared.. they're not ready to adapt to the different roles. But for me.. the things how I upskill myself is I set inside my mind, any challenge I have to face, I try to adapt and try to do the best I can. [Hmm] But when I change my career to Accounting I try the best to adapt myself and then just learn, gain the experience and knowledge from senior workers.
21	R	To summarize aa.. in your industry they do provide training but mostly you learn on the job and.. you learn from the seniors in your industry, right?
22	I	Exactly.
23	R	So you said just now.. in IIUM the students learned different roles. Can you elaborate on that? Can you provide the kind of examples of the things that you learned when you were in IIUM? Where did you say that about "the different roles"?
24	I	During my study in IIUM, during my time.. I involved a lot with the society and program also. So I think things like involvement in the program society... taught me a lot of leadership skills, communication skills, social skills and these kind of skills, I used it a lot during my job career. It helped me so much. I don't know about other universities but I think... they will do the same also. They also have a society but when I talk specifically about IIUM and

		the involvement in program society, it improves a lot of my social skills and I can use all of this.. in my job.
25	R	So.. talking about your university.. what do you think can be done by the university? What can be done by the lecturers.. for better employment in the future?
26	I	First of all, maybe they can gather again all of the alumni and do like the sharing session. So the alumni of the university they can share their experience and knowledge to the students.. So.. Before the students they jump, before they jump with the real job market outside.. so they can prepare themselves based on the explanation or sharing from the alumni. I think that's the thing that the university should do. But I think- because last time I received a few emails from IIUM and they invite me to attend it's like sort of a.. ceremony, gathering all the alumni and I managed to attend once.
27	R	What about the lecturers? What do you want them to teach future graduates so that.. when they go outside they become highly employable?
28	I	Aa..... what can I say about IIUM lecturers, most of them they'll will just teach the students.. based on the syllabus. Based on the book. So maybe they can improve some more by relate what they teach the students with the real situation of the.. job outside. At least.. we can relate what the thing, the topic or the knowledge that we learned during the study.. and we know exactly where we want to use that kind of knowledge when we work someday.
29	R	So according to your opinion.. what do you think are some of the attributes or skills that.. employers consider important among graduates?
30	I	Attribute.. I can see that employers put in the front nowadays is.. such as leadership, what else aa.. teamwork, professionalism also, collaboration.. and communication skills. I think on top, on top of the list is, I think leadership is the most important.
31	R	So according to you.. leadership would be the most important that employers are looking for in graduates? [Yeah]. So taking from yourself.. how do you showcase leadership skills to future employers? Do you put it in your resume? Is it showcased during the interview? Can you just share from your own experience?
32	I	Actually our resume, just for the company to filter which of the candidate they want to call for the interview session. Okay, once they invite the candidates.. and the leadership skill will be the one that will differentiate between the person and other candidates. The reason is, okay, just share one of my experience that when I get interviewed by DRB-HICOM and then they asked me, no, no, they asked all of the candidates to present about their final year project. That means we need to present all of our final year project. Actually, the purpose they ask us to present about our project is not they want to see or know about our project or know the details of our project. Actually they just want to see the skill of the presentation skills, how we elaborate.. and when they ask the question, when I managed to be accepted to the company. So the HR told me, they told me, actually when they asked the question during the presentation, they don't want to listen the answer from the candidate is, "I don't know, I don't know". [Hmm]. The one present the.. he gives the presentation, but you don't know.. how to answer the question. Actually, they don't care about what kind of answer, they just want to see that the candidate is confident and.. confident and know very well about the project. They don't care about what kind of answer that the candidate will give. Another thing is, I also have experience in interviewing other students, fresh students graduated from many universities and I asked them, "Let's say if the company gives you a task or assignment.. or put you as a leader in a team right.. So what will you do?" Some of them said, "Okay. I'm ready, I prepared myself, I can step in the front, that means I can lead the team, I can do the job very well, I will try to accomplish the mission given by the company". But there are some candidate also, they say, "No, no, I'm not confident enough". So this kind of attitude, if we want to compete with other workers in the company, so we have to prepare ourselves, which means that we have to be ready all the time.. to step in the front. That means not saying "No, no, no", to the things assigned to us. But that's why some people, based on my experience, some of people, even in IRB also, some of people they talk about promotion. That means they want to be promoted to higher position. But when the company assigned them with the task.. or the position to be completed, so they decline, they said "No, I'm not ready yet". So I think that kind of attitude is not good. So if you want to be promoted to high position, you have to.. prepare yourself and show to the company, what the things that differentiate yourself from others..
33	R	Hmm. Okay. All right. So just now you mentioned that leadership would be- for you, leadership would be the most important, right? Yes. After leadership, what would be like

		the top three? So leadership number one, and then number two..?
34	I	I'll put teamwork as second. And the third one is.. professionalism.
35	R	Professionalism, eh? What do you mean by professionalism?
36	I	Professionalism actually is a very general, but it consists of you master the knowledge that you learned. If you wish you work as a accountant, that means you master the knowledge of accounting. And then when we.. someone ask about accounting and you can simply just give the answer, that's what we call as professionalism.
37	R	Okay. Aa.. Why did you arrange in such way? Why did you say leadership is the most important.. and then number two, teamwork, number three, professionalism?
38	I	The reason is because, let's say, because previously.. I.. once I read about scholars, scholars they said about, even though you don't have the knowledge about the things, if you have that strong leadership, you can turn the table, you can turn the table around. It means you can change the decision of someone from this to this. Even though.. you don't have actually much knowledge about that kind of things, but because of strong leadership skill, you can change the people. And even though you have a good leadership skill, but if you don't have a good teamwork, still people will not follow you. So that's why.. once you have a leadership skill.. and then you manage to work together with others, you manage to collaborate with other team members, work in a team, and then everyone.. will support you even though you don't have strong knowledge about the things that you run.. because of the leadership and the teamwork, people behind you will support you.
39	R	Okay. What about professionalism? Why do you say it's..
40	I	Professionalism is the knowledge about the things that they run, so that means even though you have the strong leadership skill and also teamwork.. still you need to learn, improve the knowledge day by day. So this kind of- these three things must.. come together, come along.
41	R	Okay. What about the least important? What do you think is not as important that employers look for? Skills or qualities.. Just now you mentioned leadership, teamwork, professionalism, collaboration, communication, presentation, presentation, just now you said.. then confidence. Yeah. If you want to add some more, you can also add.
42	I	Hmm....
43	R	Is qualification important for employers?
44	I	Yeah. And also the most important because it is like the gate to the company, you have to have, you have to possess a good qualification in order to be called for interview. But if I talk about the one other attribute that the least is important, maybe I can say the communication I think.
45	R	Communication. Why do you say that?
46	I	Honestly speaking, actually all of these attributes, actually all of it is important.
47	R	Okay. So you are saying all are important. But the most would be.. leadership, team work and professionalism. [Yup]. Okay. Let's say you are saying all the skills that you listed earlier all are important. Which one would be at the bottom?
48	I	Aa.. Okay. If I rank all of the skills..... I put collaboration at the bottom. Because sometimes when we work, when we work in a company, some career or some position, we don't need to collaborate so much with others. Like myself, I'm as a Audit Officer. So I.. sometimes I don't need to collaborate too much with other officers. Because I just need to do my job. So I just.. just complete the case assigned to me. But still in some cases, I still need to work together with my colleagues. But that's why I put collaboration, maybe the least important. But, it doesn't mean that it is not important. It is still important, but maybe it is the least important.
49	R	Okay. All right. Okay. So how can leadership, teamwork, professionalism, how can these skills that you listed earlier, how can they help graduates become employable?
50	I	Hmm.. Because company, normally company is looking.. Company, any company in Malaysia, even in outside of Malaysia also, they are looking for the staff that is independent. Means come with a good package, with a good social skills, good attribute. Because.. when you jump into the job market, most of the time you have to be independent. You cannot rely on others, you have to be independent, which means that you have to make a decision on yourself. Every time you cannot just ask the superior, "What should I do, what should I do" right? Especially when you graduated in higher qualification as well as watch Bachelor's degree, Master's, Ph.D and so on. Because this kind of education level, you have to come with a package that you can stand by yourself. You can't rely on others. That's why, most of

		the company in Malaysia, they are looking for quality workers like that. This one is shared from HR <i>lah</i> from my previous company.
51	R	Okay. Aa what about learning sustainability? So learning sustainability here, meaning whatever that they learned during university, it doesn't stop at exam. They will still apply what they learned in the workplace. They remember what they learned. They can sustain what they learned. And they can even build new knowledge. They can do self-study to improve themselves.. So this is what we call learning sustainability. So how can the skills that you listed earlier, leadership skills, teamwork skills, professionalism, how can these help graduates to sustain learning?
52	I	Leadership, leadership.. is not start at education level in university. It start at the beginning, right? Even from our primary school, even secondary school, and in a university stage, even after study also, in a job, still you have to utilize that kind of skills.. leadership. Which means, even though you did not assigned for any higher position, still you have to leadership, you have to lead yourself to make a decision. Which means, let's say, if you work as an Engineer, so every time you lead a group of team of Technicians, you have to lead them to make a decision what to do. Because normally for.. based on my experience, I'm normally for a group of Technicians, most of the time they rely on the Superior. So they don't know how to make decision by themselves. So every time they face an issue or a problem, they'll ask "What to do, what to do?". So in this skill.. So what I mean is, so every time.. in any situation, still you have to improve your leadership skill. So you can lead a group a team of workers or group of workers.. very well. So at the final, at the end, the decision or the result that will resulted from your decision or action.. is meeting your goal.
53	R	Okay, so you are saying.. you need leadership skills because your leadership doesn't stop at the classroom, leadership continues. [Yes.] Until forever. Is that what you are saying?
54	I	Yes. Correct.
55	R	Okay. So what are the things.. what are the strategies or the things that, because currently you are an alumni, you already worked. So what are the things that you wish you learn, that currently you have learned in the industry, but you wish you learn earlier during university?
56	I	Hmm... It's quite difficult to say.
57	R	We can put on pause. We can put this question on pause. Later, I can ask again.
58	I	Because the thing is, things that I learned during my study in the IIUM, I manage to utilise it a lot in my job. So, that's why I said previously.. So I'm the lucky man, because I managed to be hired previously, for the job that is exactly matched with the area of my studies. So that's what I think is difficult, quite difficult to say, about the skills that I should learn earlier in my studies in the university. Thanks to IIUM, because of the knowledge and skills that they taught me previously, so I managed to have a good job career from previously until now.
59	R	Okay. So, to continue on that, what do you think something that graduates should have been doing during their academic years? Something that they should start doing from then, don't wait aa during the final year. You should start doing this from the first year.
60	I	Hmmm. Maybe instead of going to the class every day, maybe they can, for those who are involved in studying Business or Accounting, they can slowly start.. what we call business, small business just have a side income, and then at least they can.. prepare themselves, or they can.. see the real situation outside of university, so rather than just wait.. until they've been graduated, they can slowly prepare themselves. And the same goes to the other students from Engineering. Maybe they can do the part-time job. So, part-time job at least they can gain some of the experience. So, at least they can see.. what is the real situation of the job market outside of the university.
61	R	Okay. So, what type of part-time job do you suggest you should they work in, should they take a job, something that is related to what they are doing, or it can just be any job?
62	I	The best is to do the part-time job.. which related to the their area of studies like myself. Previously, I even do the part-time job selling computer, selling computer even I.. those kind of things, that kind of job, but it quite relate to my area of studies previously. So, I, at least they can, the kind of part-time job, it helped me quite a lot also. So, at least they see the real situation of job market outside of university.
63	R	Okay. So, for you, you suggest for graduates to do part-time job, and it's better if it's related to what they are taking and the course that they are taking. [Hmm] How about to sustain their learning? What is it that they should do.. early on from first year so that they can remember what they learned, they can apply later when they work, they can do self-study, what are the

		things that you suggest them to do?
64	I	First, one thing is maybe they can.. study, try to study in a group, just.. make a team, so at least everything they learned, they can discuss in a team, because aa.. some people say that if we discuss in a team or if we communicate, or if we talk a lot about something.. with others or in a team, so we manage to remember that kind of things better, instead of study or learn by yourself, and then at the end, you simply forget all of the things that you learn, because nowadays we have a good social media, maybe if they cannot gather in a team or in a cafe or in other locations, maybe they can just simply create a group WhatsApp group, social media.. so they can just discuss inside a group, so why don't we utilize kind of benefit so they can keep remember the things that they learn.
65	R	Okay. Anything else that you would like to add?
66	I	I think it's all for now.
67	R	Do you have a lecturer in mind that taught you something.. really valuable that impacted your employability? [Yeah.] So what was the knowledge that the lecturer taught? That you wish this knowledge should be taught to everyone, to every graduate, so that by the time they graduated, they become highly employable.
68	I	Aa.. I have two lecturers or two subjects that I think helped me a lot.
69	R	Okay, you can share both.
70	I	First, I call this Design of Engineering, one of the subjects and the lecturer taught us very well about the subject, about the knowledge of the subject, because when I jump into the market, job market, and I work as an Engineer, so then I realize that subject is relate so much with my job career. So that's one time that I thank a lot to the lecturer because of the way how he taught us.. and then made us understand about the subject, and then I manage to use it so I can improve, I can shine during my job. Another thing is, UNGS, that one quite popular subject also. Do you know UNGS subject?
71	R	Is it the.. Islamisation of Knowledge?
72	I	Yes. UNGS. The reason why I quote the subject is because.. the reality about job outside of the university, every time you have to face the situation that you will be, you have to make the decision or you have what we call as integrity. You have to take care of your integrity, means that you have to be good workers to the company, that means you have to deal, have a good quality such as an integrity, so this subject also helped me a lot, I think.
73	R	Okay. I would like to know more.. about the Design of Engineering subject, because you said the lecturer put really well, he helped you, he or she? [He] He taught you in the ways that made you understand.. Can you share an example of how, how did he teach you? That makes you remember, that makes you understand.
74	I	Okay. The definition of Design of Engineering is, basically this subject aa.. teach students or teach the students or engineers, how to.. method of identification in solving engineering problems. Or simply I can say that.. this subject is teaching us how to solve engineering problems. So, when I work as a Production Engineer, a lot, I deal a lot with the manufacturing of car components, steering housing.. and there's a, there's a risk. Yeah, I just take a simple example, the example of, we have, we face a lot of problems, which the operator, that the background of the operator is, and Nepalese, Bangladesh, right, sometimes they load the component inside the machine.. wrongly, and when they push the Start button, and it will cross the machine to accident, and it will cost a lot of money to the company, so how to avoid these kind of things from happening? So, this is one of the examples where I utilize the knowledge from Design of Engineering, is I implement some kind of, we call as Poka-yoke, it's like a full-proof system.
75	R	Sorry, poka what?
76	I	Poka-yoke. P-O-K-A-Y-O-K-E. Oh, I think, I call it's called a fool-proof system. The idea that I get, is I put a some kind of sensor to the machine, I put the sensor to the machine, so when the operator they load the component to the machine, and the component will cover the sensor, the, we call as air hole, and if the, the operator load wrongly, and the part is not, it's not loaded correctly to the machine, the machine will not start, even though they push the start button. [Hmm.] But we call as fool-proof system, and this kind of idea, I, I can say that I managed to get from the subject also, and that's why I said, it helped me a lot, during my job previously.
77	R	Okay, so you learned about this during the, the university, you learn how to solve, uh, problems, right? How to solve?

78	I	Yeah. Actually, there's, there's more that I learned during my university, but it's kind of one of example.
79	R	..that you really remember? [Hm hm]. Is it because, uh, the lecturer did, did they use real situation?
80	I	Yeah, I, I, because I heard, I forgot about, name of the lecturer, but that the lecturer also come from the industry background, manufacturing, that's why, maybe he knows very well about the industry.
81	R	Hmm. So do you think every lecturer should be like that, come from the industrial, uh, background, instead of just being lecturers from, from the beginning?
82	I	Not exactly, but I think if they come from, uh, they may, they come from, industry background, and they, it will be, sort of, bonus to them. Yeah, the real, situation of the job, the students.
83	R	Alright. So what skills, that you gain, during your degree, that makes you attractive, to employers, that, that makes you hired, from the employer.
84	I	Uh, same things, leadership. Because when, when I jump into the job market, I will say to myself, even though I assigned any task, I would not scared, I'm ready to stand in the front, even though, even though, my superior asked me to present about, a project, or to give explanation to the client about some things. So I'm ready to, go to the front, the front, and give the presentation. [Hmm.] That's what I said, when we jump into the job, outside of the university, the thing is, we have to compete with others, every time we have to compete with others. So that's why we have to find the reason that will differentiate us, just from them.
85	R	Hmm. So, so in your case, how do you, showcase yourself to make, you stand out, to make you different from the other candidates?
86	I	When, when I'm signed, any task..or project, or when I, um.. promoted to any position. So, I, I will never decline, so I will never decline to my boss. Because some people, they keep declining, they keep running, right? So, I will never decline to my boss. Because some people, they keep declining, they keep running, right? They say "I don't want to do that. I don't want to do this" right. But for me, I always said to myself. I will never decline. I said, "Yes". Even though it's how much it's difficult. I said to myself. I will challenge myself until I, I managed to get, managed to achieve the target. Ready all the time.
87	R	Okay. So, what if the.. boss keeps on giving you more work? Because you said you always, you never decline, right? So, what if they took advantage?
88	I	The key is communication. Yeah, it happened once, last time. Uh, so I communicate with my boss, I talked to him that, I say that, uh, "The current workload is so high. So I asked him to.. get an assistant." So, fortunately, he agreed. he said he thought that I can deal with the job. And he don't know about that. So, thanks God, he said that I told him, and then he tried to get an assistant to assist. So, the key is communication.
89	R	Okay. All right. So, um, the example that you give to us now, uh, about you, how you make yourself different from the rest, is you said you never decline any job, right? What about before you work for the company? How do you present yourself, maybe during the interview, or something that you put in your resume, that makes you different?
90	I	Before I join, uh, based on my experience, the task assigned to me is I need to give a presentation during the interview. And, uh, plus I need to... um, because, uh, there's a test, like, call as a role-playing test, that means I act for the task that given to me. So, uh, so during that time, so I just make sure myself to give the best. Example.. during the presentation time, so I just make sure I ensure myself to deliver the presentation very well. And, when the... interviewer, when they ask me a question, so just, I just ensure myself to answer the question confidently. That means I will not just, simply say "I'm not sure." "I don't know", because this kind of answer is not good for interviewer, because they just want to see that you are confident enough to answer the question. So, I just said in my mind, I answer, confidently. Even though it is wrong, even though it's right, it doesn't matter whether it's right or wrong, but I just make sure myself to confident. So the key is confidence.
91	R	Okay, so, um, what are some Education 4.0 tools? Education 4.0, meaning, currently, we are in Education 4.0. Learning can be done anytime, anywhere, it can be online. Aa you can learn, uh, self-paced, sometimes there's no teacher, but you can learn at, on your own, you can learn from social media, from Google Meet, Zoom, uh, all of these technology that we are using, to learn, all of this, uh, Education 4.0 tools. So, what are some Education 4.0

		tools that you are using for graduate employability?
92	I	Actually, uh, I'm not so well, uh, I don't know so much about, uh, Education 4.0. It is related to the, such as our, the technology that we use in the education nowadays right.
93	R	Yes.
94	I	But, what can I say is, uh, the things that I use aa.. quite a lot in my job employment is, like AI, artificial intelligence, um, and the, uh, usage of like we are using right now, uh, Google Meet, uh, Teams, and what else, um..... Most of the time, I think, AI. Because, like, ChatGPT..
95	R	So, uh, for.. Google Meet and Teams, do you use it for learning? For professional development, or what?
96	I	Most of the time, I use, for professional, for, meeting with the clients, colleague, um, and it becomes, nowadays very important tool.
97	R	Okay. What about before you were hired? Do you use, like, LinkedIn.. or JobStreet to find jobs?
98	I	Yeah. I use both every time to find jobs.
99	R	So, what do you think would be the advantage of using these tools? For example, using JobStreet, how do you find it helpful for your, employability?
100	I	Because company nowadays, they want to, they want to, save some costs, because if they, most of the company, if they want to hire new staff, they will, use sort of agent right, we call as hiring company. They means they will rely on, pay the hiring company, and the hiring company, they will find the right workers for them. [Hmm.] But, some of the companies also, they plan to save some, amount of cost, so they just go to the JobStreet, and LinkedIn, and then, uh, read the details, and then, the person from the, LinkedIn and JobStreet, and then, uh, they will call for interview session. Just by looking at the details at this, LinkedIn. Honestly speaking, even though, currently, I work as a taxman, but still, I, I managed to receive a few invitation. From a few engineering companies asked me to come for interview. But I don't plan to change my career.
101	R	Uh, so just now, you said about saving costs, this one is the advantage for companies, right? [Hm] Uh, what about the advantage to you as a graduate? How does it help you to.. to find jobs?
102	I	Aa.. by using this kind of tools, like, LinkedIn.. JobStreet, so I don't need to, uh, travel for the.. still, I need to go to the, put some effort to put the resume, go to the job fair, right? Uh, this kind of, LinkedIn, also helped me so much, because, we know that the companies, uh, some of companies, uh, finding new staff by looking at this LinkedIn, and JobStreet. So that means, we just, our duty is just to ensure that the LinkedIn and JobStreet updated. Sitting at the computer, in front of the computer, we just keep updating these two things. So it will be easier.
103	R	So do you suggest, uh, updating, uh, LinkedIn profile to be done by graduates from their first year?
104	I	Yeah, correct. By hook or by crook.. even though how busy they are, they must find some time to make sure JobStreet, LinkedIn, uh, keep updated every time.
105	R	Even for the fresh graduates?
106	I	Yes, correct.
107	R	So, uh, if they don't have work experience, what should they put?
108	I	They can put, their successful story during university. We call as punchline, because in comedy, we have punchline also, in resume also we have punchline. It's different if you put inside the resume inside the JobStreet, uh, "My duty is.. to learn something or to prepare.." that's a normal sentence, right? But, punchline in the resume, like, uh, "I managed to lead the team to win the blah, blah, blah right there". [Hmm.] A lot of achievement, so once the company, they look into your profile, and then they say, "Oh, it's very good." Uh, so it could become one of an advantage for you. Okay. .
109	R	So, you are saying, for graduates, they should update their LinkedIn profile, uh, put in successful stories during university, and then they need to list out their achievements
110	I	Correct.
111	R	Okay. What about, uh, the, the advantage for learning sustainability? How can you use tools like, uh, ChatGPT, Google Meet, Teams... How can you, as a graduate, use these to sustain learning?
112	I	Hmm.. because most of the time, uh, we, we will be assigned, any task from our company,

		right? [Uh-huh.] Our daily job, uh, we will face a lot of challenge that we need to complete mission of our tasks, assigned by the company. So, during that time, these kind of tools, we can utilize it to help us to meet the goal.
113	R	For example?
114	I	For example, right. Let's say, if we want, uh, we.. If we assigned to give a presentation about a subject, a topic, right. [Uh-huh.] And then we don't have much time to prepare for the text or the, the information of the topic, the subject. So, maybe we can use, uh, AI like ChatGPT, to describe the topic, the subject. And then it will.. shorten the time of the preparation. I'm not saying we can just exactly copy the text, but we can, at least we can use the text and study it, rather than preparing by ourselves, right. This is how Education 4.0 helps <i>lah</i> .
115	R	Okay. All right. Besides ChatGPT, what else do you to learn new things, to do your..
116	I	Google. So I just type on Google. And I think my, my current job, uh, doesn't need me to do a lot of presentation because, uh, because I just do the tax. So most of the time I deal with the tax, the computation, and sometimes I, search about accounting, on the internet, Google.
117	R	Um, okay. Um, so you said just now, in terms of, uh, the advantage would be, uh, let's say using JobStreet, it helps you to save costs, right. As long as you update your profile, then you will be, you will get more, what to say, uh, you will get more results when you search for jobs. And then for the company, it saves them costs because they don't need to hire, hiring agent. Um, what about the, this advantage of using the tools? Firstly, the disadvantage on employability.
118	I	Uh, uh, uh, disadvantages to the company or to the candidate?
119	R	You can share both.
120	I	To the candidate, I don't see any of disadvantage to the candidate because, because most of the time, these tools are really beneficial to me. But to the company, some of disadvantages that I, I mean, sometimes it can attract bad candidates.
121	R	What do you mean by that?
122	I	<i>Ya lah</i> . When the candidate write, they can write anything in the profile right, you won't know it's right or wrong or right. [Uh-huh.] So, the company there's a chance to attract bad candidates to the company, um, because, sometimes things that they write in the profile is wrong actually, right? They say that they can do this, but actually they cannot do this right? [Um] I think it I think it can affect communication also. Between graduate and the company. Like I said, because the best thing is.. is to talk face to face. Because when, uh, someone talking face to face, it can clarify what the person is like, at least by first impression, right? [Hmm.] While also maintaining clear communication with one another. Hmm.. But, by using these tools, uh, so the communication can be not so good <i>lah</i> . Because it's not face to face.
123	R	Okay. And what about in terms of, uh, learning sustainability? What will be the disadvantage of using ChatGPT, uh, Google.. Google Meet, Teams.. What will be the disadvantage of using these tools?
124	I	Uh, uh, some students or some persons, once they know that they can, uh, they can use, uh, they can, they can use this ChatGPT or AI. So, their mistake is they rely 100% on this. So, that means they don't want to put effort. [Hmm.] When some people now they just want, let's say if they use ChatGPT, they just straight away copy and paste. So, they don't even read the text. They just copy and paste. So, that will be very bad. So, it can lead to the, what we call as, um, serious problem among students.
125	R	Serious problem, meaning plagiarism?
126	I	Yeah, yeah, plagiarism. It's leading to plagiarism, uh, that's plagiarism because, the plagiarism, has started a long time ago, right? Once, AI or ChatGPT is implemented, so it can make the plagiarism become worse.
127	R	Hmm. Okay. Do you have anything more to add?
128	I	Hmm. I think that that's all.
129	R	Okay. Uh, when you were in university, were you taught how to document, skill sets, like creating a portfolio, so, were you taught how to do that?
130	I	Hmm. I don't think so, I think, no.
131	R	Hmm. So, um, uh, you know what's a portfolio, right? Portfolio is a collection of work samples, or a collection of evidence of skills that you have learned. [Hmm.] Even for new students, fresh graduates, they also can have portfolio, they can put their, like you said just

		now, they can put their success stories in there, they can put pictures.. and all that. So, you were not taught how to do portfolio?
132	I	I did not remember any of that.
133	R	Okay. Do you, do you think it's important for graduates? Do you think employers think this is important?
134	I	Yes, yes. I think maybe because of the course that I learned, because normally, Engineering, they, learning, about technical things. So, this portfolio, I don't think that we have any of that. Maybe it's not, it's not for every course. Maybe some, some courses they need portfolio.
135	R	Okay. So, uh, do you know about e-portfolio? E-portfolio is like a portfolio, but it's online. So, it's like, um, before, before you go for interview, you send your resume.. together with the e-portfolio link. And then, and then the company can look at your work samples.
136	I	That's good lah.
137	R	Uh, so do you think it's, do you think graduates should do this from the first year?
138	I	Yes. It will increase, increase the chances to be hired by the company.
139	R	So, LinkedIn is actually, uh, one of the platforms that you can put e-portfolio, actually. So, in your opinion, you think this should be done by graduates?
140	I	Yes, exactly. Because I think it will increase the chance that, right? Because like I said, the company will zoom into your profile. So, even, even when they filtering the profile of the candidates, they will still find the reason why, why they will call you for the interview right. So, if they, if there, if there are a lot of candidates, so of course, they will compare from this candidate to this candidate. And then by using this, e-portfolio, so it will increase more chance for you to differentiate yourself from others. It's like a short case, uh, you can showcase yourself to the company. So, they will call you for the interview session.
141	R	Okay. What about video resume? Video resume. Video resume is like a resume but in the form of video.
142	I	Yeah, I know. But, I never know people who use that. They use, like, physical resume or the, uh, printed resume. But, people nowadays use video resume?
143	R	Yeah. But, uh, I don't think it's, it's not.. taught to everyone. Some courses they have this, uh, for their assignments.
144	I	I think it depends on the job that you apply. Because, for government, if you use video resume, I don't think that you will be hired. [Chuckles] Uh, because most of the time, they use documented. Everything is document. Paper documents, right, so because they have a specific procedure. But it's different to the private company. Right. Let's say if you apply for Fashion Designer or if you apply for Promoter, if you apply for Announcer, right. So, video resume will be good for this position.
145	R	So you are saying it depends on the.. industry that they are going. [Yes] What about reflection of learning? Do you learn how to write reports, how to reflect on an event? Do you learn.. that writing reports?
146	I	Yes. Even now, things that I do every day is writing reports.
147	R	So how does learning this help you in employability? When you learn about writing reports, how does it help you in your job?
148	I	My current job also needs me to write a report every day. So the.. knowledge or the experience I manage to learn during my studies so I can use it again during my job.
149	R	What about your learning sustainability? Does doing reflection helps you to sustain your learning? To remember what you learned, to do self-study?
150	I	Yes
151	R	In what ways does it help you?
152	I	At least when I... When I receive a assignment from my superior, let's say I need to write something or a report or give a presentation. Write a report. So I already prepared with the knowledge that I obtained from my previous studies. So it will be not a sort of culture shock for me because I have done it before. So I just... we call it as warm-up, right. Maybe get.. additional information or knowledge and then just touch up the report. So it helped me a lot.
153	R	Okay. So coming back to the previous question about what have you learned in the industry currently? That you wish you have learned earlier? What is it? Something that you learned, not necessarily in the current industry, it could be from previous jobs, that you wish you learned earlier during university?
154	I	Previously when I studied Engineering, so I just looked into the syllabus and just looked into

		the books, right? Books, articles taught by the lecturer. But I don't see the... I don't get the... at least the brief... brief view of the real situation of the job. Means, maybe students that undergo studies in IIUM, rather than just go to the class every day. So they will be exposed early with the job outside. Because during my time, I don't think I have that kind of chance. So that's why when I jump into the job outside, so at that time, I just realized, "Okay, that's how the way we work", right? So if the students are exposed earlier to the job outside, during the- while they go to the class every day, at least they can prepare themselves, right? Not in a position of culture shock. When they jump into the job market someday.
155	R	Okay. So how do you suggest the students expose themselves with the real experience?
156	I	Maybe the management they can plan for the industry visit.
157	R	So you didn't have that?
158	I	No, no. During my time, I don't have that kind of visit. Maybe they can plan the industry visit, go to the factory, right? And they'll see the process, in my position, see the manufacturing process by the eye, rather than just look into the book, right. So they can see by themselves the real things in the factory. Maybe once a month or maybe once a year, depends.
159	R	So are you suggesting for the university to collaborate with the industry?
160	I	Yes, correct. I know, I aware that the university already implement what we call industrial training, right? The training, but normally industrial training, students will undergo this kind of training during the final year. So I don't think it's enough for them because during that time, they... normally prepare themselves to graduate, so they don't think much about the knowledge that they learned during the training. So maybe the university they can plan from the beginning, from the first or second year for the industrial visit. Hm hm.
161	R	Okay. We are actually at the end of our interview. So if you would like to add, I don't know, if you want to add a conclusion, do you have any conclusion that you would like to say? From your point of view as an alumni.
162	I	The short one, conclusion. I think what the university done so far is very good, exactly good, and it is above the expectation. I can say that I am graduated is a well-compete in the market. Most of the companies, they look IIUM graduates as one of the quality staff. That's what I learned during my job market. It's just.. maybe, like I said, now we are as alumni of the university, so we are ready to contribute to the university. So let's say if the university, they need us to share knowledge for the students. So we are always ready to give the knowledge to share the knowledge with students, and just call for us, and we are ready to contribute to the university.
163	R	Okay, so just now you said, I have produced high quality graduates, right? Are you saying this for all courses in IIUM, or just from your experience as engineering alumni?
164	I	I say for all courses. Even when I work as engineering also, there's a few workers also, a few staff, my collagues also, which come from IIUM, and I see the quality inside of them. That's why I said, well, the IIUM graduates is well-compete. Even.. I changed my career to tax also. There's a lot of IIUM students in my office work together with me. And also, I can say that they are such a good worker, such a good quality worker.
165	R	What would be the main quality that is similar among all of them that you say that as good workers?
166	I	They are well independent, good skill, maybe because of during our studies at IIUM, we are already exposed to that kind of skills. And even when we involved a lot with the foreign students, right? That means we already trained our communication with them. So that's why I think this kind of thing beneficial as we can use it during our job.
167	R	Okay. All right. Anything more to add? [That's all]. Okay, so that's all. We are at the end, so I would like to say thank you so much for willing to spend your time to be interviewed. You have shared quite eye-opening findings.. that hopefully will help with my research. So thank you so much Assalamualaikum.
168	I	Walaikumsalam. Thank you also to Pn. Sakinah.