

**CURRICULUM INTEGRATION IN HIGHER  
EDUCATION: TRANSCENDING DISCIPLINARY  
DIVIDES TO MEET MARKET DEMANDS**

**BY**

**SHAIMA BANU ILLAHIBACCUS-SONA**

**A thesis submitted in fulfilment of the requirement for the  
degree of Doctor of Philosophy in Education**

**Kulliyyah of Education  
International Islamic University Malaysia**

**AUGUST 2025**

## ABSTRACT

The unpreparedness of university graduates for the workforce remains a global concern for employers. The main reasons are (I) misalignments between university curricula and market demands, (II) a disconnect between theory and practice, (III) inadequate twenty-first-century skills, (IV) rapid technological changes and (V) weak partnerships between universities and industries. Although these problems are widely recognised in educational research and policy, practical solutions are yet to be fully implemented. This dissertation sought to evaluate the impact of Curriculum Integration (CI) on bridging the gap between academic knowledge and what the market needs. CI, a teaching approach that combines disciplines to encourage collaboration and communication across related fields, was analysed to understand its effectiveness in developing twenty-first-century skills, fostering better links between universities and industries and overcoming the challenges of implementing CI in higher education (HE). Guided by the IIT's (1989) model of CI, constructivist learning theories (Piaget, 1960; Vygotsky, 1978) and Bloom's (1956) taxonomy, this study utilizes the PDSA (Deming, 1993) to integrate academic and practical knowledge at two universities: 'The University of Macbeth' (UOM) in Malaysia and 'The University of Hamlet' (UOH) in Mauritius. These universities were chosen based on high graduate unemployment rates and employers' complaints about graduates' unpreparedness for work. This 14-week qualitative study employed an interpretive approach and a comparative multiple-case study design. The purposive sample included four lecturers, four professionals, and twenty third-year students from specific courses at both universities. Data was gathered from lesson plan reviews, interviews and focus group discussions using Creswell's (2013) qualitative analysis methods. The findings revealed different pedagogical approaches among lecturers: interdisciplinary (A), multidisciplinary (B, D), and a combination of methods by lecturer C. Effective CI balanced theory and practice through activities that reflected real-world jobs, improving essential twenty-first-century skills like critical thinking, problem-solving, creativity and collaboration. Professionals confirmed the students' job readiness and practical skills. However, some challenges were identified. Lecturer B's students struggled to connect interdisciplinary perspectives because they were taught separately, emphasising the need for better lesson planning. Lecturer A and C highlighted the importance of institutional support, while lecturer B did not see preparing students for the workforce as part of her role. There was also a lack of alignment between assessments and CI practices. Overall, this study emphasises the importance of careful planning for integrated lessons that align with educational standards, collaboration across disciplines, ongoing faculty training, adequate resource allocation and effective communication between universities and industries.

Keywords: Curriculum Integration, Higher Education, Market Demands.

## ملخص البحث

لا يزال عدم استعداد خريجي الجامعات لسوق العمل يشكل مصدر قلق عالمي لأصحاب العمل. وتكمن الأسباب الرئيسية لذلك في: ١. عدم التوافق بين المناهج الجامعية ومتطلبات السوق. ٢. الانفصال بين النظرية والتطبيق. ٣. عدم كفاية مهارات القرن الحادي والعشرين. ٤. التغيرات التكنولوجية السريعة. ٥. ضعف الشراكات بين الجامعات وقطاعات العمل المختلفة. وعلى الرغم من الاعتراف بهذه المشاكل على نطاق واسع في البحوث والسياسات التربوية، إلا أن الحلول العملية لم تُنفذ بالكامل بعد. تسعى هذه الأطروحة إلى تقييم تأثير "تكامل المناهج"، على سد الفجوة بين المعرفة الأكاديمية واحتياجات السوق. تم تحليل مفهوم "تكامل المناهج"، وهو نهج تعليمي يجمع بين التخصصات لتشجيع التعاون والتواصل عبر المجالات ذات الصلة، لفهم فعاليته في تطوير مهارات القرن الحادي والعشرين، وتعزيز الروابط بين الجامعات ومجالات العمل المختلفة، والتغلب على تحديات تنفيذه في مؤسسات التعليم العالي. تم الاسترشاد بنموذج المعهد الدولي للفكر الإسلامي (١٩٨٩) لدمج المناهج، ونظريات التعلم البنائية (بياجيه، ١٩٦٠؛ فيجوتسكي، ١٩٧٨)، وتصنيف بلوم (١٩٥٦). كما استخدمت هذه الدراسة نموذج "PDSA" أو ما يسمى بنموذج "خطط-نفذ-ادرس-طبق" (لديمنغ، ١٩٩٣)، وذلك لدمج المعرفة الأكاديمية والعملية في جامعتين، هما: "جامعة ماكبث" في ماليزيا، و"جامعة هاملت" في موريشيوس. تم اختيار هاتين الجامعتين بناءً على ارتفاع معدلات البطالة بين الخريجين، وشكاوى أصحاب العمل بشأن عدم استعداد الخريجين للعمل. استخدمت هذه الدراسة النوعية التي استمرت (١٤) أسبوعاً منهجاً تفسيرياً، بتصميم "دراسة حالة" متعددة المقارنات. شملت العينة (٤) محاضرين، و(٤) متخصصين في مجالات مختلفة، و(٢٠) طالباً من طلاب السنة الثالثة في برامج محددة في كلتا الجامعتين. تم جمع البيانات من مراجعات خطط الدروس، والمقابلات، ومناقشات مجموعات التركيز، باستخدام أساليب التحليل النوعي لكريسونيل (٢٠١٣). وقد كشفت النتائج عن وجود مناهج تربوية مختلفة بين المحاضرين: فهناك محاضرون يتبنون أسلوب تعدد التخصصات (A)، وآخرون يتبنون أسلوب التداخل بين التخصصات (B، D)، وآخرون يتبنون أسلوب

المزج بين التخصصات (D). وقد حقق دمج المناهج الفعّال توازناً بين النظرية والتطبيق من خلال الأنشطة التي تعكس وظائف العالم الحقيقي، مما أدى إلى تحسين مهارات القرن الحادي والعشرين الأساسية مثل التفكير النقدي، وحل المشكلات، والإبداع، والتعاون. أكد المتخصصون استعداد الطلاب للعمل وامتلاكهم للمهارات العملية. ومع ذلك، تم رصد بعض التحديات؛ حيث واجه طلاب فئة المحاضرين (B) صعوبة في ربط وجهات النظر متعددة التخصصات لأنهم تعلموا بشكل منفصل، مما يبرز الحاجة إلى تخطيط دروس أفضل. بينما أبرز المحاضران من الفئتين (A) و(C) أهمية الدعم المؤسسي، في حين لم ير المحاضرون من الفئة (B) أن إعداد الطلاب لسوق العمل يُعد جزءاً من الدور الذي يقومون به بوصفهم محاضرين. كان هناك أيضاً نقص في التوافق بين التقييمات وممارسات دمج المناهج. بشكل عام، تؤكد هذه الدراسة على أهمية التخطيط الدقيق للدروس المتكاملة التي تتماشى مع المعايير التعليمية، والتعاون عبر التخصصات، والتدريب المستمر لأعضاء هيئة التدريس، وتخصيص الموارد الكافية، والتواصل الفعّال بين الجامعات ومجالات العمل المختلفة.

## **APPROVAL PAGE**

The thesis of Shaima Banu Illahibaccus-Sona has been approved by the following:

---

Mohamad Ridhuan Abdullah  
Supervisor

---

Suhailah Hussien  
Chairman

---

Azam Othman  
Internal Examiner

---

Yusef Waghid  
External Examiner

---

Mohd. Said Nurumal  
Chairperson

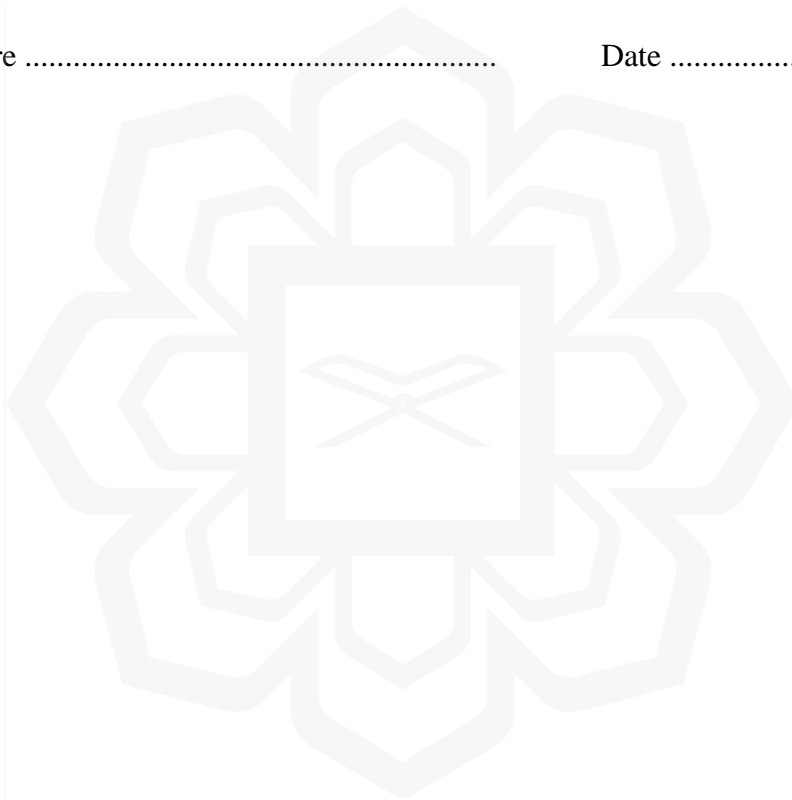
## DECLARATION

I hereby declare that this thesis is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

Shaima Banu Illahibaccus-Sona

Signature .....

Date .....



**INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA**

**DECLARATION OF COPYRIGHT AND AFFIRMATION OF  
FAIR USE OF UNPUBLISHED RESEARCH**

**CURRICULUM INTEGRATION IN HIGHER EDUCATION:  
TRANSCENDING DISCIPLINARY DIVIDES TO MEET MARKET  
DEMANDS**

I declare that the copyright holders of this thesis are jointly owned by the student and IIUM.

Copyright © 2025 Shaima Banu Illahibaccus-Sona and International Islamic University Malaysia. All rights reserved.

No part of this unpublished research may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without prior written permission of the copyright holder except as provided below

1. Any material contained in or derived from this unpublished research may only be used by others in their writing with due acknowledgement.
2. IIUM or its library will have the right to make and transmit copies (print or electronic) for institutional and academic purposes.
3. The IIUM library will have the right to make, store in a retrieved system and supply copies of this unpublished research if requested by other universities and research libraries.

By signing this form, I acknowledged that I have read and understand the IIUM Intellectual Property Right and Commercialization policy.

Affirmed by Shaima Banu Illahibaccus-Sona

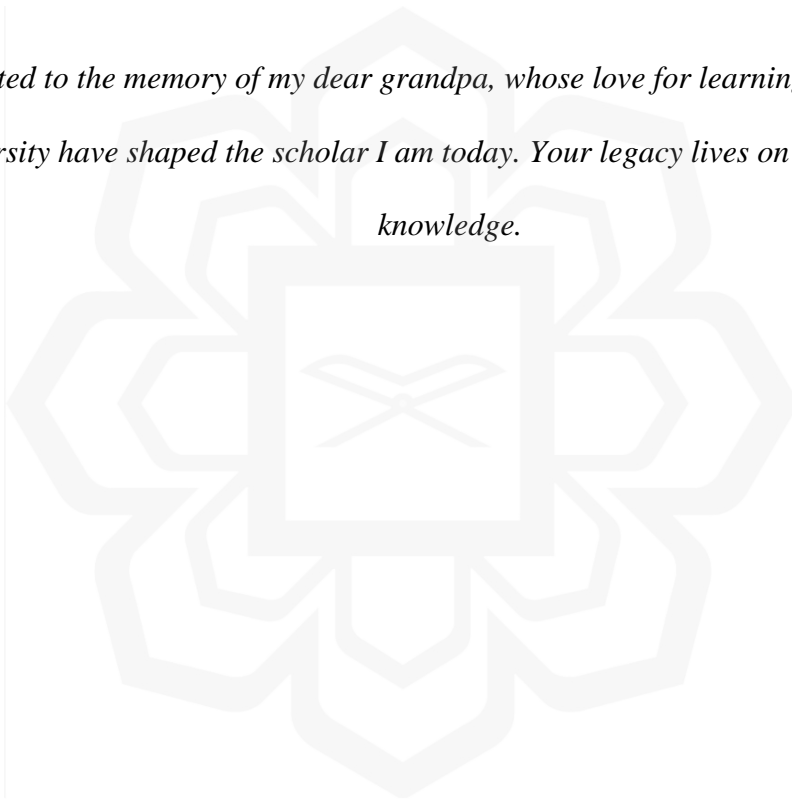
.....

Signature

.....

Date

*Dedicated to the memory of my dear grandpa, whose love for learning and resilience in adversity have shaped the scholar I am today. Your legacy lives on in my pursuit of knowledge.*



## ACKNOWLEDGEMENTS

As I stand at the threshold of concluding this academic journey which has been a transformative experience, I am filled with gratitude to each who contributed to this endeavour in myriad ways.

First and Foremost, embarking on this scholarly journey was made possible by the generous support of the International Islamic Institute of Thought, USA (IIIT) and the Human Welfare League, Mauritius, in the form of a PhD scholarship which empowered me to immerse myself in research and other scholarly activities fully. I am immensely grateful to Mr. Anwar Cara, the Chairman of the Human Welfare League, Mauritius who offered me the support and encouragement I needed. Mr. Anwar, I am appreciative of your help.

Reaching this junction of academic achievement is realised by the exceptional guidance, invaluable support, and mentorship of my main supervisor, DR. Mohamad Ridhuan Abdullah whose unwavering belief in my abilities has been instrumental in shaping this dissertation alongside my scholarly development. DR. Ridhuan, I am profoundly indebted to you for always being there, patient, kind, and understanding, and for giving me academic freedom and an enjoyable PhD journey. Every PhD student deserves a mentor like you.

My heartfelt gratitude also goes to the research subjects of this study. Without their willingness to engage with the research process for a semester-long, particularly the academics who had to revise their existing module curriculum to transcend disciplinary divides and face numerous hurdles along the way, advancing knowledge on curriculum integration in higher education would have been unlikely. To the academics, I present to you my sincerest thanks for not leaving me stranded mid-way. My immense gratitude is equally extended to the students and professionals for their contributions which have been central to the development of this thesis.

Acknowledging the realization of this academic journey is incomplete without the recognition of my family who has been my round-the-clock moral and emotional support. To my dearest mom and dad, my pillars of strength, I owe you both a debt of gratitude that words cannot fully delineate. Mom, immense thanks for instilling in me the values of perseverance and determination. Dad, your staunch support has been the bedrock of this journey. I love you both! To my two sisters, Nadjmah and Sharmeen, thank you for being my biggest cheerleaders and sustaining me through the lows of this doctoral journey. Heartfelt thanks to my brother-in-law, Hisham, for giving me access to high-quality research journals, and my darling nephew Haadi and my precious niece, Jana for their unconditional love. Even though we are all continents away from home, we are connected by heart.

As importantly, I humbly wish to acknowledge the grace and mercy of my dearest God, whose divine love and guidance have been my steadfast companion in my PhD journey. Dear Allah, I now comprehend the wisdom of You sending me to Malaysia, a country which wasn't on my radar for my PhD. Thank you for superseding my plans with yours. Amidst unfamiliar surroundings, You've provided me with spiritual upliftment; this is more than I could ask for.



## TABLE OF CONTENTS

Abstract .....	ii
Abstract in Arabic .....	iii
Approval Page.....	v
Declaration .....	vi
Copyright Page.....	vii
Dedication .....	vii
Acknowledgements .....	ix
List of Tables .....	xiii
List of Illustrations .....	xv
List of Charts.....	xvi
List of Abbreviations .....	xvii
<b>CHAPTER ONE: THE GENERAL PROLOGUE.....</b>	<b>1</b>
1.1 Introduction.....	1
1.2 Background of the Study .....	3
1.3 Problem Statement.....	6
1.4 Rationale .....	12
1.5 Research Aim and Objectives.....	13
1.6 Research Questions.....	13
1.7 Research Scope .....	14
1.8 The Study's Setting .....	15
1.8.1 Existing Picture of Graduates' Employability in Mauritius.....	16
1.8.2 Existing Picture of Graduates' Employability in Malaysia.....	17
1.9 Significance of Research .....	18
1.10 Operational Definitions of Terms .....	20
1.11 Chapter Summary .....	21
1.12 Thesis Structure .....	21
<b>CHAPTER TWO: PROLOGUE TO THE TALE.....</b>	<b>22</b>
2.1 Literature Review .....	22
2.2 Curriculum Integration: Definition and Elaboration .....	22
2.3 CI of Academic and Applied Knowledge in HE .....	24
2.4 Nature, Implementation, and Issues of CI in Malaysia and in Mauritius .....	29
2.5 Previous Studies .....	31
2.6 Conceptual Framework.....	35
2.6.1 International Institute of Islamic Thought's Five Steps of CI .....	35
2.6.2 Constructivism Theory of Learning .....	37
2.6.2.1 Piaget's Cognitive Constructivism .....	38
2.6.2.2 Social Constructivism.....	43
2.6.3 Bloom's Taxonomy Theory of Learning .....	48
2.7 Pictorial Representation of the Literature Review .....	54
2.7.1 Pictorial Illustration of the Connectivity of Sections 2:1, 2:2, 2:3 and 2:4 .....	55
2.7.2 Research Framework and Methodology .....	56

<b>CHAPTER THREE: THE TALE: PUTTING INTO PLAY.....</b>	<b>57</b>
3.1 Methodology.....	57
3.2 Research Paradigm and Rationale .....	57
3.3 Research Design: A Comparative Multiple Case Study.....	58
3.4 Data Collection Instruments .....	62
3.4.1 Lesson Plans Documentation .....	63
3.4.2 Semi-structured Interviews .....	64
3.4.3 Focus Group Discussion (FGD).....	66
3.5 Research Sites.....	67
3.6 Participant Selection .....	68
3.7 Qualitative Data Analysis .....	69
3.8 Ethical Considerations .....	74
3.9 Trustworthiness of the Study.....	78
3.10 Chapter Summary .....	85
<b>CHAPTER FOUR: THE TALE.....</b>	<b>86</b>
4.1 Findings and Discussions .....	86
4.2 The University of Macbeth (UOM).....	87
4.2.1 The Effectiveness of CI in Balancing Knowledge and Doing .....	87
4.2.2 University Lecturers’ Experiences with CI.....	113
4.2.3 Students’ Experiences with CI.....	117
4.3 The University of Hamlet (UOH).....	120
4.3.1 The Effectiveness of CI in Balancing Knowledge and Doing .....	120
4.3.2 University Lecturers’ Experiences with CI.....	139
4.3.3 Students’ Experiences with CI.....	142
<b>CHAPTER FIVE: EPILOGUE .....</b>	<b>147</b>
5.1 Conclusion .....	147
5.2 Summary of Findings .....	147
5.3 Contributions of this Study .....	155
5.4 Limitations of the Study .....	157
5.5 Implications for Practice.....	157
5.6 Implications for Future Research.....	159
<b>REFERENCES.....</b>	<b>161</b>
<b>APPENDIX A: INFORMED CONSENT FORM FOR: THIRD YEAR UNDERGRADUATES IN EDUCATION .....</b>	<b>180</b>
<b>APPENDIX B: INFORMED CONSENT FORM FOR: UNIVERSITY CHANCELLOR.....</b>	<b>183</b>
<b>APPENDIX C: INFORMED CONSENT FORM FOR UNIVERSITY LECTURERS IN EDUCATION .....</b>	<b>186</b>
<b>APPENDIX D: INFORMED CONSENT FORM FOR: PROFESSIONALS IN EDUCATION .....</b>	<b>189</b>
<b>APPENDIX E: LEAFLET: INTRODUCING CI.....</b>	<b>192</b>
<b>APPENDIX F: FOCUS GROUP DISCUSSION.....</b>	<b>193</b>
<b>APPENDIX G: ACADEMICS’ INTERVIEW QUESTIONS .....</b>	<b>194</b>
<b>APPENDIX H: INTERVIEW WITH PROFESSIONAL(S) .....</b>	<b>195</b>
<b>APPENDIX I: EXCEPT OF INTER-RATER FORM.....</b>	<b>196</b>

## LIST OF TABLES

<u>Table No.</u>		<u>Page No.</u>
2.1	Piaget's (1960) four stages of cognitive development	38
3.1	Transcription Template for the semi-structured interviews and FGDs	71
3.2	Notation Conversion employed in this study	71
3.3	Points to be considered prior to coding	72
3.4	Coding Template	73
3.5	Theme generated template	73
3.6	Raters' forms	80
3.7	Trail of the Study	84
4.1	Instructional Design and Multimedia	88
4.2	Historical and Philosophical Foundations of Malaysian Education	89
4.3	Balancing theoretical knowledge with application in lecturer's A class	98
4.4	Balancing theoretical knowledge with application in lecturer's B class	99
4.5	Introduction to Creative Writing Using the Interdisciplinary Approach	121
4.6	Introduction to Creative Writing using the Transdisciplinary Approach	122
4.7	Understanding Drama	123
4.8	Balancing theoretical knowledge with application in lecturer's C class	129
4.9	Balancing theoretical knowledge with application in Lecturer D's Class	130
5.1	The study's achieved objectives	153
5.2	Lecturers' standpoints	153

5.3	Professionals' Standpoints	154
5.4	The challenges encountered by lecturers	154
5.5	Unexpected Findings	154

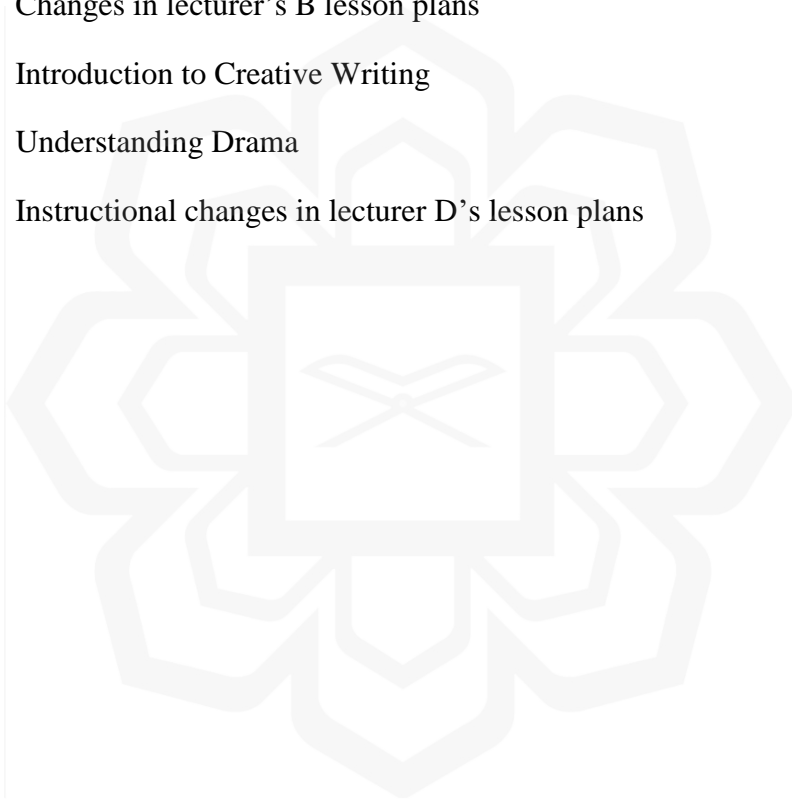


## LIST OF ILLUSTRATIONS

<u>Illustration No.</u>		<u>Page No.</u>
2.1	The PDSA Model (Deming, 1993, pp. 35)	25
2.2	Chains of PDSA models	28
2.3	Bloom's Taxonomy (1956)	50
2.4	The revised version of Blooms' Taxonomy (Krathwohl, 2002)	51
3.1	Adopted research design	60
3.2	PDSA cycle	61
3.3	Creswell's (2013) data analysis technique	70
3.4	Ethical protocols observed at each stage	78

## LIST OF CHARTS

<u>Chart No.</u>		<u>Page No.</u>
2.1	PDSA in practice	27
4.1	Instructional Design and Multimedia	90
4.2	Historical and Philosophical Foundation of Malaysian Education	91
4.3	Changes in lecturer's A lesson plans	96
4.4	Changes in lecturer's B lesson plans	97
4.5	Introduction to Creative Writing	124
4.6	Understanding Drama	125
4.7	Instructional changes in lecturer D's lesson plans	128



## LIST OF ABBREVIATIONS

CI	Curriculum Integration
FGD	Focus Group Discussion
HE	Higher Education
UOH	University of Hamlet
UOM	University of Macbeth



# CHAPTER ONE

## THE GENERAL PROLOGUE

### 1.1 INTRODUCTION

Many scholars agree that the fields of education, technology, artificial intelligence, economy, and environment are experiencing rapid and significant changes in the twenty-first century (Voogt and Roblin, 2012; Benade, 2017; Ananiadou and Downes, 2017). The empirical studies by Anderson (2008), Ramley (2014b) and Benade (2017) showed that rapid changes in a fast-evolving environment have made traditional knowledge obsolete as a universal standard of truth. They further emphasized that knowledge is a process and rejected the idea that it exists independently of individuals. This fervent emphasis on relative knowledge in the twenty-first century implicates tertiary learning institutions to redefine and reinvent their pedagogy in the face of societal and market's swift evolutions and demands. In support, Abdullah, Ibrahim, Aida, Zuraini and Muhammet (2017) and Nagewkoondrua and Yuenyong (2018) study highlighted that knowledge's value in the existing century is dignified based on its usefulness, mobilisation, and professional satisfaction. Their research shows that memorizing and compartmentalising knowledge is outdated. Knowledge is constantly evolving and real-world problems are increasingly unprecedented ambiguous and interconnected. Such issues span multiple disciplines and cannot be understood in isolation. Are the scholars mentioned above arguing that traditional subject-based curriculum failed to keep up with the swift pace of knowledge evolution and for the adoption of an integrated curriculum wherein knowledge is taught without disciplinary boundaries to meet the twenty-first society's needs? Their affirmations are corroborated by the presently global educational trend that education needs to serve an increasingly knowledgeable world, hence positioning tertiary learning institutions in a marketplace shift where their quality and relevance must be invariably proven to the existing society (UNESCO, 2023; OECD, 2018).

An analysis of the above-referred scholars' statement underpins knowledge as a commodity and tertiary learning institutions as a saleable industry having the responsibility of producing graduates with preponderant twenty-first-century market-oriented values, that is, the necessary knowledge, skills, and ethical control to successfully function in the global economy. As highlighted by Kezar (2004), Lambert (2014), Selingo (2016), and the World Employment Forum (2022), the exigencies of the twenty-first-century market are notably critical thinking, problem-solving, decision-making, digital, assertiveness, interpersonal communication, collaboration and willingness to upgrade one's existing professional competencies and dispositions. These demands or what can be termed employability skills, as pointed out by Lambert (2014), promote personal emancipation, democratic participation, and active citizenship. A parallelism is observed between this in-demand expertise by the market and what the P21 Framework (2011) and OECD Future of Education and Skills 2030 (2018) termed twenty-first-century skills. According to the aforementioned experts, these skills are crucial for teaching and learning as they help individuals address all types of challenges in their entireties. Historically, educational policies have focused on three pivotal interrogations: 'Who learns?', 'learns what?', and 'With what effect?' (Bennett and Howlett, 1992). Nonetheless, despite evidence indicating that subject based-curriculum focuses on the teaching of academic disciplines in silos without connecting them to reality and lacks relevance, coherence and engagement as well as fails to develop essential twenty-first-century skills in students (Dubin 2016; Cumming 1994a) it is still predominantly in use in numerous global universities (Spence 2018; Lopez-Velanquez 2019). In his systematic analysis of curriculum types, Cumming (1994a) labelled the traditional pedagogical practices of subject-based curriculum as dull, artificial and alienating. Research conducted by Carnevale, Smith, Melton and Price (2015) showcased that more than half of employees of ninety-seven created jobs since 2010 reported having graduate employees who are unprepared in content and skills to function in their assigned positions effectively. Likewise, a survey carried out by Timely Care (2023), a leading virtual and well-being organisation for students, disclosed that 88% of graduates are willing to join the workforce. Still, half of employers surveyed by Resume Builder (2023), expressed their unwillingness to hire fresh graduates due to them lacking the required competence and dispositions and difficulties in finding skilled professionals.

Is the disconnection between subject-based curriculum policies, market demands and universities the result of the dearth of skilled graduates with vocational experiences? Misalignments among the subject-based curriculum policies, market demands and universities' teaching and learning processes are implicated to be resolved. The following presents the background of the study.

## **1.2 BACKGROUND OF THE STUDY**

Since the shortfall of graduates possessing an integrated, unified view of learning, and twenty-first-century skills dominates the existing higher educational landscape (OECD, 2022; UNESCO, 2022; Spence, 2019), this study aims to assess the effectiveness of CI in HE to prepare university students for employability. There is a growing body of recent literature (Hamilton, McKechnie, Edgerton and Wilson, 2020; ACARA, 2012), and key international educational policies covering over a hundred nations (OECD, 2018; UNESCO, 2022), that argue for education systems to comprise three distinct features notably (I) real-world coaching, (II) authentic links across disciplines, and (III) content negotiations among students to shape work ready, holistic graduates. These three features define CI, which generally taps into the gingerly process of interlinking originally unconnected segments and structures of knowledge to establish a coherently rational comprehension within an individual's memory (Clark and Linn, 2013). Additionally, as mentioned by Drakes and Burns (2004), and Jacoby (2015), CI promotes praxis knowledge, that is, through meaningful, authentic and relevant activities, it allows students to establish critical connections to theoretical knowledge from various disciplines and put them into practice. Students learn through practical processes, consequences and outcomes. Therefore, it can be stated that by balancing theoretical knowledge with applied knowledge, CI, through its practical and experiential aspects, allows students to experience learning as a meaningful whole, deepens and broadens their comprehension of the world and their place in it and develops their twenty-first-century skills including reflection. Labelled as brain compatible, CI is evidenced by Jensen's (1996) and Caine and Caine's (1997) studies that the more connections the brain makes with theoretical knowledge in real-life, immersive learning, the more it

engages in higher-order thinking instead of fragmented learning which suppresses the joy of learning. Similarly, Hirst (1974), argued that a subject-based curriculum restrains students' thinking because its teaching and learning processes are outlandish and alien as compared to real-life concerns and experiences. The OECD's (2023) 'Higher Education Policy' alongside different scholars notably Beane and Brodhagen (1996), Wilson (2020), Alsop and Hoeg (2020), Dillon and Avramidou (2020), and Tarek and Sicklinger (2022), classified CI as a curriculum offering a world-class education because of its inherent value of arranging knowledge as connected, symphonized, sustainable, and harmonized which integrate students into and part of all local and global circumstances. These features of CI resonate with Freire's (1973) concept of transformative education which juxtaposes with traditional, passive learning within subject boundaries.

Due to its features mentioned above and the high plaudits it received upon its introduction in the 1920s by the Progressive Political Movement in the United States to address the failure of subject-based curriculum in meeting socioeconomic demands (Beane, 1991), CI is being breathed new life in the existing time to make universities which are currently tagged as 'boring', 'irrelevant' (OECD, 2022), and 'traditional' (UNESCO, 2022), function through non-traditional modalities that is being innovative, inclusive, democratic, participatory, and in aliet gnment with global educational policies and market demands (UNESCO, 2023; OECD, 2023). Is CI, being an old concept, capable of preparing twenty-first-century university students for work? As depicted in the literature, CI has not only helped instructors in the 1920s who were tussled with linking traditional subject-centred curriculum to reality, but it was also successful in producing citizens with the ability to engage in reflective thinking, make informed, logical decisions, and be responsible, objective, and respectful while working collaboratively with their counterparts. Isn't the twenty-first-century society and global economy seeking the above-mentioned characteristics in its employees? Ironically, CI was phased out of the educational landscape two centuries post its advent because its developed traits in individuals were unbidden by succeeding political regimes (Dowden, 2007). Remarkably, its quirks notably personalized, authentic, collaborative, experiential, and real-world connections are presently the vital concepts pervading global HE policies, namely 'A New Road Map

for Higher Education' (UNESCO, 2022), 'Higher Education Policy' (OECD, 2023), and 'Transforming Education' (UN, 2023). Shifts towards an integrated, comprehensive curriculum and making curriculum and pedagogy relevant for today and tomorrow are the central discussion aspects in the above three latest HE policy reforms. Nevertheless, despite the above-stated global HE policies and a considerable amount of research implicated the re-introduction of CI in tertiary education in existing time (Wilson, 2020; Alsop and Hoeg, 2020; Dillon and Avramidou, 2020; Nadarajah, 2021; Tarek and Sicklinger, 2022), to the researcher's knowledge, none has put it into practice to evaluate its capabilities in balancing theoretical knowledge with applied knowledge to equip students with the twenty-first-century skills, individualistic and careerist aspirations which this study aims to address.

CI has lately sparked an increased interest in international educational discourses (McPhail, 2019). Cognizance of the superfluous closed subject borders which hinder students' holistic development and their twenty-first-century skills and the necessity of establishing a coherent knowledge curriculum which permits crossing subject boundaries to teach transdisciplinary knowledge, competencies, and twenty-first-century skills to solve global grand, complex socio-economic challenges has received widespread international attention (Drake, 2020). However, studies on CI in the literature appear to adopt a different perspective from the above. For instance, in their empirical studies on CI, Beane (1997), Vars (2000b), Erikson (2002), Drake (2007), Drake and Reid (2007), Upitis (2011), and Miki Niemela (2021), underpinned the effectiveness of CI in promoting coherence in learning, particularly how applied skills in learning processes improve both content knowledge and skills in the learning areas within which processes were integrated. These studies also highlighted that CI promoted in-depth learning instead of breadth learning, individualized experiential learning opportunities, motivational enhancements, collaboration, cognitive development, and outstanding educational scores. Additionally, these studies elucidated how CI connected with the students' needs, interests, learning styles, and real-life experiences to dwindle the latter's alienation, hence, helping them to make sense of life experiences. Undoubtedly, the findings of these studies act as a rationale for the reintroduction of CI in education as they align with the global description of how teaching and learning should be (OECD, 2018; UNESCO, 2023). Noteworthy

though, these studies focused primarily on the effect of CI in enhancing standardized test scores and twenty-first-century skills of elementary and high school students with no explicit delineation of the high level of inquiry and reflection on constructive dialogues with the subjects regarding the impact of CI on the application of textbook knowledge which the studies drew from, in reality. These studies explored chiefly the processes of CI using the quantitative methodological approach which according to Denzin and Lincoln (2005), might fail to capture the underlying meanings and perceptions of participants, strenuous to probe into CI processes through quantitative methods and critically explore the dynamics and convoluted contexts, forms, or variations of CI. Acknowledging the gaps in existing research on CI in HE to meet market demands, this study uses qualitative methods to examine how HE curriculum is integrated from the perceptions of lecturers, undergraduates and professionals. It also assesses whether undergraduates, through integrated curriculum, develop the in-demand market skills to effectively tackle complex challenges similar to those encountered in professional settings. The evaluations are performed by professionals from the market. Compared to the above studies, this study employs a dissimilar approach and purpose towards CI which is to shape work-ready graduates. The gathered qualitative findings informs actions, generate theories, and eventually contribute to the restricted literature available on the heavily discussed topic in international HE discourses. The following presents the problem statement.

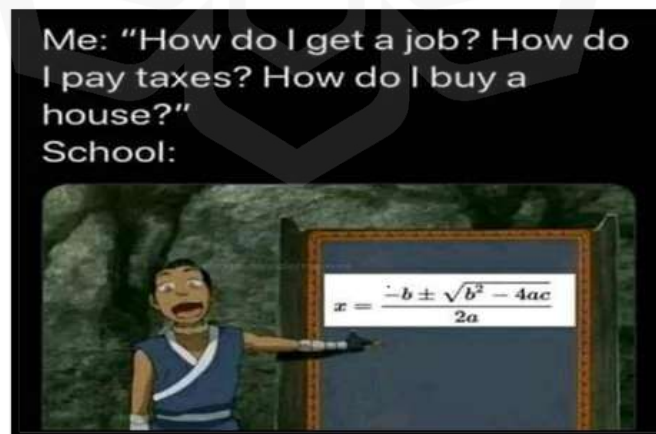
### **1.3 PROBLEM STATEMENT**

The twenty-first century's global written press notably 'The Guardian (January 2022), 'Financial Review', (February 2022), 'Metro 50' (August 2022), 'Canadian Broadcasting Cooperation (CBC, October 2021), 'Society for Human Resource Management' (SHRM, October 2019), in line with various research studies principally that of Cheang and Yamashita (2023), Heller (2021), Oraison et al. (2019), Orr et al. (2023), Spence (2018), Weingarten (2021), Lopez and Velazquez (2019), and official reports like the Postgraduate Readiness Report (2022), World Bank (2019), PWC (2018), and World Economic Forum (2016), vigorously challenged the competency of universities across nations in creating graduates for work readiness. Weingarten,

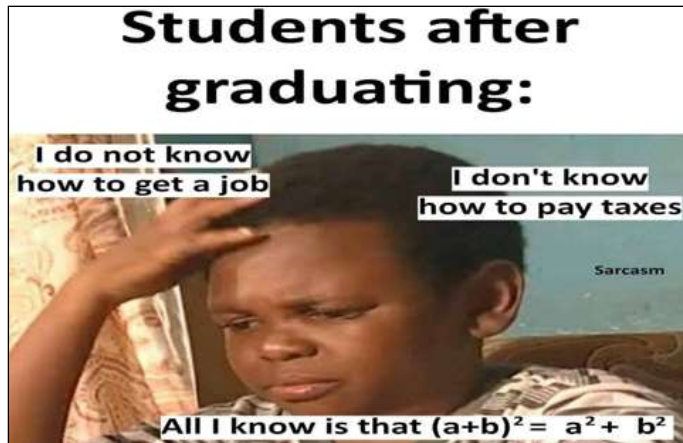
author of 'Nothing Less than Great: Reforming Canada's Universities' and former president and CEO of the HE Council of Ontario, asserted that one out of five learners graduated from Ontario universities with literacy and numeracy skill levels below the OECD standards. Adopting a critical stance, he deplored the increasing percentage of nearly 30% to 40% of university students showing no 'demonstrable change in critical thinking in the first two years of education' and acclaimed that the quality of university education given to learners is below basic expectations (CBC, 2021). His statements are supported by Rui Lui, a graduate of the University of Toronto in 2021, who admitted her uncertainties in pursuing her master's degree because:

'There's still a lot of economic anxiety and also existential dread, I think, for folks that are graduating in our generation. It's not the same economy that folks were entering even 20 to 30 years ago. I think there's a sense of needing more education to be competitive in this economy (CBC, 2021).

Notably, the above-quoted assertion challenges the relevance of universities in preparing graduates for the twenty-first-century job market. Likewise, memes on social media illustrating the inapplicability of learned content to reality gained popularity since January 2022:



(30k likes, 1.6k comments and 7.7k shares)



(71.1k likes, 3.1k comments and 9.3k shares)



(2K likes, 99 comments and 488 shares/posted on 15 October 2022)

On Twitter, since 2019:



A similar plight is observed in England, whereby the veracity of quality education provided by universities is highly questioned in the written media, namely 'Metro50' (August 2022). The news article presented five graduates from different universities in England, and each abhorrently asserted that they 'regretted going to university', tagging their university degree as 'a Mickey Mouse degree', 'a waste of money', 'a huge mistake', 'an expensive life building exercise' and 'a myth'. The poor quality of teaching and being unprepared for employment were the main reasons for their contempt. This article's findings were supported by another research study conducted by the British national daily tabloid newspaper, 'The Mirror', which surveyed 698 graduates and found that 65% reported regret for attending university because they did not have enriching teaching and learning experiences (Mirror, 2020). 'Prospect', another leading British newspaper, researched 7000 post-secondary students, out of which 45% claimed to be unprepared for work (Prospect Early Career Survey, 2021). Findings from the research mentioned above are corroborated by Spence's (2019) study, which equally highlights the unpreparedness of UK graduates for employment.

Moving to the Asian continent, particularly in Malaysia, the quick descent in the quality of university education provided to learners, particularly those enrolling in postgraduate courses in the field of social sciences and humanities, requires immediate introspection, as acclaimed by the Malaysian local newspaper, 'The Star' (April, 2022). According to Arshad Ayub, the first director of University Technology Mara, more than 2500 professors in Malaysian universities have not yet met the required threshold to be academics, a comment published in 'Malaysiakini' (January 2022), an online news portal. This comment ultimately raises concerns regarding the quality of teaching and learning provided in Malaysian universities and goes as far as questioning whether Malaysian HE has been mutilated, especially when Sharifah Munirah Attas, a forthright academic, affirmed the following:

'In Malaysia, we produce graduates by container loads, ...the more the merrier regardless of qualities' (Sharifah Munirah Alatas in Malaysiakini, 2022)

The above assertion starkly showcases that in Malaysia, the focus of HE is now on quantity rather than quality. Responding to the above quotation, Teh Yik Koon, a local academic, consented that ‘our higher education system is on a downward spiral’. The culture of mediocrity can therefore be said to have already insidiously squirmed in HE. The CEO of the ‘TalentCorp’ company, Shareen Shareeza Abdul Ghani, underlined the urgency of a systematic overhaul of Malaysian universities:

‘Our traditional teaching methods and educational syllabus must be realigned so that we can accelerate education reform towards building 21<sup>st</sup>-century skills’ (The EDGE Market, 2018).

In a similar vein, Prof Sohail Inayatullah, UNESCO chair in Future studies and an expert who scrutinised the Malaysian HE, declared that:

‘Teaching training should be adapted to prepare for a world after jobs’ (The EDGE Market, 2018).

The above two quotations underscore the existing obsolete HE system in Malaysia, which is unfitted for the present century, and this statement is endorsed by the Malaysian Education Blueprint for HE (2015-2025).

Heading to Africa, precisely to Mauritius, a small island nation located off the eastern African coast, is no exception to the enlarging skills gap between university graduates and employers’ requirements (Hardin-Ramanan, Gopee, Rowtho and Charoux 2020). According to the ‘University World News’ (2021) and Kisto (2015), HE institutions in Mauritius produced graduates who failed to be absorbed by the labour market, which preferred recruiting foreigners possessing the needed skills. In a survey conducted by the World Bank (2015) and supported by Business Magazine’s research (2016), 54% of employees reported the inability to hire Mauritians, condemning their lack of soft skills as the core reason. Responding to this, the Ministry of Labour Industrial Relations and Employment (2014) incriminated HE institutions for disregarding the teaching of industry-relevant knowledge and skills while the World Bank (2015), denounced the lack of communication between the universities and tertiary institutions with the job market and this ultimately resulted in

a misconfiguration between curriculum and the demands of employment. As showcased by Kisto's (2015) study, the skills imparted to students in Mauritius' universities are mismatched with the skills required by the Mauritian labour market. Consequently, the dearth of graduates with the demanded skills impinges on Mauritius' global economic performance (World Economic Forum, 2017).

As shown above, graduates' unpreparedness for work is recognised as an increasingly pressing, global socioeconomic problem and has stirred the attention of both researchers and the written and social press. Leaving the problem as it currently stands will further widen the gaps between traditional universities and the job market's demands, with graduates finding it arduous to secure jobs, and even if they do, they are likely to encounter challenges given that their university degree did not adequately prepare them to meet market demands. The world is already facing an increasingly skilled labour crunch, with employers finding it strenuous to recruit and fill vacant positions with competent professionals (Kaleijaye, 2023; Forbes, 2023). If it remains unsolved, in the long run, a prolonged skilled labour shortage shall worsen global economic growth. The lack of theoretical knowledge in the literature to solve this problem presents it as a problem that needs to be investigated. Consequently, this research aims to integrate the university curriculum to see if it prepares graduates for work. Besides adding new empirical knowledge to the field of HE, this study's findings shall provide the solution to universities across continents as to how to form work-ready graduates and close the gaps between them and their local/global market demands. Furthermore, this study shall prevent an insufficiency of skilled employees, hence, hampering adverse economic effects. Graduates, on the other hand, shall escape the frustration, anxiety, and depression of not finding it difficult to secure jobs and professionally evolve in it. The need to upskill or reskill potential employees will not be the cause for their non-employment. In brief, the study's findings will help the universities and the local/global economies to function smoothly. The following presents the rationale.

## 1.4 RATIONALE

As demonstrated by the above-stated empirical studies and media platforms, the looming strife between universities and employment rivets my interest in researching an appropriate university curriculum that closes the gaps between government educational policies, HE, and the job market. A consensus among recent scholars in literature is observed to identify CI as the solution to this gap (Lyall, Meagher, Gill and Kettle, 2015; Brooks, 2017), however, being a limited research area, an absence of its implementation in HE is underlined. Underpinning integrated learning in HE and managing the changes that it herds are likely to allow this study to make an original contribution to literature, particularly on the relationship between CI in HE and market demands.

My main reason for researching CI stems from my belief that education should provide students with a unified view of learning mirroring their interactive realities. According to my empirical observations, which are also sustained by research findings (Gardner, 2005; Roberts et al, 2014; Boyer, 2015), the growing nature of knowledge in existing time cannot be taught traditionally. If the current century is ceaselessly advocating for the creation of wholesome students (UNESCO, 2022; United Nations, 2022; OFSTED, 2020), then why is education transmitted to students in silos, especially when employers demand employees to address issues in their entities as real-life work challenges do not come in specific discipline's compartments? (Marcus, 2021; Collins, Rupanner and Scarborough, 2020; George, 1996). The unconcealed remark from the job market about university graduates' unpreparedness for work (World Employment Forum, 2022) questions the effectiveness of compartmentalised learning to help resolve both life and work challenges. A constructive reflection on the gaps between universities and market demands inspired me to glean knowledge from other disciplines in my teaching practice of a topic, and interestingly, interdisciplinary pedagogy promoted cognitive curiosity, autonomy, logical reasoning, and problem-solving skills among my students. This positive result propelled me to research this topic at the tertiary level to see if similar findings are spawned and whether the implications made by other researchers regarding CI and the job market is true. To cast off confirmation biases from the trial of CI in my teaching practice, any pre-

existing hypotheses and assumptions were challenged. The next section presents the research aim and objectives.

### **1.5 RESEARCH AIM AND OBJECTIVES**

This study aims to examine the effectiveness of CI in HE in balancing knowledge and doing to meet market demands. To attain the stated aim, the following objectives are laid down:

- i. To examine the efficacy of CI in balancing knowledge and doing in HE to attain market demands.
- ii. To investigate the extent to which university instructors are willing to transcend disciplinary divides in their teaching practice.
- iii. To study the competency of CI in developing twenty-first-century/employability skills in undergraduates.
- iv. To investigate year 3 undergraduates' willingness to embrace integration in teaching and learning processes.
- v. To find out the processes of eliminating gaps between university-market demands using the CI approach.
- vi. To highlight the challenges of implementing CI, if any.

### **1.6 RESEARCH QUESTIONS**

The core research question of this study is:

- i. To what extent is curriculum integration efficacious in balancing knowledge and doing in higher education to meet market demands?

The sub-questions are as follows:

- i. How accommodating are university stakeholders in embracing curriculum integration to rehabilitate the grove of academe?
- ii. How effective is curriculum integration in developing twenty-first-century/employability skills in undergraduates?
- iii. How willing are university lecturers to transcend disciplinary divides in their teaching?
- iv. How inclined are undergraduates to embrace integration in their teaching and learning processes?
- v. What is the process of eliminating gaps between university and market demands using the curriculum integration teaching approach?
- vi. What are the challenges encountered throughout the process?

## **1.7 RESEARCH SCOPE**

This study aims to assess the effectiveness of CI in HE in balancing knowledge and doing to meet market demands. The study occurs in two public universities, one in Malaysia and one in Mauritius. In Malaysia, ten final-year undergraduates of the Bachelor in Education course, two academics teaching the ten final-year students, and two professionals in the studied fields are the research participants. The research subjects in Mauritius are ten final-year undergraduates of the Bachelor of English course, two academics teaching the ten final-year students, and two professionals in the studied fields. In all, the sample size comprises twenty final-year undergraduates, four academics, and four professionals. The study's duration in both research sites is one semester long, that is fourteen lecture weeks.

In line with the above, the four academics who, prior to research, agreed to design integrated lessons through the Plan-Do-Study-Model (Deming, 1993), for the fourteen weeks, were interviewed through the semi-structured approach post-research. Their semi-structured interviews revolved around their experiences, perceptions, feelings, and challenges in adopting the integrated teaching approach for a semester. The ten students in each research site participated in a focus group discussion to share their insights, thoughts, emotions, and experiences in learning through the integrated pedagogy. The four professionals were required to assess the performance of the participants regarding market demands in their respective fields, regarding tasks that were set up by the four academics themselves. Post-evaluation, the four professionals were interviewed through the semi-structured method concerning their evaluations and perceptions. Data was qualitatively collected through document analysis (academics' lesson plans), semi-structured interviews (academics and professionals), and focus group discussion (students-subjects), and analysed through Creswell's (2013) qualitative data analysis model. The findings were then critically discussed in line with the literature on theoretical and applied knowledge in HE, constructivist learning theory and Bloom's Taxonomy. The following sheds light on the research sites.

## **1.8 THE STUDY'S SETTING**

As mentioned in the above section, this study researches two public universities, notably one in Malaysia and one in Mauritius. Adhering to the established confidentiality and ethical protocols in research, the names of the studied universities are not divulged and are superseded by fictitious appellations. However, there is no ethical constraint in unveiling the name of the chosen countries, given that the presented data provides no hint as to which universities, in particular, they are referring to. The university in Mauritius is referred to as the 'University of Hamlet', and the university in Malaysia is named as 'University of Macbeth'. The contemporary state of graduates' employability in Mauritius and Malaysia is provided in the following sub-section:

### **1.8.1 Existing Picture of Graduates' Employability in Mauritius**

In Mauritius, the growth of the economic spheres depends largely on its people (Budget Speech, 2019-2020). The newly introduced government's educational policy of providing free tertiary education in public universities led to a steady increase of 47 398 in university education matriculation in 2018 (Tertiary Education Commission, 2019), and this figure is speculated by the government to further increase in the coming years (Budget Speech 2019-2020). Nonetheless, the prominent economic concern of the Mauritian government is graduates' work readiness and unemployment. Graduates' unemployment rose by 1.6% in 2020 from 26.1% to 27.7% in 2021 (Government of Mauritius, 2022). In 2019, 28% of the 39,300 unemployed were university graduates (Statistics of Mauritius, 2019), and Mauritius dropped from 49<sup>th</sup> in the preceding year to 52<sup>nd</sup> in the global competitive ranking due to inadequate human capital (Shwarb, 2019). In line with the government's research notably Human Development Resource Council (2017), studies conducted by Sarita et al (2020), Verma et al (2018), Verde-Frontier (2016), and Kisto (2015) underscored employers' confessions of having strenuous times in finding local employees with work readiness skills and ended up recruiting foreigners fitting their job requirements. The World Bank (2015) and Winterton and Turner (2020) reported that higher education in Mauritius still uses outdated teaching methods and produces too many graduates who lack the skills employers need. This aligns with recent evidence of Mauritian university students who resorted to written presses to communicate their perturbation about their local universities which from their perspective still 'adapted for the 1900s' providing 'boring lectures and class presentations' (LeMauricien, 2021; Ashehr.com, 2022). Recent investigations as referred to above and that carried out by Sarita et al (2020), who investigated 100 top companies in Mauritius deplored the traditional lecturing method in universities and strengthened the need to substitute it with an industry-centric curriculum to establish links between government policies (SME Employment Scheme, 2021), universities, and industries. Traditional teaching is criticized for the lack of preparedness among Mauritian graduates for employment. Nonetheless, there has not been any systematic study to confirm whether creating industry-centric curricula would promote graduates-work readiness. Therefore, this renders this connection inconclusive for now. This study contributes to this area by

examining an established university curriculum that balances theoretical knowledge with applied knowledge to prepare graduates for employment. The following provides details about the present scene of graduates' employability in Malaysia.

### **1.8.2 Existing Picture of Graduates' Employability in Malaysia**

Graduates' high unemployment rate is underlined as a persisting problem in the Malaysia since 2016 (Ministry of Education, 2015, 2018; Walters, 2016; Sing and Yussof, 2017; Omar and Rajoo, 2016). Department of Statistics Malaysia (2022) registered an increase of 4% in graduates in 2021, but the number of graduates entering the labour force stayed static as in 2020. The Economic Report (2018), the Malaysian Employers' Federation (2016), Malaysians Productive Corporation (2017), Mohd Saleh et al (2018), and Prikshat et al (2018) studies unveiled graduates' unpreparedness for jobs as the cause of their unemployment. In a similar vein, TalentCorp (2020), the National Graduate Employability Blueprint (Ma'ad and Daud, 2020), and Nadarajah (2021) disclosed depth of knowledge, lack of problem-solving ability, skills deficiency, unwillingness to learn, and poor English language proficiency as the flaws of Malaysian graduates. This finding propelled Faizah et al (2022), and the National Graduate Employability Blueprint (2021) to question the role of universities in producing graduates' readiness. In his research, Benette (2019) demonstrated that academics in Malaysia's universities were reluctant to incorporate employability skills in their teaching and adopted the didactic pedagogy due to the unavailability of resources, poor knowledge of skills integration, and limited preparation time. Such a system equips students with solely theoretical knowledge, depriving them of applied knowledge (Bennette, 2019). In another study done by Benette (2016) himself, Malaysian' graduates were found to be docile, relying completely on their lecturers to upgrade their knowledge base. Docility is not a valued skill by the existing market, which contrarily prefers agility and dynamism (National Graduate Employability Blueprint, 2021). Previous investigations, as highlighted above, have reported Malaysian graduates' unpreparedness for employment and implicated the need to review university education, which this study focuses on. The following presents the significance of this study.

## 1.9 SIGNIFICANCE OF RESEARCH

There are several significant areas to which this study makes an original contribution. To begin with, as underscored in section 1:2, this study extends the knowledge, methodological, empirical, theoretical and population database on CI in HE and offers insights into the effectiveness of CI in shaping graduates for work readiness. Thaneberg et al (2017) systematic analysis of published articles on integration in practice, particularly that of STEAM, highlighted that the integrated curricula were more of a patchwork and jigsaw puzzle glued together from many disciplinary areas, which ultimately foiled their purpose of attaining disciplinary integration. This eventually underscores a knowledge void gap as desired research findings on a meaningful infusion of related disciplines are absent. Moreover, a methodological design gap is underlined as available scholarly journal articles on CI employed mostly a singular quantitative method to collect data. A variation of research methods, as mentioned by Miles (2017), is essential to lay hands on in-depth insights and to steer clear of contorted information. This delineates why this study uses multiple datasets, data collection tools and theories to examine the studied topic.

In addition, existing ambiguities surrounding the term CI are underlined in the literature. Scholars seem to have varying definitions of it, both as an end product and an approach. The terms interdisciplinary and multidisciplinary integration approaches are often used interchangeably by scholars when, in reality, they are two different approaches (Drake, 2012). To fill this contradictory evidence gap and hinder confusion, this study establishes a clear definition of what CI is, both as an end product and an approach. Most of the research articles on CI dealt with how CI boosted students' motivation, with only a few focusing on the relationship between CI and academic performance. The absence of literature on CI in HE or the link between CI and the twenty-first-century market underpins a theoretical gap in this area. By analysing the raw findings with the selected theories in the conceptual framework, this study generates new insights on the topic, hence filling both the theoretical and knowledge gaps. Throughout this process, this study also explores exhaustively the impact of CI on university students' academic expertise, therefore providing data on this area as well. The population gap is also addressed, as tertiary students' experiences with CI are under-researched in prior research.

Further, this study responds to the progressive screech of the world's key actors in education to make university curricula exploratory, pertinent, integrated, meaningful and in alignment with market demands (UN, 2022; OECD, 2022; UNESCO, 2022; Bureau of Labour Statistics and Occupational Handbook, 2021; Walters et al, 2016; Lehman, 2020; Parizek, 2021; Tarik and Sicklinger, 2022). This study strengthens the link between relevant stakeholders namely significant key actors in the field, universities, and market requisitions and positions them on the same footing.

Furthermore, this study, through the use of CI, creates highly skilled university graduates to fulfil the market's demands, alongside providing the solution to every nation facing the daunting challenge of graduates' unpreparedness for work. An examination of the published studies on CI in the literature reveals a scant availability of it, which deals mostly with conceptual standpoints and curriculum reports instead of presenting empirically grounded knowledge. This study, therefore, advances the corpus of applied findings in education as well as provides insights into how other disciplines can integrate their curricula.

Building on the above, although graduates' employability has been thoroughly researched in European landscapes, there has been little discussion on it in Malaysia and Mauritius. The few available studies neglected why graduates are unprepared for work as well as the solution to this problem, while tending largely to the identified gaps between universities and job markets. This study purposely adopts a qualitative approach to rigorously answer the why question, alongside evaluating the effectiveness of CI as the solution. By seeking professionals' assistance in reviewing university students' expertise at the end of the research, this study provides novel findings into how efficacious CI is in moulding university students for work in Malaysia and Mauritius. The same technique can be applied in other geographical locations.

Moreover, students' experiences with CI and their developed expertise make it easier for policymakers, curriculum designers, and academics to identify gaps between theory and practice. Therefore, this provides the above-mentioned subjects with the opportunity to review existing curricula and practices. Additionally, this study

elucidates the difficulties of aligning university-integrated courses with what the market needs. This helps policymakers understand the obstacles and work on them to creating skilled workers. The following presents the operational definitions of key terms.

### **1.10 OPERATIONAL DEFINITIONS OF TERMS**

To eliminate ambiguities regarding the meanings of key terms used in this study, the operational definition of them is considered significant.

- a. Curriculum Integration: An absence of a single uniform definition of this term with an incomplete picture of its integration in practice is noted in theoretical literature (Drake, 2012). This thesis will adhere to Lehmann's (2020) definition of CI referring to the diverse content areas in distinct disciplines to give a unified, holistic perspective of learning.
- b. Higher Education: Theoretically, this term is an umbrella one composed of postsecondary institutions such as universities, polytechnics, and research training (Lumumba, 2005). However, in this study, the term 'higher education' refers to universities only.
- c. Twenty-first-century skills: In this study, the terms twenty-first-century skills and employability skills are used interchangeably to refer to skills notably creativity and innovation, leadership and responsibility, critical thinking and problem-solving, communication, collaborative, ICT, and self-directed learning skills (P21 Framework, 2011; Malaysian Education Blueprint HE, 2015-2025; Higher Education Commission Strategic Plan, 2022-2025).
- d. Market Demands: Adhering to the definition of Almeida (2019), this study refers to market demands as the expected requisites of employers from employees.

## **1.11 CHAPTER SUMMARY**

This prefatory chapter is split into twelve segments. The first segment presents the evolving nature of knowledge in the twenty-first century and underscores its influence on HE and the job market. The second segment unveils the background of the study, highlighting the need to have a university curriculum that mirrors reality. The third segment underscores the problem statement; it draws from research studies, statements from the leading press, and key international education reports to highlight the seriousness of the identified problem, which is the irrelevancy of the current HE to the market's realities. The fourth segment sheds light on the rationale, particularly underscoring the reasons for which this study is carried out, while the fifth segment enumerates the research aim and objectives, followed by the research questions in the sixth section. The seventh section presents the scope of the research, shedding light on its unfoldment, the eighth section reveals a public university in Malaysia and Mauritius as the research sites and provides an existing picture of graduates' employability in both sites. The ninth section highlights the significance of research, the tenth section defines key operational terms, and the eleventh section encapsulates the introductory chapter. The twelfth section sheds light on the thesis structure.

## **1.12 THESIS STRUCTURE**

This thesis is split into four major sections namely (I) The General Prologue consisting of the introductory chapter, (II) The Prologue to the Tale reviewed relevant literature on the studied topic, (III) The Tale constituting the methodology and findings and (IV) The Epilogue comprising the concluding chapter.

## **CHAPTER TWO**

### **PROLOGUE TO THE TALE**

#### **2.1 LITERATURE REVIEW**

This section is split into five segments. The first segment elaborates on the definition of CI, the second segment reviews CI of theoretical knowledge with applied knowledge in HE, the third segment presents the nature, implementation, and issues of CI in the two research sites of this study notably Malaysia and Mauritius, the fourth segment delineates learning theories forming the conceptual framework of this study, and the fifth segment encloses this section with a visual representation and flowchart of the interconnectedness of the above-mentioned segments.

#### **2.2 CURRICULUM INTEGRATION: DEFINITION AND ELABORATION**

The relatively exiguous number of published studies on CI in the literature denotes a disagreement among scholars in defining the term. It appears that researchers calculatedly chose their words to define CI, especially by those who perceive CI as a linear process or as an outcome-based education. In response to definitions of CI by Beane (2021), Adamu (2002) and Shoemaker (1989) as a final product where knowledge is integrated across disciplines to understand complex interrelated realities, Bintz et al (2006) and Johnson (2002) argued that thinking skills should be included in the definition because both content and skills learned separately should be combined into a unified teaching method. Venville, Wallace, Rennie and Malone (2000) suggested using the word ‘bridging’ instead of ‘connecting’ to describe CI as a distinctly different approach from merely joining knowledge bases. These definitions differ from Beane’s (1995) and Bullough’s (1999) definitions of CI, which questioned ‘what counts as content’ and ‘who decides what counts’, emphasising that integrated curriculum content should focus on topics relevant to students’ lives. This definition starkly questions the epistemology of knowledge; from Young’s (2008) viewpoint, education systems perceiving knowledge as static, absolutist, and independent from

people's realities are likely to espouse conventional pedagogy instead of constructivist teaching, which treats knowledge as a social construct. This definition of CI makes it clear that the collective way curriculum developers perceive how knowledge is acquired influences how they design and put into practice the curriculum. Undeniably, the multiple varied definitions of CI highlight the ambiguities surrounding the term, which, according to Var's (1993) and Jacob's (1989) research, thwart a perspicuous understanding of it. The inconsistently available literature on CI demands a profound comprehension of the term as it has lately stirred heightened interest in international educational discourse (Bennett, Rowley, Dunbar-Hall, Hitchcock and Blom, 2016).

Researchers who see CI as a teaching approach define it by its three main types: multidisciplinary, interdisciplinary and transdisciplinary. Adopting an individualised structure, multidisciplinary learning connects related learning areas to teach common themes or topics. Interdisciplinary, on the other hand, scrutinises, synthesises, and synchronises connections across disciplines into a cogent and harmonised whole, while transdisciplinary moves beyond teaching across disciplines to multifaceted themes, topics, or issues threaded through reality (Drakes, 2007; Beane, 1997). Analysing these definitions shows that the transdisciplinary types completely change the nature of a discipline-based curriculum by removing boundaries between disciplines and rebuilding academic content based on real-world experiences. However, Hargreaves et al (1996), Albert and Albert (1962), and Erikson (1995) affirmed the unfeasibility of the transdisciplinary pedagogy in any era of answerability in HE. Gibbs' (2017) research refutes the above affirmation by questioning universities for arranging knowledge in conventional ways, particularly when the world functions within a constantly evolving transdisciplinary approach. This conflicting perception implicates the need to examine whether universities are likely to favour the transdisciplinary approach over the two mentioned approaches, or vice versa. Consequently, this study gives the academic informants the freedom to apply the type of integration of their choice in their practice. A leaflet with minute details about the three types of integration was handed to the academics' informants before the research. The limited theoretical evidence of multidisciplinary, interdisciplinary and transdisciplinary approaches makes CI appear vague in what it is supposed to achieve (Case, 1991, pp.2015), or a confusing term about what makes an

effective integration (Chein, 2004, pp.1). These are the highlighted research areas that this study aims to tap into. Additionally, an online search for the three types of integration in undergraduate courses using numerous keyword combinations from various empirical research databases failed to produce any empirical literature. The lack of empirical literature on the three types of integration in university classrooms shows that much heuristic research is still needed in this area, which makes this study a productive research topic. Theoretically based studies by Caspersen et al (2017), Gantogtokh and Quinland (2017), and Millar (2016) have described the application of CI in HE as demanding, but also challenging and stressful, as the positive response of academics to educational policies and reforms that favour integration is not assured. Brogger's (2014) study highlighted Italian academics' resistance to being passive repositories of integrated curriculum changes. Similarly, while the Australian government has strongly endorsed the integration of employability skills in HE, research has highlighted the lack of its implementation in academic practice (Harris-Reeves and Mahoney, 2017; Contronei-Baird, 2019). Academics' negation of CI in HE, according to the research of Leong and Kavanagh (2013) and Harris-Reeves and Mahoney (2017), is due to their poor understanding of CI. This interpretation is challenged by Davey, Baaken, and Galan-Muros (2011), whose research revealed the lower engagement of university managers with industry as the cause of the lack of uptake of CI in HE. These contrasting findings highlight discrepancies between HE policies and the microstructures, that is, university managers and academics as agents of change. If university managers and academics resist implementing the proposed curriculum changes, then the expected changes, as explained by Louvel (2013), remain unrealised. The following presents the CI of academic and applied knowledge as well as the twenty-first-century skills in HE.

### **2.3 CI OF ACADEMIC AND APPLIED KNOWLEDGE IN HE**

Much of the current literature on integrating academic knowledge with applied knowledge in HE highlights the adoption of customary models, particularly Tyler's curriculum development stages (Camacho et al, 2019; Comodi et al, 2019; Ma'dan et al, 2020). An examination of those models highlights their highly traditional and

generic nature, lacking authentic activities to integrate academic knowledge and make it relevant to the industry. According to Drake and Savage (2016), CI is the most effective strategy to integrate both academic and applied learning as it provides a unifying framework that supports comprehensive interdisciplinary capabilities and abilities. Consequently, to integrate the university's curriculum, this study uses the Plan-Do-Study-Act (PDSA) model by Deming (1993) to balance academic learning with application. This model is chosen for two main reasons: firstly, empirical evidence demonstrates that it is realistic enough to be used in any disciplinary area, and secondly, it is seen by early proponents of continuous educational improvement as a catalyst for systematic change that can improve students' outcomes. It also addresses organisational and structural elements impacting students' learning and holds promises for scaling up successful educational innovations across varying geographical locations by permitting local adaptations (Lewis, 2015; OECD Future of Education and Skills 2030, 2018). Since this study researches two different universities in two countries with different linguistic, cultural and geographical backgrounds, the PDSA model is considered the most appropriate. Furthermore, findings generated from this study can be used as preliminary adaptations to other countries dispersed across continents. An illustration of the PDSA model is provided below:

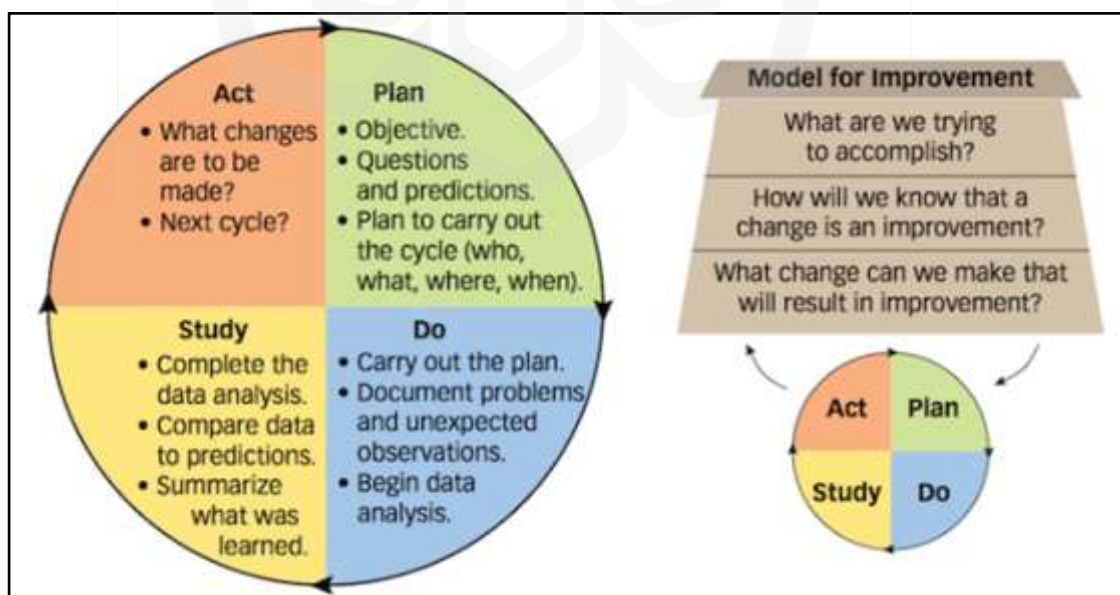
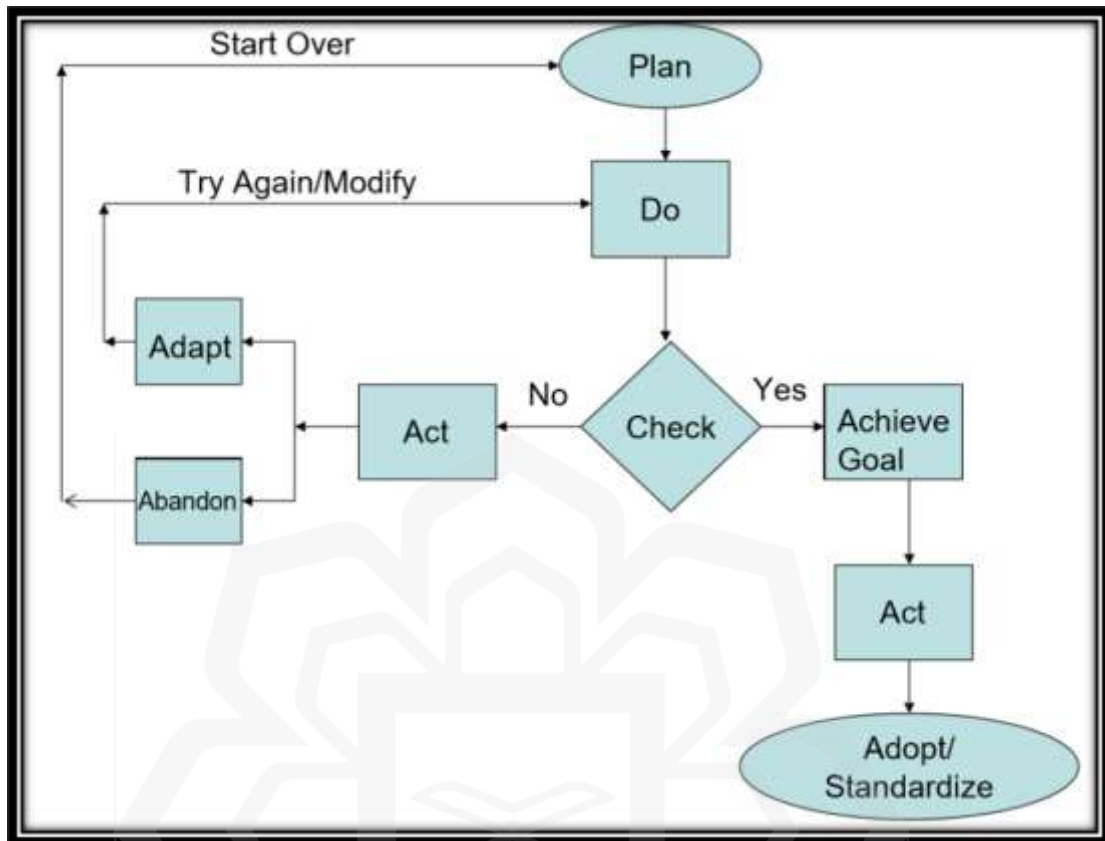


Illustration 2.1 The PDSA Model (Deming, 1993, pp. 35)

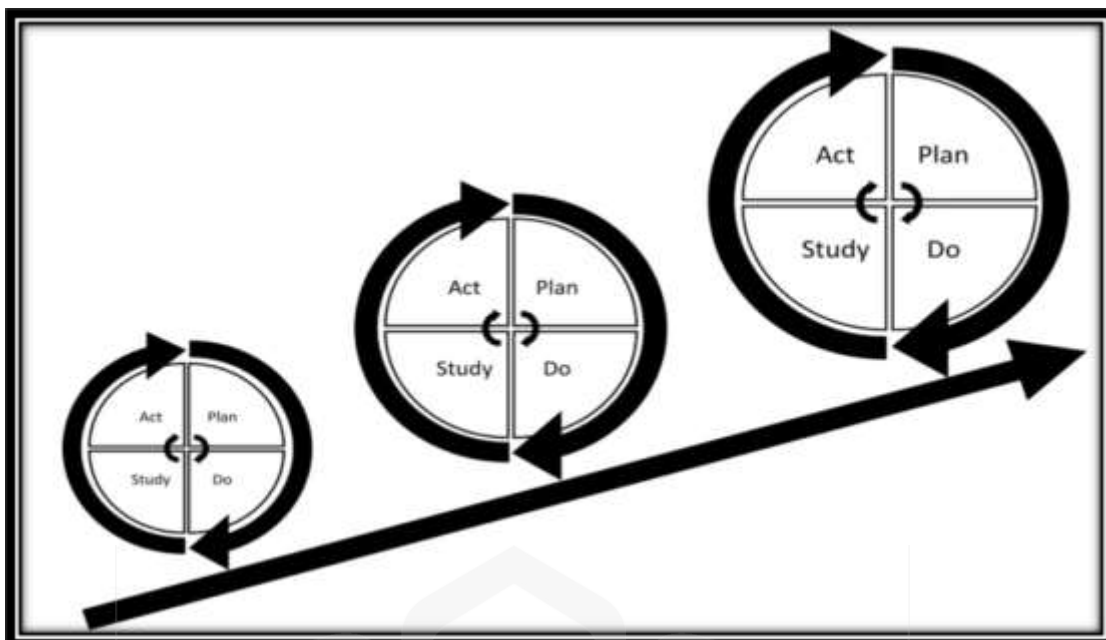
Referred to as Deming's wheel, the PDSA model, as displayed above, operates within an iterative paradigm and tests changes in a real-world setting to see whether the evaluated changes bring improvements (Langley et al, 2009; Deming, 1993). According to Langley et al's (1994), the three questions in the brown box should be asked when developing and updating curriculum and should be reflected upon before the implementation of the PDSA model. A scrutiny of the three questions hints at the need to evaluate each step in curriculum design, both before and after the enactment of any change. Post the conduct of the test of change, the PDSA model begins with the (I) plan stage, wherein research aims, objectives, questions, and procedural steps are determined. This stage also decides about the academic knowledge expertise that students need to know. Proceeding to the second stage, the (II) Do stage, involves enacting the plan through creative rich performance processes that help students developing and honing their twenty-first century skills notably critical thinking, interpersonal, problem solving, cooperative, leadership, digital, self-directed learning, management and flexibility skills (P21 Framework, 2011; Voogt and Roblin, 2012). The aforesaid skills are also referred to as life, generic, employability, and career skills in the literature and their transferability, applicability, and transversals traits make them be viewed as currencies of the labour markets (World, Economic Forum, 2019; European Central Bank, 2022; Hershbein and Macalusco, 2018). Steps 1 and 2 of the PDSA model can therefore be said to concomitantly tap into the development and improvement of the twenty-first-century skills while integrating academic knowledge with applied knowledge. Data analysis begins in stage 2 itself and continues to the (III) Study stage, wherein the divulged findings are explored in relation to literature to evaluate the genuine success of the enacted change. Moving to the last stage, notably the (IV) Act stage, acquired learning throughout the entire process is reviewed to see if it can be incorporated into the current curriculum and turned into a systematic and rigorous theoretical base for application and delineation of the PDSA model alongside CI in HE. The generated theories from practice can, in turn, fill in gaps between graduates' skillsets and employers' demands.

Below is a flowchart exemplifying the functioning of the PDSA model:



Flowchart 2.1 PDSA in practice

An intricate level, as shown above, entails a chain of changes, that is, a series of PDSA wheels to shift a curriculum from its existing condition to an ideal one. This is graphically depicted below:



(Langley, Moen, Nolan K. Nolan M, Norman and Provost, 2009, pp. 86)

Illustration 2.2 Chains of PDSA models

As shown above, each wheel provides information for the succeeding one. From the standpoint of Langley et al (2009), and Deming (1950), in due course of knowledge evolution, the quality of product, that is, education, requires the incremental upscaling of complex intervention and magnitude. Since a visible gap between university graduates and employers' demands has been pinpointed, it is perceptible that the finalised HE curriculum, that is, discipline-based by policymakers, is insufficient to produce work-ready graduates (Gallup Report, 2018; International Policy Digest Reports, 2019; World Economic Forum, 2018). Thus, a critical scarcity in the number of efficacious curricula is highlighted in the present century.

The following presents the nature, implementation, and issues of CI in Malaysia and Mauritius.

## **2.4 NATURE, IMPLEMENTATION, AND ISSUES OF CI IN MALAYSIA AND IN MAURITIUS**

Integrating academic knowledge with applied knowledge in Malaysian universities appears to be a daunting exercise (Yacoob, 2012). Despite official policies notably the Malaysian Graduate Blueprint (2012-2017), Malaysian Education Blueprint 2015-2025, the Twelfth Malaysian Plan 2021-2025, the Malaysian Qualification Agency (2022), and the Malaysian's Ministry of Higher Education funded collaborative projects between universities and industries alongside training notably the 'Industry Centre of Excellence' and 'Knowledge Transfer Partnership' to ameliorate Malaysia's graduates' marketability and realizing its requirement of having a professional and skilled workforce (MOHE, 2012, 2023) have been established, employers still discerned that unemployed Malaysian graduates are still insufficiently shaped with the demanded skillsets by employers. Continuous complaints from the Malaysian Employers' Federation (2016, 2023) about graduates' work unpreparedness and summoning universities curricula to be integrated with other disciplines through innovative pedagogies to meet stakeholders' requirements, sustain academic knowledge with practical application, invite industries to participate in curriculum design based on their required job skills, and establish take off concords between invited industries and graduates have been observed. Instead of industry-centric curricula, as propounded by the aforementioned policies, traditional teaching and assessments are observed to be still prevalent in Malaysia's HE with imperceptible takeoff agreements between industries and university students (Nadarajah, 2021; Sulaiman, Akhir, Hussain, Jaamin and Ramli, 2020; Malaysian Employers Federation, 2016; Fahimirad, Nair, Kotamjani and Feng, 2019). Differences between policies and practice are henceforth noted. The literature evidences two public universities, namely the University Malaysia Terengganu and the University Kebangsaan Malaysia which attempted to integrate academic and applied knowledge alongside twenty-first-century skills (Yunus, Hamzah, Tarmizi, Abu, Nor, Ali and Bakar, 2006), but the success of their concocted integrated curriculum framework was overly dependent on lecturers' commitment while supervision of the latter's practice was neglected (Yasin and Lium 2016). Also, examining the two created integrated curricula highlights meagre details about their planning, implementation, and assessment phases. According to Yasin and Liu (2016), and Yacob, Zainudin and Zurairah (2012), this was due to logistic

problems, unavailability of resources, poor operational contexts and most significantly, lecturers' unwillingness to cooperate in the designing and implementing phases, asserting that teaching generic and technical skills did not form part of their work and universities were not the right platform to do so. The highlighted negative demeanours of lecturers starkly demonstrate that if the HE policies call for a progressive shift within which universities cannot function in silos (Malaysian Education Blueprint for HE, 2013-2025), lecturers regressively rebut the propounded call. This interpretation is consistent with the research findings of Yunus et al (2006), Green et al (2009), and Ali et al (2016), who all underlined lecturers' impecunious knowledge in teaching twenty-first-century skills and integrated content as the prime cause for them to rebut this pedagogy. Implications thus include the centrality of retraining lecturers professionally so that they translate policies into their practice. Their resistance, as demonstrated by Leo's (2019) research, impinges on their students' developed expertise, who rely fully on their lecturers for knowledge acquisition. A noticeable relationship is therefore identified between lecturers' resentment of CI in HE and graduates' work unpreparedness. This delineates why both Nadarajah (2021) who studied 300 graduates in different universities in Malaysia, and the Central Bank of Malaysia's survey of 312 companies (Yen, Kamariah, Hw and Huong, 2009), spawned similar results of graduates' lacking the required skillsets to function effectively in the Malaysian's workforce.

In Mauritius, despite the Higher Education Commission Strategic Plan (2022-2025), The Regulatory Framework for HE (2022), and the Government Program 2020-2024, demand for a reorientation of Mauritius' university curriculum to create an adaptable, knowledgeable, and innovative workforce, details regarding the reorientation processes, particularly, which aspects in the university curriculum need to be revised, are absent. These claims were likely made in response to The Deloitte Report (2015), The Handover Report (2015), The World Bank Report (2015), and empirically grounded research by Verde-Frontier (2016), and Shwarb (2019), which all underlined the need to reinvent the overall operations of the present didactic university curriculum into a market-oriented one. An investigation of the aforementioned policies highlights that the stated desideratum of making universities relevant to the workforce is vaguely delineated, with more focus on free tertiary

education alongside newly made international alliances. CI in HE as a solution to meet market demands, though being heavily endorsed by key international educational policies such as the OECD (2022), UN (2022), and UNESCO (2022), and appears in different nations' local HE policies notably Finland, Singapore, and South Korea (Drake and Savage, 2016), is of no mentioned in Mauritius' HE policies (HEC Strategic Plan, 2022-20225). Mauritius' HE policies leave the onus on academics to see how they can render knowledge relevant to the workforce. Given that recent research depicts the continuing use of customary teaching in Mauritius' universities (Roopchand, 2019; Hardin-Ramanan et al, 2020), it is apparent that academics, as in Malaysia, were regressive towards reorienting their practice to make knowledge relevant to the market. In his groundbreaking investigation of issues impinging on the Mauritius' HE, Roopchand (2019), found that alongside budgetary government restrictions, recruiting and keeping qualified and experienced lecturers are the looming loopholes faced by the Mauritius' HE. If his aforementioned research finding, on the one hand, questions Mauritius' lecturers' credibility, on the other hand, it is supported by Finch, Peacock, Levallet and Foster's (2016) study wherein Mauritian graduates affirmed to face arduous times in building graduate capital independently without assistance from their university lecturers. A systematic review of HE in Mauritius highlights that unless HE policies are translated into a structured stepwise process, practice would remain irrelevant to market demands. The following presents the conceptual framework.

## **2.5 PREVIOUS STUDIES**

The study by Suputra et al (2024), titled *Does work-integrated curriculum transformation affect learning experience, student competencies, and learning interactions? The role of teaching strategy moderation* empirically validated the upsides of work-integrated curricula on learning performance. The study was conducted in a vocational secondary school in East Java, Indonesia, sampling 100 students. Drawing from the Structural Equation Modelling- Partial Least Squares (SEM-PLS) framework, it reveals positive impacts of work-integrated curricula on learning experiences, dialogues, and competencies. These positive outcomes were

mediated by student-centred methods, particularly in learning experiences. High predictive relevance ( $Q^2 = 0.989$ ) and squared value (0.829) underscored the efficacy and practical applicability of work-based curricula in secondary education.

However, it is noticeable that the study drew insights from solely 100 vocational secondary students in East Java, Indonesia, which raises concerns about generalising the collected findings across Indonesia's varied educational landscapes, particularly when vocational streams in each province are marked by geographical disparity, notably socioeconomic conditions, curricula and infrastructure. Therefore, the gathered data from East Java may not adequately represent the other provinces. Additionally, a deeper analysis of the sample size revealed that it is mostly formed of freshers (68%) and rural learners (77%), with a gender inequity in preference for females (65%). This uneven distribution is conceded but not fully exploited, though it impacted students' experiences and perspectives of work-integrated curriculum. First-year learners may have insufficient experience with curriculum reforms to give constructive feedback, while rural students might have faced particular pedagogical and infrastructural hurdles, impeding their learning outcomes. The cross-sectional study restrained causal connections and the follow-up of progress trends over time, which is needed for studying the longitudinal effect of curricula overhaul.

Moreover, the study relied exclusively on quantitative methods. While statistics from the SEM-PLS gave notable insights, the lack of qualitative data restrains having nuanced information about students' and teachers' lived experiences with work-based curricula. Qualitative data through interviews or focus groups would have rendered the data richer, especially by uncovering finer perspectives and implementation and contextual hurdles.

Likewise, Van and Takuro's (2024) research, '*A comparative study of work-integrated learning experiences: Perceptions and Perspectives of Engineering and Economics students*', yields interesting findings into the usefulness of work-integrated learning by comparing the experiences of 336 final year students; 164 from engineering and 172 from economics, from four top universities in Hanoi, Vietnam. Unlike Suputra et al.'s (2024) study, Van and Takuro's (2024) research employed a balanced sample and applied quantitative procedures meticulously, including

independent t-tests, MANOVA, and Mann-Whitney U tests, facilitating a solid comparison analysis. The findings showed that both the engineering and economics students acknowledged that work-integrated curricula prepared them for career readiness. Technical universities were found to provide more specialised and comprehensive work-integrated modules, whereas economics students had unstructured work-integrated courses. Male engineering students were found to be more mindful of the importance of work-integrated curricula for their employability. Nonetheless, there was no discernible gender difference in how work-integrated curricula were viewed in Economics.

Similar to Suputra et al's (2024) research, Van and Takuro's (2024) findings, despite being based on a sizeable population, are unlikely to be extended to Vietnam's heterogeneous HE systems as the study focused only on Hanoi. Moreover, the sole reliance on data from self-reported surveys hints at subjectivity and social desirability bias, while the lack of qualitative approaches prevents having a nuanced understanding of students' challenges, lived experiences, and contextual appropriateness of work-integrated placements. Causal inference is further limited by the cross-sectional design, and significant aspects of work-integrated learning implementation are overlooked due to the absence of input from the concerned stakeholders, namely professors, industry supervisors, and institutional leaders.

In line with the above two studies, Niemela (2022) conducted quantitative research exploring Finnish student teachers' integrative content knowledge within the scope of CI. Niemela (2022) administered a Likert scale questionnaire to 243 student teachers studying to teach different disciplines to secondary students of 13-18 years. Consequently, unlike the above two studies, Niemala's (2022) findings can be extended to the entire Finnish secondary school curriculum. Her research also found that the willingness to integrate knowledge was based on subject specialisation; Geography and History embraced CI as compared to Mathematics and Physics, which were reluctant. However, Niemala's (2022) study does not allow for causality, while its dependence on self-reported data underlines the possibility of bias. Further, instead of relying solely on a quantitative Likert questionnaire, which might be influenced by response fatigue, interpretation variability and overlooked nuanced opinions with pre-determined categories imposed on respondents, a mixed-methodology might have

unveiled contextual and pedagogical nuances that the quantitative design failed to capture. The replicability of the findings to other contexts with different curriculum structures is questioned.

This doctoral research, *Curriculum Integration in Higher Education: Transcending Disciplinary Divides to Meet Market Demands*, is pertinent and crucial, particularly when evaluated in light of the constraints identified in the above three previous studies. While Suputra et al. (2024), Van and Takuro (2024), and Niemela (2022) uncovered insightful empirical findings, they relied exclusively on quantitative methodologies, which fell short of capturing the breadth, context, and complexity of participants' lived experiences, aspects which this doctoral research aims to capture. Moreover, the three previous studies are survey-driven; thus, they neglected the larger curriculum creation ecosystem that includes undergraduates, academics, and professionals. The current study, on the other hand, uses a qualitative multi-perspective methodology, gathering lived experiences of academics and undergraduates with an integrated curriculum to meet market demands alongside the nuanced viewpoints of professionals. This triangulation offers a comprehensive perception of CI, grounded in classroom practices and industry expectations.

Furthermore, this doctoral research is conducted in a public Malaysian and Mauritian university. In contrast to the three previous studies, which were geographically limited to East Java, Hanoi and Finland, the findings of this doctoral research appear to be relevant and transferable outside a single nation or field of study, thanks to this cross-cultural viewpoint. Crucially, as opposed to the statistical models given in the three previous studies, this doctoral research employs Deming's (1993) Plan-Do-Study-Act cycle, a flexible framework that can be applied to diverse institutions and geographical contexts. This doctoral research specifically targets the integration of academic and practical knowledge across disciplines, focusing on the highly market-relevant abilities that are frequently fragmented in traditional curricula, even though Niemela (2022) mentioned disciplinary opposition in passing. All aspects considered, this doctoral research provides a , stakeholder-informed model that addresses the pedagogical demands of today's HE in addition to being more inclusive and methodologically rich.

## **2.6 CONCEPTUAL FRAMEWORK**

This study devises its conceptual framework based on three learning theories, notably (I) the International Islamic Institute of Thought's five steps of integrated teaching (1989), (II) Constructivism, and (III) Bloom's Taxonomy. These three theoretical frameworks are perceived as the perfect underpinning for this study primarily because they present synergistic teaching and learning practices that tap into students' cognitive, affective, and psychomotor developments while strengthening twenty-first-century skills in coordinating different knowledge disciplines. The three theories treat students as constructors of meaning, permitting them to generate individualised rules and mental modes throughout their active engagement in metacognition, wherein they critically reflect on their learning interests and understanding of learning concepts, terms, and principles in both theory and practice. The paradigm of these three theoretical frameworks emphasises the necessary synergy among lecturers to facilitate the incorporation of diverse disciplinary knowledge for CI to occur. This, therefore, implicates the role of lecturers as learning guides or mediators in producing conducive learning environments where strong student participation exists. Indirectly, this refers to university students being allowed to develop self-learning skills, that is, structuring knowledge and ideas independently based on their active participation in meaningful integrated teaching and learning processes, without the complete reliance on their lecturers for knowledge learning (Fogarty, 1991; International Institute of Islamic Thought, 1989; Piaget, 1967; Vygotsky, 1978; James et al, 2001; Armstrong, 2010; The Glossary of Education Reform, 2013; Chandio, 2016; Prasad, 2021). Additionally, the underlying philosophy of the three theoretical frameworks aligns with the aim, objectives, and research questions of this study. Below is an elucidation of the three theories:

### **2.6.1 International Institute of Islamic Thought's Five Steps of CI**

An analysis of the International Institute of Islamic Thought's (IIIT, 1989) concept of CI in providing wholesome education that taps into the development of human potentials, notably the mind, body, and soul, is seen to mirror Fogarty's (1991) CI framework, which adheres to Western ideologies. Both define integration by soliciting

the collaboration of academics in identifying overlapping concepts and thoughts in their disciplines to facilitate the design and implementation of disciplinary teaching. Such type of teaching reiterates the purpose of Education from the Islamic perspective, which is to shape students with a balanced personality in the cognitive, emotional, spiritual, and physical aspects (Nordin, 1988). The steps are as follows:

- i. The interconnectedness of disciplinary fields
- ii. Integration between theory and practice
- iii. In-class experience is linked to experience gained outside class
- iv. Cross-curricular moral values inculcation
- v. Sustaining the concept of a complete person from all aspects of spiritual, intellectual, imagination, emotional, and physical.

An examination of the five above steps reveals that the International Islamic Institute of Thought's (1989), concept of integrated teaching reflects the spirit and dynamism of Islamic education as providing a comprehensive, complete education that 'encompasses all sciences, either religion or secular', to create a balance sense of achievement between people and society (Kazim and Baogum, 2013). The first three steps shed light on how CI balances knowledge with doing, that is, besides adopting a unified teaching pedagogy which equips students with academic knowledge, authentic tasks related to reality should be designed to cater to applied knowledge. The integration between theory and practice and in-class experiences with out-of-class experiences leads to praxis knowledge, allowing students to critically reflect on the enactment of theory in practice and, in turn, how practice contributes to the way theories are understood in students' operational contexts. This is the type of knowledge that employers demand from employees in the 21st century (World Employment Forum, 2022); hence, it can be stated that the Islamic perspective of CI aligns with market demands. From an Islamic worldview, as mentioned by Nordin and Dan (2002), the purpose of the curriculum is to develop and hone students' potential holistically, which promotes the balanced growth of the whole personality of students through the priming of students' spirits, rational self, cognition, emotions, and bodily

senses. This aligns with the requirement of Muslims to grasp both individual (fardhu ain) and collective (fardhu kifayah) obligations. Moreover, personality enrichment, as mentioned in the fourth listed step, taps into the development of moral paragons with noble character, behaviours, and attitudes through integrated teaching. This step taps into the identified concern of both Malaysia's (Malaysian Employer Federation, 2016) and Mauritius's (Verde-Frontier, 2016) graduates lacking the right demeanour in the workplace. Also, this implies the development of students' personalities through constructive pedagogies and from Waghid's (2014) perspective, the Islamic framework of CI has a lot of constructive offers which can be employed to deal with knowledge surges in the twenty-first century. To the latter, the function of CI is to equip students with holistic traits, as mentioned in the fifth step, that is, the spiritual, intellectual, moral, and emotional knowledge throughout integrated teaching to face life situations. Given that CI put forth by the International Islamic Institute of Thought (1989), provides students with the chance to develop various self-potentials alongside twenty-first-century skills through its integrated processes of teaching and learning, it is selected to form part of this study's conceptual framework, which shares a similar ideology of CI in balancing academic and applied knowledge to meet market demands. The following presents the constructivist theory of learning.

### **2.6.2 Constructivism Theory of Learning**

Rooted in classical antiquity, constructivism is traced back to Socrates' period where Heraclitus (537-474 BC), a philosopher used dialogues and questions to aid his students in identifying flaws in their thinking. His adopted teaching methods depict learning as a social process which necessitates exchanges and de-structuring his students' cognitive actions and instead of structuring learning situations for them, he triggered reflective thinking through dialogues. Heraclitus' teaching methods reflect those of Kant (1724-1804), who argued for the inclusion of sensory experiences in thought's contemplation in teaching and learning processes to create new knowledge (O'Reilly, 2022). Though Heraclitus and Kant, based on their teaching practices, asserted that knowledge is generated by what can be seen, experienced, and put together by human reasoning through both an internal and external epistemic

approach, they did not devise any theoretical underpinning of learning to support their beliefs and pedagogies. The first theoretical underpinning of constructivist learning is first evidenced in the literature to be provided by Piaget (1960), who in his theoretically grounded research illustrated conceptions' creations through distinct mental processes while providing insights into how newly learned information is compiled (Murphy, 2002; Khlar, 2012). Constituents of this learning theory are provided in the following sub-section.

### ***2.6.2.1 Piaget's Cognitive Constructivism***

A reading of Piaget's (1960) theory divulges information on how students acquire and form knowledge and their critical reflection on it. Piaget held that every individual has a natural tendency to increase their intellect and that any attempt to suppress this tendency only serves to impede the growth of natural cognitive development. He identified four different stages of cognitive development from infancy to adulthood and argued that every child must experience these stages to attain the next stage of intellectual development. To him, every stage describes a period when a child is acquainted with new ways of cognitively representing knowledge. These four stages are elucidated in the following table:

Table 2.1 Piaget's (1960) four stages of cognitive development

<b>Stages</b>	<b>Description</b>
The first stage is the Sensory Motor Stage	According to Piaget, the first developmental stage lasts from birth to around the age of 2. Infants' strategies are, at this time, straightforward and action-focused. They form their strategies by using their senses and bodily movements. Regarding intelligence, it is correlated with the choices made by the infant, who builds his/her knowledge of the world through experience rather than thought.

<p>The second stage is the Preoperational Stage.</p>	<p>This stage lasts from around 2 to 7 years and is considered to be a crucial phase. At this period, a child begins to create cognitive structures, that is, they may resort to symbols like language, mental images, and gestures to express ideas and objects. Due to the lack of operational thinking at this stage of cognitive development, a child's reasoning is still not fully logical, and they are unable to comprehend complicated ideas.</p>
<p>The third stage is the Concrete Operational Stage</p>	<p>Related to the primary years, the right application of cognitive functions to situations involving concrete objects is a key feature of this stage. That is, a child, at this stage, can only handle problems relating to concrete (real-world) things and occurrences, not those involving abstract concepts.</p>
<p>The fourth stage is the Formal Operational Stage</p>	<p>This stage begins in early adolescence and in it, individuals develop the ability to logically employ symbols that relate to abstract notions. This is what allows individuals to start thinking abstractly when solving issues.</p>

Linked to education, the above-elaborated cognitive stages are meant to guide instructors regarding students' knowledge before instructing them. Intellectual growth, from Piaget's (1960) perspective is measured compared to the above stages and through three interconnected processes namely (I) Adaptation, (II) Assimilation, and (III) Equilibrium at each stage. Being the core ingredient of cognitive development, adaption refers to changing and adjusting oneself in response to environmental changes to maintain one's physical and intellectual survival. This is what leads to the schema, a term referring to individuals' mental structure which stores knowledge in

the latter's long-term memory. By interrelating to their environment, individuals build schemas. To Piaget (1960), this is what makes individuals anticipate, establish comprehension, and recall past events. When introduced to new knowledge, individuals tend to gather the new knowledge and arrange it according to previously stored schemas. They alter their schemas accordingly, either by accepting or rejecting the new knowledge. Schemas, as Piaget (1960) said, are connected and thus make it easier for individuals to familiarize themselves and have a firm understanding of their environments. There are inter and intra-schema connections. When an individual lacks knowledge on a topic, they are taken by surprise. In this instance, he/she links the new information to the existing schema and modifies it to incorporate the new information.

To avert tackling confutations, assimilation including accommodation occurs to maintain an equilibrium with the present schemas. Assimilation refers to the procedure of gathering and categorising fresh data and proofs. By fusing new information with individuals' pre-existing mental structures, this process aids in the development of new mental structures. Assimilation should not be confused with structural change; rather it merely refers to cognitive processing that permits the expansion of the already existing mental structure. Only when there is no confusion with pre-existing stored information in the schema that assimilation occur. Concerning this, accommodation refers to how individuals alter their thinking to fit new knowledge they were not exposed to before. If they encounter antithetical but reasonable and relatable information with their prior knowledge, accommodation happens. Post the accommodation phase, integrating the physical and mental components of the accommodated ideas into a logical system takes place. This process is known as Organisation. The absence of conflict or confusion between existing and new knowledge is what Piaget (1960) referred to as equilibrium. Disruptions in equilibrium do not entail the failure of the above processes but raise questions which elicit new thoughts and ideas. Challenging individuals' existing schemas can be said to trigger learning (Pritchard, 2014; Taber, 2011; Mc Gregor, 2007; Gupta and Frake, 2009; Wadsworth, 1989). The above delineation shows that according to Piaget (1960), the maturation of individuals' cognitive abilities happens with the latter's physical growth.

In response, arrays of empirical studies in literature notably Ornstein and Hunkins (2017), Babakr et al (2019), and Hopkins (2011) criticized Piaget (1960), for hyperbolizing teens' capabilities and underrating that of sprogs. The above-mentioned scholars' research underscored age as not an idle indicator to grasp skills and highlighted environmental influences as helping children to pick more skills listed for their stage compared to that of teens and adults. Scholars in the literature, as acclaimed by Robins et al (1998), appear to have ignored the criticisms made to Piaget's (1960) theory, as its' embracement is heavily endorsed in education due to its implementation in practice which depicted that it worked best in concrete, play, fact-based, problem-solving teaching and learning processes (Greer and Rudge, 2003; Southern Agricultural Education Research, 1998; Ojose, 2008; Zimmerman and Whitehurst, 2000). This way of teaching, from Kouiceman and Nachoa's (2016), and Piaget's (1960) perspectives, produces creative, self-initiative, critical individuals who discover knowledge for themselves, instead of accepting what is told to them. Consequently, this pedagogical strategy can be said to be capable of aiding students to coalesce new information into their background knowledge, making appropriate changes to their existing cognitive framework. Previous research like that of Elander and Cronje (2016) and Lee and Hannafin (2016), underlined empirical findings about students learning best through authentic, experiential activities requiring them to draw from their pre-existing knowledge and rebuild it to accommodate new knowledge and understanding. In Hassan's (2015) research, students were successful in solving challenging problems by drawing from their prior knowledge about previously explained themes. They were allowed to be inquisitive, design techniques, and ponder over their concluding remarks, which contrasted with their misconstrued comprehension. The students embarked on new circumstances with prior experiences stemming from both inside and outside the classrooms. As underlined by Ashton and Gregoire-Gill (2003, pp. 102), instructors should act as 'guides on the side' or facilitators of thinking who ask contemplative questions that propel students to think deeply and produce their distinct meanings and interpretations. Through challenging questions, they should permit students to come up with their original solutions, rely on primary knowledge sources to allow students to drive lessons, and provide the latter with time to reflect on the asked questions to evaluate their existing cognitive level, alongside helping them to escalate it. To Piaget, instructors should 'cease being a

lecturer, satisfied with transmitting ready-made solutions; his role should rather be that of a mentor stimulating initiative and research' (Ashton and Gregoire-Gill, 2003, pp. 102).

Moreover, a perusal of Piaget's (1960) operations stages unveils that individuals possess the capabilities of contemplating rationally and in the abstract. That is, students can reason logically, associate symbols with abstract notions, evaluate beliefs systematically, and reflect upon future ideological concerns. This therefore raises pedagogical implications for the use of tangible instructional tools and techniques such as modelling, graphics, hands-on activities, demonstrations, movements and bodily cues to render themes understandable. Opportunities to thoroughly introspect newly learned themes and apply them in their environment should be provided to students. This constructivist type of teaching permits students to improve gradationally towards functional musing (Piaget, 1972; Sexton, 1996; Burry-Stock, 1995; Adesanya, 2009). Furthermore, Piaget (1972) asserted that students require concrete experience to build new information in their mental structures. Throughout all developmental phases, students resort to mental maps they have created to navigate around the world. To him, repeated experiences easily integrate into students' cognitive structures while varying and new experiences lead to a disbalance in equilibrium propelling the latter to modify their cognitive structure to accommodate new knowledge. According to Kouicem and Nachoua (2016), knowledge and instructional strategies should be tailored to students' cognitive abilities. Given that every student's mental schemas are constantly being rescripted through the process of accommodation and assimilation in dealing with new input, the result is that no two students can have equal levels of preparation for a particular experience. Instructors are thus required to differentiate lessons and consider the variations in how each student approaches tasks and activities. In addition to this, Dalgarno (1996) asserted the use of scaffolded exploration as a teaching method since it is compatible with Piaget's (1960) description of adaptation and assimilation processes. In scaffolded exploration, students are allowed to choose their method of problem-solving. Though they are led independently, they are being assisted by their instructors and this assistance is what is known as scaffolding (Wood et al, 1976). The removal of the scaffold is the ultimate purpose of this teaching method since the focus

is on the students completing their tasks individually. Only when required, do instructors intervene with pertinent questions to enable the students to adapt their thoughts to new concepts. Simulations and micro worlds are other teaching methods which constructivists advocate for given that they offer a realistic atmosphere in which students can explore and experiment. These investigations enable students to create their mental image of the environment. Microworld's built-in interactivity allows for immediate feedback when students build models or test out their beliefs about the concepts being modelled (Dalgarno, 1996; McNeil and Krajcik, 2006). Piaget's (1960) cognitive constructivism emphasizes the idea that students learn through active exploration and learning happens when there is a contrariety between the latter's prior knowledge and newly exposed ones. The following presents the social aspect of the constructivism theory.

#### ***2.6.2.2 Social Constructivism***

Introduced by Vygotsky in 1968, social constructivism is a learning theory which underscores language and culture as pivotal to individuals' cognitive growth and comprehension of their realities. That is, language is used to transfer concepts, which are then interpreted and understood through experiences and interactions in a cultural context. Thus, knowledge is not just socially built but also co-constructed since it takes a community of people to have language and culture to create cognitive frameworks. While cognitive constructivism perceives knowledge as what students can independently do based on their experiences received from their surroundings, social constructivism views knowledge as what students can do in collaboration with their counterparts or instructors. Consequently, it can be stated that social constructivism is a subset of cognitive constructivism that stresses the collaborative nature of learning while being guided by a more knowledgeable other, either a teammate or the class teacher. To social constructivism, students' understanding is influenced not only by adaptive interactions with the physical environment but also by interactions among peers and teachers in respect to a reality that is not just physical and perceivable by the senses, but also cultural, meaningful and significant, made so in large part by language (Vygotsky, 1968, 1978; Pritchard and John, 2013; Wass and Golding, 2014; Rebecca, 2016; Shah and Ali, 2018). The social constructivism theory

divides learning into two phases namely (I) the actual development and (II) the zone of proximal development which is widely known as the ZPD in literature. The first phase delineates learning tasks that students can tackle without assistance while the second phase refers to the amount of learning that students are capable of attaining when receiving teachers' or peers' guidance (Hein, 1991; Vygotsky, 1978). To help students move from the first phase to the second one, that is from the known to the unknown, educational guidance in the form of collaborative, communicative activities, as evidenced by Vygotsky's (1978), Krashen's (1989), and Perry and Fosnot's (2005) research, are paramount. To the aforementioned scholars, cognitive growth and learning are ingrained in social exchanges with more knowledgeable others. True learning, from the perspectives of Roosevelt (2008), Krashen (1989), and Vygotsky (1978) occurs when instructors present materials that are slightly above their students' cognitive abilities. According to Joyce et al's (2004) research evidence, if instructors present tasks that are in the students' active development stage, the latter may feel bored. Likewise, if instructors introduce exercises that are way beyond students' cognitive abilities, the latter may feel frustrated. Alignment of tasks that are moderately higher than students' actual development level is hence underlined to be indispensable for learning to occur.

Additionally, Vygotsky (1978) stated that higher-order thinking skills, interpretation, and understanding have social roots. Interactions, to him, invigorate cognitive developments in students' ZPD through the negotiation of shared meanings which give rise to cognitive dissonance, a crucial process involving both cognitive activity and cultural counterparts. This process starts when the more capable others share their personal values, ideas, and attitudes that are regarded as appropriate by social and cultural norms with their peers. Within this process, students shift from their physical selves to build their social selves. This implies that through the process of supported learning, students can transform their psychology into a shared one. Students grow intellectually through arbitration and social constructivists believe that this is how students get psychologically ingrained in a culture. Like Vygotsky, Dewey highlights the significance of cultural forms and meanings in heightening individuals' thinking abilities. Contrarily, Piaget stressed the frolic of rational and analytical thinking. However, Dewey is also observed to support Piaget in his argument about

fostering independent, informed interpretation. Dewey can be said to agree with the integration of both Piaget's and Vygotsky's theories in education (Mayer, 2008). Dewey's approach asserts that students who participate in real-world tasks can display a higher level of knowledge through creativity and collaboration, just as Piaget and Vygotsky did not believe in memorization and repetitious learning (Behling and Hart, 2008). Dewey asserts that 'if [one] has doubts about how learning happens, engage in sustain inquiry: study, ponder, consider alternative possibilities and arrive at your belief grounded in evidence' (Reece, 2013, pp. 320). In line with the above, assisted learning merely provides scaffolds to students so that they can complete tasks in their ZPDs. Learning within the cultural context entails internalization of assisted learning which means that students alter their cognitive structure by the knowledge obtained from cultural contact. Internalizing tasks in the ZPD means that students have experienced cognitive growth and that the gap between what the latter can do independently and with scaffolds decreases. At this stage, the students' ZPDs shrink and are now capable of functioning independently without the scaffolds of experienced others. Mastering tasks in ZPD, as proven by Cole and Cole's (2001) research, prompts students to engage in higher-order reasoning which in turn nurtures creativity and criticality. The mastered ZPDs then go into the actual development stage and to keep students engaged, interested, and thrilled about learning; their ZPDs should always be in motion. That is, new challenging tasks of a moderately higher cognitive level should then be introduced (Vygotsky, 1978; Murray and Arroyo, 2002). Kapur's (2018) study evidenced that the social construction of knowledge occurred through a variety of ways and methods, such as group discussion, teamwork, or any type of pedagogical contact in a place of learning, training or worship. His research highlighted that students obtained the required knowledge and experiences for leading fulfilling lives when they engaged with others, the physical, and immaterial world and themselves. In a similar vein, Akpan et al (2020) asserted that social constructivism is synonymous with cooperative learning due to its emphasis on students' involvement, discussion, and sharing. This pedagogical method allows for numerous correlative teaching techniques notably pair/group work, and project-based, classroom discussion. The fundamental tenet of the theory, as it can be seen, is that students collaborate in groups to share ideas, brainstorm solutions to problems, find

causes and effects, or simply produce new information to supplement what they already know (Vygotsky, 1968; Akpan et al, 2020).

Moving to the implications that this theory exerts on instructional methods, Kelly (2012) advocates that since social constructivism ratifies knowledge as a shared experience that emerges from social interaction rather than being a personal possession, it could be implemented in the classroom through case studies, fact-finding assignments, inquiry, self-directed, experiential, cooperation, and simulation-based learning. An examination of the theory in the literature highlights that its instructional strategies can be classified into discussion and collaborative group or activity tasks. According to Omwirhiren (2015), a discussion strategy or a guided classroom conversation is one that uses facilitated interaction to draw attention to a specific topic to assist students. This strategy, from the perspective of Jegede (2010), is time-consuming but it improves learning by allowing students to hone their communication skills as well as their cognitive abilities, including critical, and reflective thinking and assessing different viewpoints. Teachers' role, in this approach, is merely that of a facilitator. Through thoughtful conversation, teachers help students to learn by doing. In this type of instruction, teachers and students discuss a particular subject in detail through small group or class-wide discussions. The discussion is facilitated by the teacher and all students are free to express their opinions on the discussed topics. This strategy increases students' engagement, promotes learning retention, encourages discussion, and engages students as active participants in lessons where they are free to think democratically and question each other's standpoints before reaching informed agreements. Consequently, students gain abilities to reflect and think constructively, which aids in their ability to comprehend and examine problems thoroughly. They gain tolerance as a result of learning to accept and appreciate others' viewpoints, even when those viewpoints are unfavourable to them, which helps to strengthen their communication skills. Debate, think-pair-share, role-playing, brainstorming, field trips, and other socially engaged teaching and learning techniques are examples of discussion methods (Jegede, 2010; Kelly 2012; Omwirhiren, 2015; Akpan et al, 2020).

Furthermore, social constructivism, as depicted above, validates the collaborative creation of knowledge through interaction (Akpan et al, 2020). Collaboration usually occurs through group tasks where students work alongside their counterparts to fulfil learning objectives. In groups, students are anticipated to determine what they already know, what they need to know, and the best ways and places to find new information that could help them solve their learning tasks at hand. In this approach, the instructor's role is to support, direct, and oversee the learning process to facilitate learning to increase students' understanding while fostering their confidence in problem-solving. Project-based teaching and learning, according to Bell (2010), is a cutting-edge method of instruction that fosters collaboration and imparts a wide range of twenty-first-century skills for success in the knowledge age. With this type of instruction, students learn how to inquire and collaborate to conduct research and produce projects that showcase their knowledge. Bluemenfield et al (2011) assert that project-based learning is a thorough method of classroom teaching and learning that is created to involve students in research of real-world problems. Moreover, the jigsaw puzzle is another type of collaborative exercise that is endorsed in the literature (Igwe, 2018; Ike, 2016). Jigsaw is a type of collaborative learning strategy that is used in guided discovery teaching. Igwe (2018) claims that the cooperative learning approach and its tenets are embodied in the jigsaw instructional strategy. In this teaching approach, groups of students are formed and the instructors create scenarios that promote the collaboration of classmates in the instruction of new materials. According to Ike (2016), the achievement of each student is necessary for the success of the group and this is what makes jigsaw a successful teaching strategy. This therefore encourages the team to work together to succeed. Norafiah and Masitah (2021) incorporated a jigsaw strategy to support the learning of 19 diploma students of Travel and Tourism in their final year of study. Their research had as purpose of examining how cooperative learning through jigsaw improved their informants' comprehension of knowledge. Their findings accorded with previous research studies on the same subject particularly that of Lai and Viering (2012), Qiao and Jin (2010), Guneyusu and Tekmen (2010), and Gillies (2004), which showed that jigsaw honed students' learning performance. The informants affirmed that this method was enjoyable which from their perspectives equipped them with cooperative learning skills. They depended on each other for knowledge creation, learned to be more

responsible, and aided each other in developing and improving their social and collaborative abilities. As such, like the other collaborative, interactive strategies, jigsaw, as asserted by Winslow (2020), and Benek and Bezir-Akçay (2019), inculcated a sense of responsibility in students to ameliorate their grades alongside trust within each group mates to help achieve effective performance in their scores. Cooperative teaching strategy, as proven by Jones and Jones (2008) and Akinbobola's (2009), research, is a successful teaching strategy that not only helps students to effectively meet learning goals but develops the latter as an all-rounder ready for employability.

Overall, both the cognitive and social aspects of constructivism metamorphose students from passive recipients to active, co-creators of knowledge through their engagement in cognitive, affective, and psychomotor domains while applying academic knowledge in practice. In turn, the application processes of academic content, through authentic tasks mirroring reality, help students to develop twenty-first-century skills (P21 Framework, 2011), hence, the cognitive and social aspects of constructivism can be said to align with this study's intent. The following presents the next theory of learning forming part of this study's conceptual framework.

### **2.6.3 Bloom's Taxonomy Theory of Learning**

Devised by Benjamin Bloom in 1956 and emended by the latter's student namely Krathwohl in 2002, Bloom's Taxonomy which is initially known as The Taxonomy of Educational Objective, classifies learning objectives in terms of definite and implicit cognitive expertise and frameworks. Initially designed to provide university lecturers, moderators, and markers a well-grounded framework for planning cognitive operations and evaluating students' academic performances and lecturers' pedagogical practices in 1956, Bloom's Taxonomy is underscored as a key reference model in the designing of twenty-first-century curriculum (Forehand, 2005; Soozandehfar and Adeli, 2016). In a similar vein, Newton et al. (2020), affirmed the realistic, measurable, and observable traits of Bloom's Taxonomy (1956), which differentiates from the behaviourism theory wherein learning is defined using hazy terms like 'to understand' or to 'internalise'. The literature evidences numerous scholars quoting the

following statement of Bloom when they argued for the application of academic knowledge in the classrooms:

‘What does a student do who understands that he does not do when he does not understand’

Poring the above quotation underlines that to Bloom, learning goes beyond understanding and internalizing and focuses on the applicability of grasped content in reality. The taxonomy presents provisos through which learning objectives could be collocated alongside cognitive complexities. The use of the taxonomy has become pervasive in various HEs globally. For instance, it is widely employed as a basis for teaching and learning in the United Kingdom’s HE which established learning objectives in regards to each tier of the taxonomy. To mitigate gaps between universities’ education and graduate unemployment in Uganda, Aheisibwe et al. (2021), after studying three faculty deans, twelve heads of departments, thirty lecturers, one hundred and twenty university students and fifteen alumni, proposed the adoption of Bloom’s Taxonomy (1956) in university teaching. According to them, their study highlighted an urge to use cognitive-based teaching methods notably, role-playing, cooperative, problem-solving, and game-based learning that tapped on the development of higher-order thinking skills. Their stated implication is corroborated by Nichols et al (2017), who equally found the need for students to be exposed to visuals to facilitate their cognitive modes and illuminate complex notions while catering for the development of their spatial skills. A mere search of the taxonomy yields 817,000 outcomes and showcases that the original taxonomy (Blooms, 1956) has been referenced in about 34,000 instances while the abridged version (Krathwohl, 2002), has been referred to nearly 19,5000 times (Newton et al, 2020; Soozandehfar and Adeli, 2016). Anderson and Krathwohl’s (2002) study demonstrated that educational systems are in favour of the taxonomy given it establishes learning objectives that encourage deep learning. Through its established set of objectives, the taxonomy indicates to both instructors and students what is anticipated from them to be accomplished in each learning course and guides teachers in setting up learning activities and assessments that appropriately reflect students’ progress towards established objectives. The taxonomy is made up of the cognitive, affective, and

psychomotor domains of learning and each of these domains is allocated a hierarchy which denotes varying learning levels. An illustration of Bloom's Taxonomy (1956) is provided below:

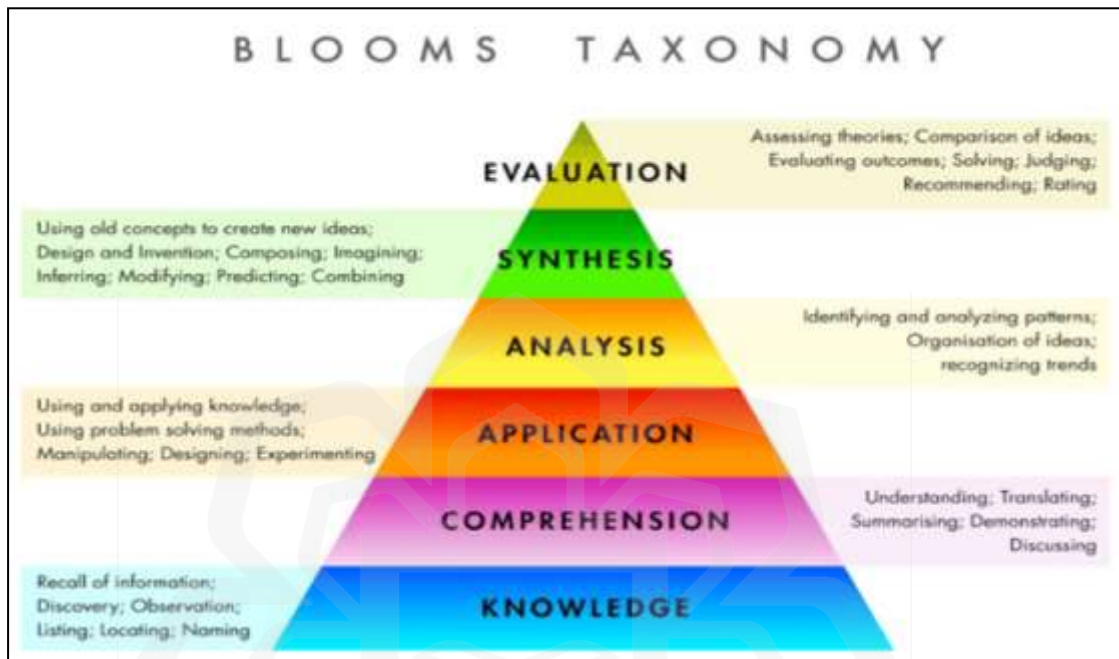


Illustration 2.3 Bloom's Taxonomy (1956)

As portrayed in the above illustration, the original taxonomy comprises six tiers of the cognitive domain ranging from simple memory or fact recognition which are at the lowest level to progressively sophisticated abstract mental levels, that is to the highest forms of reasoning, which is termed as evaluation. The first three tiers from the bottom are considered as lower-order thinking skills while the first three from the top are labelled as higher-order thinking skills. As can be seen, the purpose of the tiers is to elevate the teaching and learning process by beginning with the most basic but prerequisite level, that is, knowledge remembering to more advanced levels of appraising, generating, and evaluating. Bloom's Taxonomy is hierarchical, that is, learning at higher levels depends on mastering prerequisite information and abilities at the lower levels (Ornstein and Hunkins, 2017). Instructors, from Bloom's (1956) perspective, should introduce tasks that tap into students' higher-order thinking skills by employing higher thinking verbs in lessons and assessments. To him, this

technique aids students in developing their cognitive maturation (Ornstein and Hunkins, 2017; Stanny, 2016; Ch'ng, 2014; Felhusen, 2003). Higher-order thinking skills, from the standpoint of Johnson and Lamb (2011), and Pogrow (2005), are valued because they, as shown in the literature, are needed to better equip students with cognitive abilities to deal with all types of hurdles in their personal and professional lives. Pogrow's (2005) research proved that higher-order thinking helped to improve students' standardized assessment scores. He studied numerous past research on the taxonomy and concluded that the taxonomy has been successful in honing the academic grades of financially disadvantage students in reading comprehension and math. The 1956 hierarchy was revised in 2002 by Krathwohl, one of Blooms' students with input from experts in cognitive psychology, curriculum theories, instructional research and testing and assessment professionals. This updated version made a significant alteration to Blooms' Taxonomy cognitive domain by switching the language from nouns to verbs and gerunds which ultimately switch the emphasis from passive acquisition to active execution of the different learning types required at every tier of the hierarchy. The substitution of nouns to action verbs elucidates cognitive processes which instructors and students frequently encounter in teaching and learning situations. The focus, unlike in the original version which was on what students are anticipated to do, in the revised version, it is mostly on actions affiliated with the targeted cognitive processes. The word 'create' was shifted to the top level of the domain while the word 'synthesis' was removed. An illustration of the revised taxonomy is presented below:

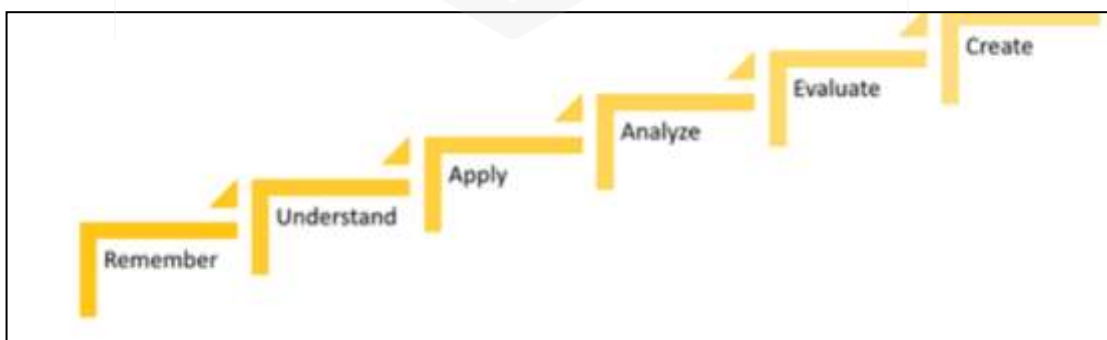


Illustration 2.4 The revised version of Blooms' Taxonomy (Krathwohl, 2002)

The hierarchy illustrated above taps on the cognitive domain which centres on mental abilities including analytical thinking, problem solving, and knowledge building. It goes beyond basic memorizing intended to increase students' knowledge on the creation of new knowledge/objects based on previously learned information. Students are anticipated to make a linear progression across this domain, starting with 'remember', and ending with 'create'. The affective domain is concerned with students' values, attitudes, engrossment, and appreciation. It starts with taking in and paying attention to information and progresses to internalizing values and acting on them. It puts a strong emphasis on assisting students in comprehending their own values and how they have altered through time. Receiving, responding, valuing, organising, and characterizing are the constituents of the affective domain. The psychomotor domain, on the other hand, pivots on the capacities of students in carrying out tasks requiring physical movements and master those physical skills. Reflexes, fundamental movements, non-discursive communication, and meaningful expressive actions are what this domain is made up of (Krathwohl, 2002; Harrow, 1972). A scrutinization of the two versions of the taxonomy raises the question, 'Are the different tiers presented in the taxonomy an inch-perfect rendition of how students learn?' To set inquisitive minds at ease, Bloom's (1956, pp. 1) asserted the following:

'our method of ordering educational outcomes will make it possible to define the range of phenomena for which such a theory must account'

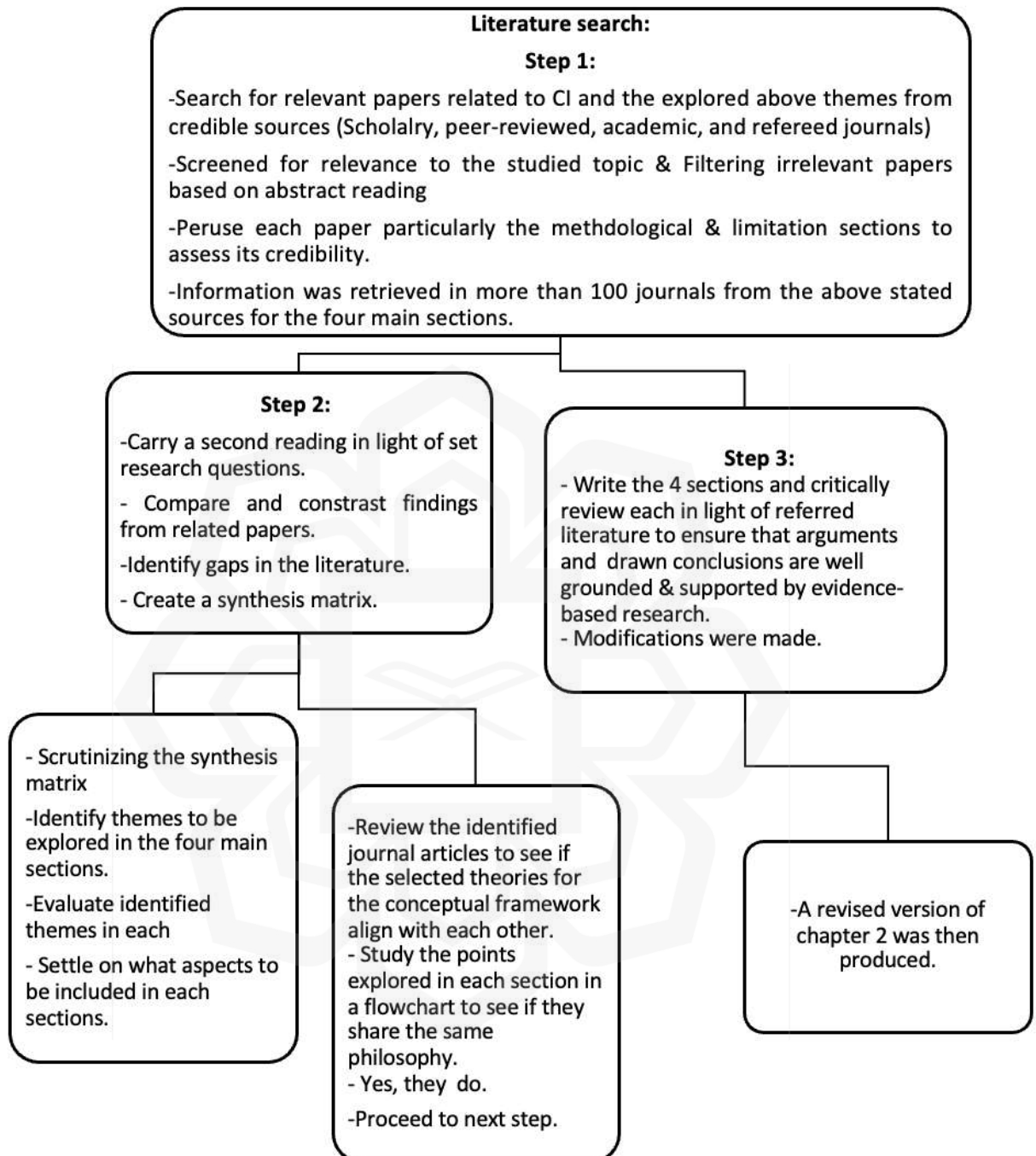
The assertion showcases Bloom's (1956) conviction about learning which accurately occurs as he detailed in his six-level tiers and the onus about how it is delivered rests on instructors' shoulders. To be objective, it is worth mentioning that in contemporary literature, there are ample of theories in the spheres of Psychology, Sociology, and Neurosciences, which all put forth different lines of thoughts about how learning should occur (Bjork and Bjork, 2011; Dunlosky et al, 2013; Cowan, 2014; Deslauriers et al,2019). Nonetheless, the taxonomy is highly valued in existing time by intergovernmental organizations notably the OECD (2018) in planning for the 'Future of Education and Skills in 2030', the UNESCO (2000), as well as research studies notably that of McBain (2011), Johnson and Lamb (2011), King Goodson and Rohani (2009), and Cotton (1997), which all underlined traits of both versions of the

taxonomy as a means to elevate quality and complexity of teaching and learning processes. This study uses the updated version to design integrated university lessons.

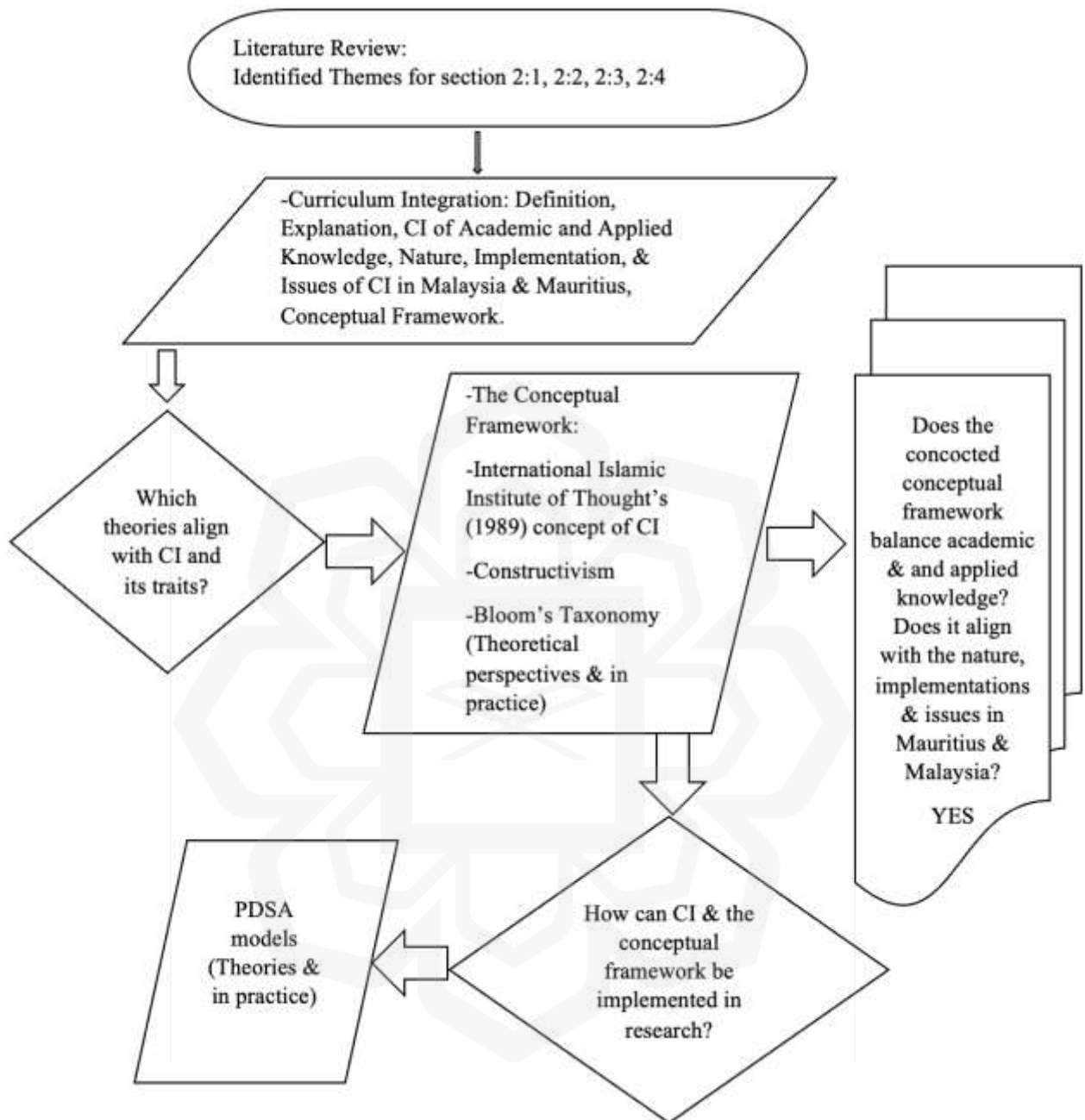
An evaluative review of Bloom's Taxonomy (1956) details the steps that progressively lead students towards cognitive maturation and the opportunities of applying learned knowledge in the classroom to reality. Like the other learning theories forming part of this conceptual framework, Bloom's (1956) taxonomy as well sustain academic knowledge with application while developing twenty-first century skills through the application processes. The following visually represents the above explored sections.



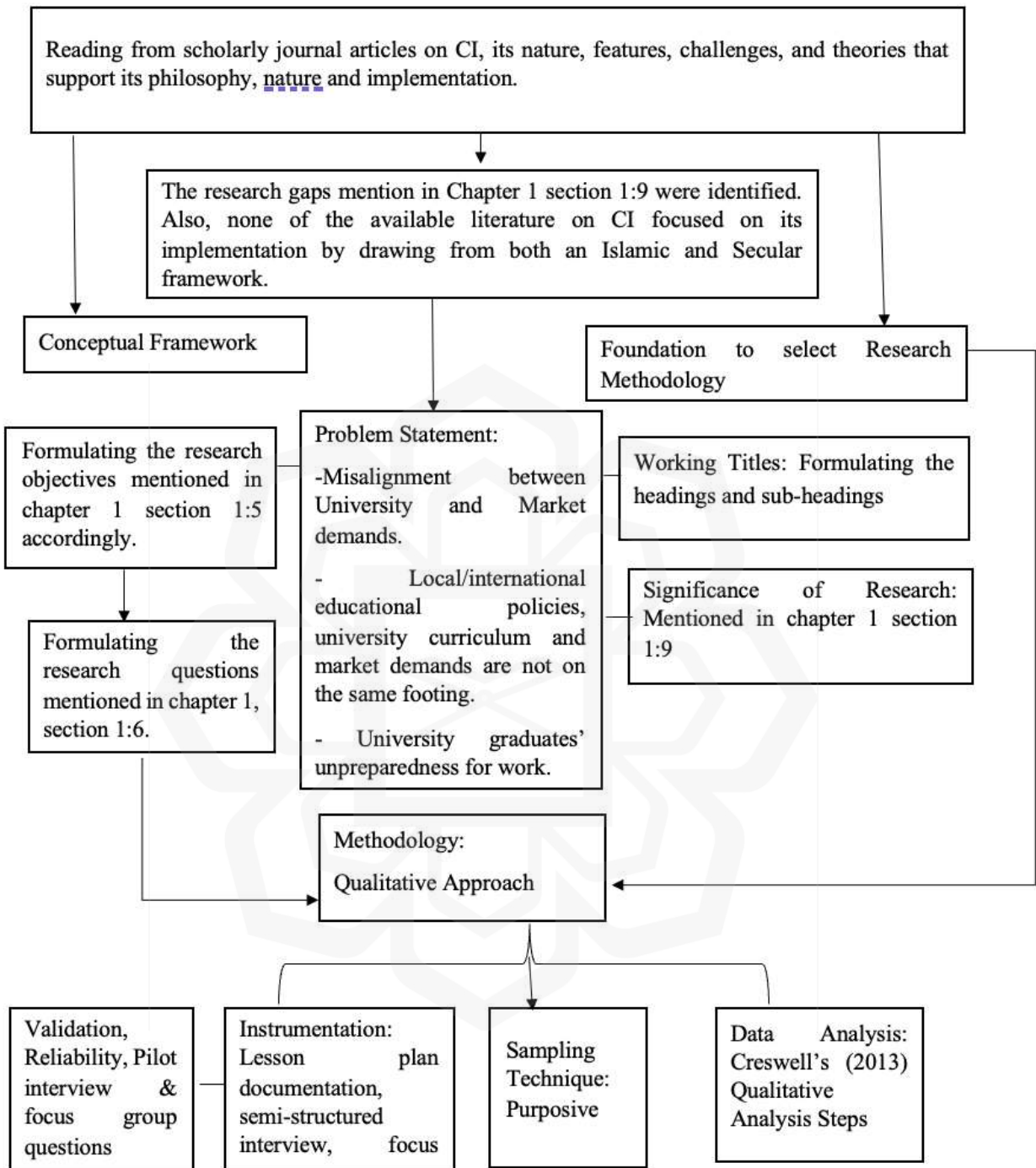
## 2.7 PICTORIAL REPRESENTATION OF THE LITERATURE REVIEW



### 2.7.1 Pictorial Illustration of the Connectivity of Sections 2:1, 2:2, 2:3 and 2:4



## 2.7.2 Research Framework and Methodology



## **CHAPTER THREE**

### **THE TALE: PUTTING INTO PLAY**

#### **3.1 METHODOLOGY**

This study examines the effectiveness of Curriculum Integration (CI) in Higher Education (HE) to balance theoretical knowledge and practical skills to meet market demands. This chapter provides comprehensive insights into the methodological framework adopted for this study, particularly focusing on the research paradigm, design, data collection instruments, sampling methods, selection of informants, analysis procedures, and adherence to ethical considerations. Information about the methodology and data collection tools for each mentioned research question in Chapter 1, Section 1:6 is also provided.

#### **3.2 RESEARCH PARADIGM AND RATIONALE**

Research paradigm governs the techniques and processes one chooses to conduct research (Kuhn, 1997). This study used purposive sampling, meaning the research sites and subjects were deliberately selected because they had certain characteristics relevant to the study's goals. An interpretive paradigm guided the research approach. Interpretivism, as Berryman (2019) advocates, is a research philosophy that sees reality as subjective, diverse, and shaped by society. It posits that research questions should focus on understanding a phenomenon's 'how,' 'what,' and 'why' aspects. In response to this observation, this study structured its research questions to uncover detailed patterns, providing rich descriptions and deep insights into the phenomenon under investigation, as underscored by Rehman and Alaharti (2016). An examination of the research questions in Chapter 1 Section 1:6 highlights their rejection of the objectivist perspective, which views meaning as independent of people (Collins, 2010). Instead, these questions focus on uncovering the meanings embedded within empirical evidence, intending to contribute to theory construction in areas where existing literature is limited. From experts' standpoints, the interpretivist paradigm is

best used for the inductive research approach, particularly in research areas with restrained a priori theory (Giorgi and Giorgi, 2003; Lincoln and Guba, 1985).

Furthermore, instead of adopting an isolationist and reductionist perspective, this study employed three research tools, namely the semi-structured interviews, focus group discussion (FGD), and documentation of lesson plans within the natural settings of participants. This approach aimed to identify contextual factors that balance theory with practice in HE, either supporting or impeding the alignment with market demands. The generation of data from multiple research techniques also made triangulations possible (Kowalski and Keedy, 2005). The triangulated findings provided a holistic, contextual interpretation of findings which, as stated by Denzin and Lincoln (1994), were rigorous and valid. This study also chose the interpretivist paradigm because it began the data analysis phase in the Do stage of the PDSA model itself. A lesson plan analysis was done before interviewing the subjects, namely the academics, university students, and professionals in education. The concurrent analysis highlighted specific areas necessitating deeper extraction of insights, particularly concerning students' attainment of twenty-first-century skills through integrated methodologies. This process allowed the researcher to revise the questions employed in both the semi-structured interviews and the FGD. To Lincoln and Guba (1985), this is a valuable tenet of the interpretive paradigm. The following presents the research design.

### **3.3 RESEARCH DESIGN: A COMPARATIVE MULTIPLE CASE STUDY**

In light of the research questions set in Chapter 1 and the nature of this study, a comparative, multiple-case study as a research design was chosen. The comparative multiple-case study design was chosen to address the research questions, as it allows for a comprehensive exploration of the phenomenon across different contexts. Research Question 1, which investigates the effectiveness of CI in balancing knowledge and doing, can be thoroughly examined by comparing two distinct educational settings. The differences and similarities identified between the University of Macbeth and the University of Hamlet will provide deeper insights into how contextual variables impact the integration of CI. Additionally, Research Question 2,

which seeks to understand the challenges faced in implementing CI, benefits from the comparative approach by highlighting context-specific hurdles and common barriers. This methodology choice is further supported by Yin (2009), who emphasises the strength of multiple-case studies in generating robust and transferable findings. This study has two single cases. By definition, a case study involves detailed and comprehensive investigations of complex issues in their real-life contexts (Yin, 2009, 2014). The purpose of each case in this study was to provide a comprehensive understanding of the phenomenon under examination from both an emic (inside) and etic (outside) perspectives. Emic examines phenomenon in its context itself, while etic refers to the use of analytical frameworks, theories and methods derived from outside the context of the studied phenomenon with the aim of making cross-cultural comparisons or identifying universal principles. This approach generated detailed and intensive data, which facilitated a cross-case analysis. This phase was deemed crucial because Cruzes et al. (2015) demonstrated that researchers often struggle to explore all aspects of a phenomenon thoroughly within a single case study. This shifted the focus from a single case study to a double one, which, as asserted by Creswell and Plano (2018, pp. 116), is a type of case study in which the qualitative data collection, results, and integration are used to provide in-depth evidence for cases or develop cases for comparative analysis. Yin (2003) claimed that when a study has more than one single case, a double/multiple case study is required. In this study, the cross-case analysis elicited similarities and differences between the two studied cases and permitted the researcher of this study to explore data within and across contexts (Yin, 2003, 2014). This aided the researcher of this study in evaluating the worthiness of the received information (Eisenhardt, 1991) and contributed rich data from the similarities and differences drawn from contrasted cases to existing literature (Vannoni, 2014, 2015). One overarching aspect underlined in the literature was that data derived from multiple case studies were considered strong and trustworthy, out of which compelling hypotheses were generated, given that they were deeply rooted in hands-on evidence (Eisenhardt and Graebner, 2007; Baxter and Jack, 2008; Creswell and Plano, 2013). Double cases can thus be said to enable deeper exploration of research areas and the development of theoretical frameworks. Moreover, double case studies are evidenced in the literature to be useful in comprehending the intramural dynamics of change processes in different contexts, hence, bringing out information on how distinct

contexts could impact implementation (Wensing and Grol, 2005). To establish a more in-depth, nuanced, theoretically informed understanding of change processes, researchers, namely Aarons et al (2012), Berwick (2008), Landsverk et al (2011), and Palinkas et al (2011) stressed the significance of conducting a double/multiple case study. This study fitted perfectly within the comparative multiple case study design as it studied the phenomenon in each case in their contextual environment first before proceeding to cross-analysing both cases. Another reason for which the double case study was opted was that it allowed the viewpoints of different involved parties (University lecturers, industrialists and students) from two universities to collaborate closely on how the HE curriculum could be integrated to meet professional demands. This study thoroughly explored how CI is used in higher education at the sites it examined, using data from various subjects. Below is an illustration of the double case study research design that this study adopted to conduct research:

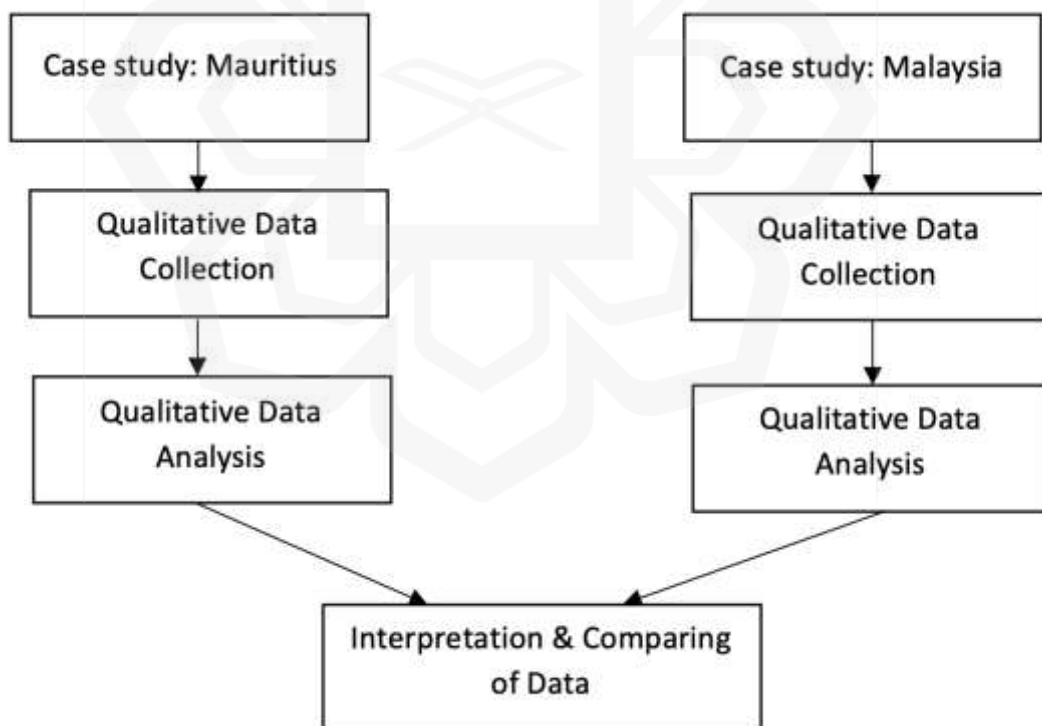


Illustration 3.1 Adopted research design

This study used CI as a strategy to address the gaps between universities and the job market. By employing a double case study design, the research provided detailed insights into the two contexts where the study was conducted, as well as potentially applicable findings to other settings. The use of the Plan-Do-Study-Act (PDSA) cycle, supported by literature, underlines its effectiveness in implementing change across different disciplinary fields and geographical locations (Deming, 1950, 1993). This therefore enlightens policymakers about the role of CI in closing the gaps, hurdles and difficulties that were underscored and, most significantly, provided details about how and why they occurred in the first instance alongside the solutions. The qualitative data collection methods were based on the implementation of the PDSA cycle exemplified below:

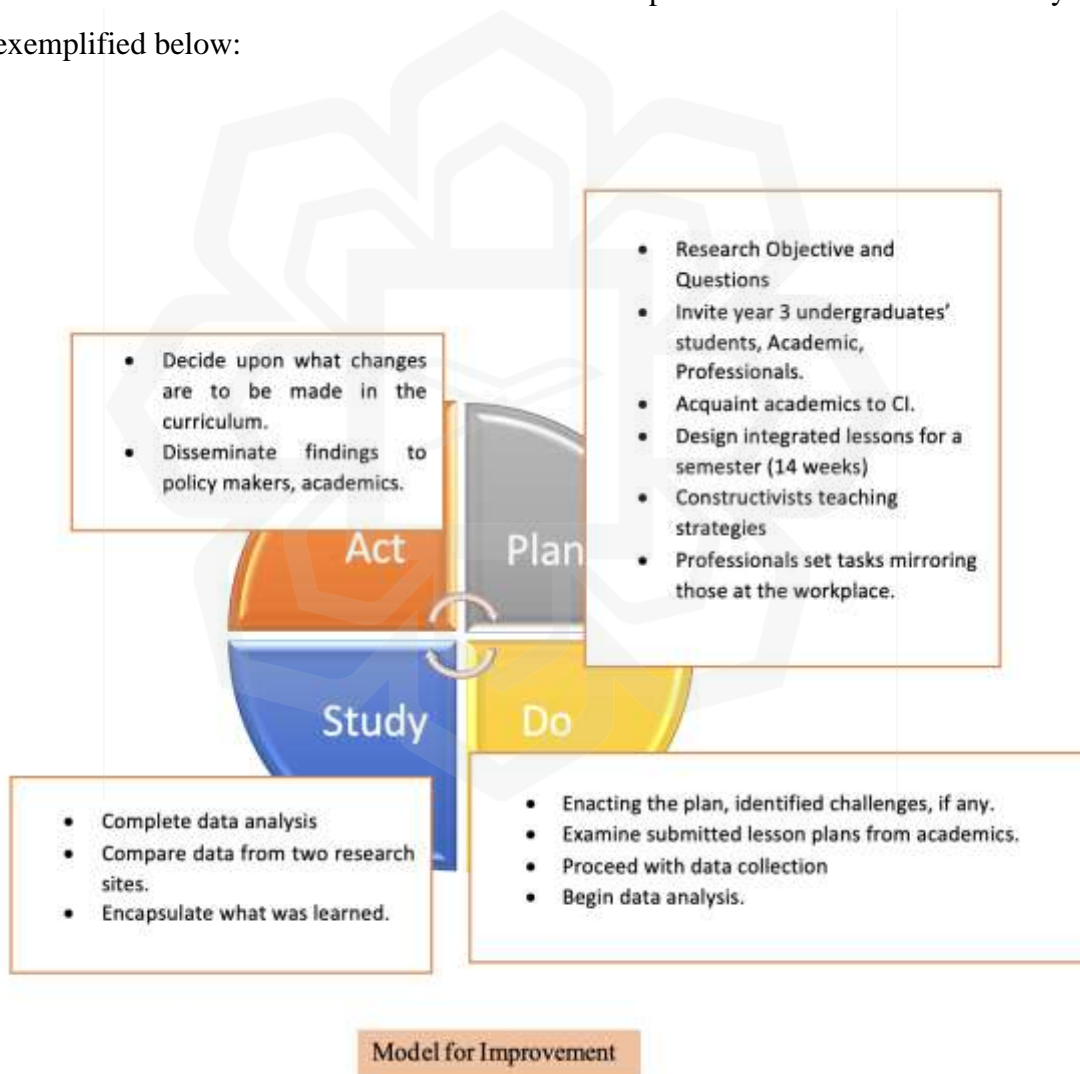


Illustration 3.2 PDSA cycle

What are we trying to accomplish?

- Integrating the HE curriculum to meet the market's demands.

How will we know that a change is an improvement?

- Academics and Students' responses to the study.
- Professionals' evaluation of set tasks similar to that at the workplace.

What change can we make that will result in improvement?

- Integrating the curriculum/Presenting a curriculum that transcends disciplinary divides and perceives learning as a whole/ Constructivist teaching methods/ Equipping graduates with 21st/employability skills.

The above provides details about the research design and implementation phase. The following sections provides explicit details about the data collection phase.

### **3.4 DATA COLLECTION INSTRUMENTS**

This study generated data from academics' lesson plans, semi-structured interviews with academics and professionals, and a focus group discussion (FGD) with the undergraduates. These research tools were selected primarily because of the ontological properties that this study adhered to which perceived knowledge, perceptions, comprehensions, experiences, and interactions as salient aspects of social realities within which the research objectives and questions were formulated. The above-mentioned data collection tools permitted the researcher to lay hands to in-depth, nuanced, complex, and rounded information as compared to surface patterns generated by structured, close ended data collection tools notably broad surveys. Moreover, since data feasibility on CI in HE is indistinct in the literature, perusing the lesson plans' contents and listening to the subjects in the interviews and the FGD were the sole way to generate the required data. Worth mentioning, the use of the three data collection instruments permitted the researcher to address the formulated research

questions through varying lenses. The following sub-section details each data collection instrument adopted in this study.

### **3.4.1 Lesson Plans Documentation**

This research method refers to the collection of data through compiling and analysing written or electronic documents (Nana, 2007; Altheide, 2012). In this study, the four academics who volunteered to participate in the research designed integrative lessons for topics on Education (the two academics at the University of Macbeth) and English Studies (the two academics at the University of Hamlet). They were free to create their lessons using any integrative approach, strategies and activities of their choice. Lesson plans created for each session dedicated to the teaching of the topics were handed to the researcher alongside students' formative and summative tasks for analysis. The subjects' permissions were sought alongside the observance of all ethical guidelines. The lesson plans and students' work were examined with the literature mentioned in Chapter 2. Analysis of handed-in lesson plans offered insights into set learning goals and pedagogical strategies that the academics opted to teach their selected topic (Kizito et al, 2022; Nijiku, 2016), while the students' work showcased the extent to which the planned lessons were grasped (Thomas, 2001). Simply put, evidence was received from both ends to determine whether CI was efficient in balancing knowing and doing. Moreover, lesson plans, as attested by Taylan (2016), Nesari and Heidari (2014), and Raval (2013), acted as a key to students' performance while at the same time providing information about academics' real practices and their decisions related to their students' learning. The findings derived from lesson documentation addressed both the main research question and the subsidiary questions 1, 2, 4, and 5. The following segment presents the next research tool.

### 3.4.2 Semi-structured Interviews

Defined as a loosely structured exploratory exchange that adheres to topical trajectories, semi-structured interviews are based on predefined open-ended questions that match with a study's objectives alongside follow-ups and probes to elucidate interviewees' discourse and their raised unpredictable themes and concepts (Hancock et al, 2007; Magaldi and Bergler, 2020). This showcases that although semi-structured interviews follow a predetermined guide, they offer flexibility for interviewers to tailor questions and probes according to the responses of the interviewees. This adaptability enables the extraction of detailed insights and abundant data. According to Duranti (2011), semi-structured interviews are similar to natural, uncensored dialogues with the unveiling of individual experiences, feelings and thought processes. Due to these benefits and the research ethics and politics of providing interviewees with more privilege and control over their interview as compared to structured interviews, this study considered it suitable to gauge academics' and professionals' viewpoints through the semi-structured interview approach.

As advised by Morgan (2014), prior to the occurrence of the semi-structured interview with the four academics and the two professionals, the preplanned open-ended questions were verified by an academic in the field of research methodology and a hired methodologist to check for language clarity and conciseness. The interview questions were then revised in accordance with the feedback received from the academic and the methodologist. For instance, the methodologist requested the researcher to use the word 'practical knowledge' instead of 'procedural knowledge' in the set questions for the professionals. Likewise, the academic demanded that the word 'procedural knowledge' be substituted by 'applied knowledge' in both question sets directed to the academics and professionals. The feedback was taken on board with the necessary corrections made. After this stage, the researcher took the revised questions to the thesis supervisor for content fit verification, that is, ensuring that the questions aligned with the study's objectives and for a second validation of language precision. Once the supervisor's approval was obtained, the interview questions for both academics and professionals were piloted to ensure the study's quality and efficiency (Gudmundsdottir and Brock-Utne, 2010).

On August 5<sup>h</sup>, 2023, the pilot interview was done with an academic in the field of English outside the region of the study in Mauritius. The interview lasted for 35 minutes, at the end of which the interviewee affirmed that the questions were ‘easy to understand’ and ‘very much direct’. Nonetheless, on August 6<sup>th</sup>, 2023, the academic’s interview was piloted again, but this time with an academic in Education outside the University of Macbeth (UOM), Malaysia. The interview lasted for 45 minutes, and the interviewee asserted that the dichotomous questions should be replaced with the think-back questions. The academics’ interview questions were revised per the feedback received from the piloted interviews. Moving to the piloted interview questions for the professionals, on December 26<sup>th</sup>, 2023, one professional in Educational Management in Malaysia was interviewed for around an hour about the assignment of an undergraduate submitted to him two weeks before. The professional discussed lengthily the market skills that he identified in the provided samples, and though he claimed to have understood all the questions clearly, he said that the question that focused on the ways students balance knowledge and doing should be reviewed to allow professionals to opine on the significance of having that balance. In Mauritius, the piloted interview with one professional in journalism occurred on December 29<sup>th</sup>, 2023 and lasted for around 45 minutes. The professional who was given an undergraduate participant’s work from the University of Hamlet (UOH) two weeks before the piloted interview, affirmed for introduction of semantic differential sub-questions that permit to give subjective and affective reactions about the studied phenomenon in the interview question list. The provided feedback from the professionals was considered.

On 29<sup>th</sup> December 2023, the two academics from the University of Macbeth were interviewed for around half an hour at their preferred location, that is, their office, while the two professionals in the sample size, that is, the instructional designer and the philosophy lecturer were interviewed for about an hour on the 30<sup>th</sup> December 2023 at their offices. The assignments of the undergraduate participants were sent to them a month before their scheduled interview. At the UOH, the two academics’ interviews occurred on January 15<sup>th</sup>, 2024, and one interview lasted for 40 minutes while the other one went for about an hour. The interviews happened at their office. The two professionals, that is, the editor and the screenwriter, were interviewed for

about an hour at their office on the same day. The students' works were submitted to both professionals a month ago. All the interviews were sound recorded with the participants' written consent. Findings from the semi-structured interviews with academics and professionals answered the core research question and the sub-questions 1,2, 3, and 5. The interview questions for both academics and professionals are presented in the appendix section.

### **3.4.3 Focus Group Discussion (FGD)**

By definition, FGD refers to conclave people based on their shared experiences to discuss particular topics of interest. It is a type of qualitative data technique in which undergraduate participants, in this study, five students from the course 'Instructional Design and Multimedia', five students from 'The Historical and Philosophical Foundations of Malaysian Education' course at the UOM and five students from the 'Introduction to Creative Writing' course and five students from the 'Understanding Drama' course at the UOH, were queried about their viewpoints, ideas, and beliefs regarding the undertaken research (Morgan, 2002; Gill et al, 2008). In total, four FGDs occurred.

Like the semi-structured interview questions, the FGD guide comprising some leading questions was piloted to two other undergraduates of Education at the UOM and two other undergraduates in English at the UOH who were classroom counterparts with the main undergraduate participants of the study. On August 1st, 2023, the piloted FGD occurred at the UOM's private library room for about half an hour. Throughout the discussion, it was discerned that the two undergraduates, as they later admitted, had difficulty in understanding some English words notably 'entirety', 'conceptual', and 'hurdles', which were then replaced by 'unified', 'theoretical', and 'challenges' for better understanding. The FGD was then revised and piloted for another time with two undergraduates in English at the UOH for half an hour on Zoom on the 2<sup>nd</sup> of August, 2023. Language was not a problem, but the two undergraduates appeared stressed and were mostly answering questions and prompts that they were asked about. Consequently, neutral ice-breakers and transition

questions were included in the guide to make the FGD sound conversational and less of a stressful questions-answers session.

The actual FGDs operated in a versatile manner, allowing students to voice out their perceptions freely and interact with each other regarding the same. On the 28<sup>th</sup> of December 2023, the two FGDs occurred at the UOM's library, while the two FGDs occurred at the UOH on the 16<sup>th</sup> of January 2024 at their library. The FGDs provided varying standpoints about the studied phenomenon and a shared comprehension of it. Clarification about non-verbal cues displayed by participants in FGD was registered (Liamputtong, 2010; Creswell, 2003). Being cost-effective, FGD was considered to be the propitious choice to access different perceptions and worldviews of the university participants dispersed over two geographical locations (Guba and Lincoln, 1994). As suggested by Kitzinger (1994), Johnson (1996), Bloor et al (2001), and Hohenthal et al (2015), the researcher of this study adopted a subtle role allowing the students to take the lead. However, the researcher intervened to ask prompting questions based on students' utterances or to redirect the discussion from time to time to the studied phenomenon. The researcher adopted a peripheral role and instead of note-taking the whole discussion, the FGD was sound recorded with the university students' permission so that eye contact could be maintained with the participants, and the act of note-taking did not remind them from time to time that they were being studied. Nonetheless, non-verbal cues were jotted down (Creswell, 2003; Germeten, 2013). The generated data from this research instrument answered the core research question and the sub-research questions 3,4, and 5. The following segment presents details about research sites.

### **3.5 RESEARCH SITES**

a) Research was conducted in two public universities, one in Malaysia and one in Mauritius. Providing their written consent to be part of the research, these two universities operate within the rigid disciplinary boundaries using the lecturing didactic pedagogy. Though both are the hardest to get into as they recruit only top students, continuous remarks about their students' unemployment status dominate the written and verbal press.

Referred to as the University of Macbeth (UOM) in this study, the public university where research was conducted in Malaysia is situated in the state of Selangor, and being a renowned one both nationally and globally, alongside locals, it comprises a great proportion of international students with excellent high-school scores. Students are interviewed on a one-to-one basis before getting admitted to the university. Disciplines are taught in silos using the lecturing mode. Despite being one of the most sought-after universities for undergraduate studies, the UOM did not find itself in the top five Malaysian Graduate Employability rankings (Talent Bank Group, 2023). This finding was replicated by the National Graduate Employability Index (2023), which analysed the employability of graduates of universities in Malaysia based on the provided votes of employers about graduates of which university they preferred to hire. Regrettably, the UOM did not figure in the list.

The second research site is known as the University of Hamlet (UOH) in this study and is a reputable, public university in Mauritius. Like the UOM, it recruits students with outstanding academic grades and lectures disciplines in silos with the prime focus of nailing standardised examinations. Though its graduates are evidenced to firmly grasp the academic knowledge imparted to them, recent research studies and government reports highlighted their lack of knowledge and employability skills required by the market. Local employers underscored the immediate need for the UOH to enhance its graduates' employability competencies, as its graduates currently possess a low employability profile. The students from the UOH are also frequently seen lashing out against the rigid functioning of their universities on the radio and social media. The following presents the participants' selection processes.

### **3.6 PARTICIPANT SELECTION**

Purposive sampling was employed to locate and select potential informants possessing rich information related to the study's interest. Five third-year students of the degree course 'Instructional Design and Multimedia', their lecturer (Lecturer A), and an instructional designer (Professional A) alongside five third-year students of the module 'Historical and Philosophical Foundations of Malaysian Education', their lecturer (Lecturer B), and a philosophy professor (Professional B) formed the sample

size at the UOM. Likewise, five third-year students of the course ‘Introduction to Creative Writing’, their lecturer (Lecturer C), an editor (Professional C) and five third-year students of the course ‘Understanding Drama’, their lecturer (Lecturer D), and a screenwriter (Professional D) formed the sample size at the UOH. Consent forms comprising every detail of the study were sent to the targeted subjects, and once their approvals were obtained, an email conversation followed by a meet-up was planned to further discuss the research, that is, the duration, the subject’s roles and the integration of teaching and learning processes to meet market demands. Social exchanges were in English, for both verbal and written purposes. The following section presents details about data analysis.

### **3.7 QUALITATIVE DATA ANALYSIS**

Qualitative data was scrutinised through Creswell's (2013) model of qualitative data analysis. An illustration of the model is as follows:

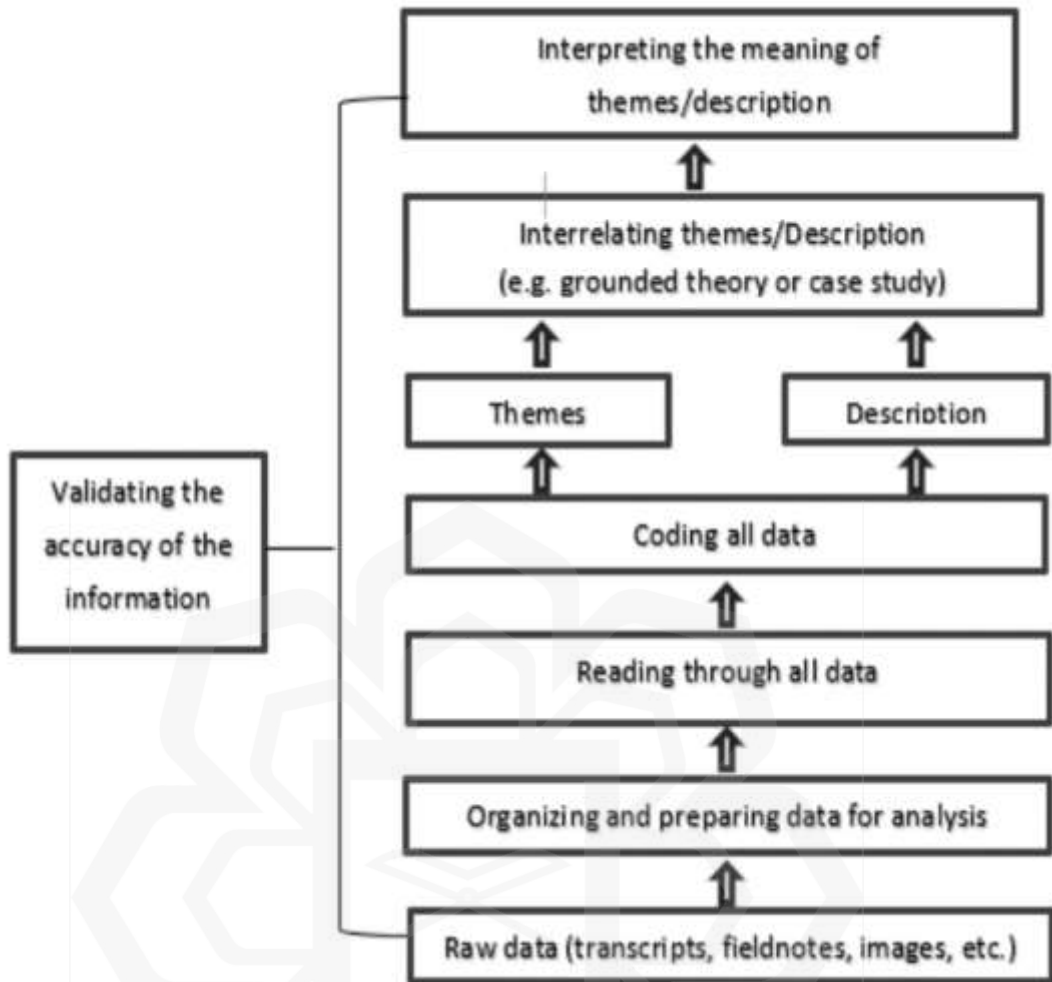


Illustration 3.3 Creswell's (2013) data analysis technique

The above illustration showcases the step-by-step approach that this study adopted in conducting qualitative data analysis. After collecting qualitative raw data in the initial stage, the data was then organized, prepared, and transcribed (including semi-structured interviews and focus group discussions) for analysis. The employed transcription template is presented in the following table:

Table 3.1 Transcription Template for the semi-structured interviews and FGDs

Discourse Unit	Researcher(R) Informant(I)	Transcription	Remarks
1	R	Good Morning	
2	(I)	Morning	

Notation conversion was used to organise symbols and abbreviations and nonverbal communication cues notably the ways the subjects listened, looked, moved, talked, and reacted throughout the interviews and the FGDs. Hence, this study adopted the following notation conversion:

Table 3.2 Notation Conversion employed in this study

<i>S/N</i>	<i>Symbol</i>	<i>Meaning</i>
<i>1</i>	DU	Discourse Unit
<i>2</i>	R	Researcher
<i>3</i>	I1	Informant One
<i>4</i>	...	Thinking pause
<i>5</i>	-	Hanging phrase
<i>6</i>	()	Nonverbal sounds (laughs/giggles/ frown)
<i>7</i>	Hh	Respondent's out of breath
<i>8</i>	.hh	Respondent's in breath
<i>9</i>	A	Respondent's emphasis
<i>10</i>	Wor-	A sharp cut-off
<i>11</i>	UOM	University of Macbeth
<i>12</i>	UOH	University of Hamlet

This step, according to Ahmad (2017), Khan (2008), and Easterby-Smith et al (2008), has as the objective of concurrently perusing transcribed data from qualitative data collection methods including the researcher’s observational jottings in the semi-structured interviews and FGDs notably body gestures, thinking pauses, and voice tone. Merriam and Tisdell (2016), and Creswell (2015), asserted that this step is indispensable to ease the analysis phase and is widely known in the literature as data reduction referring to the process of sorting out data through anecdotes, coding, or jettisoning irrelevant information. Creswell (2013) tagged this step as interactive given that it required researchers to study each transcript line by line to spotlight the main ideas, similarities, differences, and concerns in each. To Tuckman and Happer (2012), this step was a consistent comparative phase. It entailed the generation of keywords from identified main ideas and corroborated the same with evidence from respondents’ assertions. The frequencies of words used by informants need to be considered as well (Ahmad, 2017). Post this stage, reading through all the data is needed, the researcher of this study engaged herself in a constructive reflection on the meanings of the qualitative data at hand and wrote down interpretative notes in the forms of vignettes in the side margins. This is when the researcher of this study began recording her evaluation of the qualitative data. The next step entailed a review of data in the above-explained former steps about the field raw data to verify accuracy and to organise information under categories, that is, umbrella terms, based on what the collected raw data commonly assessed. This step is known as coding and prior organising data into categories, the researcher of the study, as attested by Lofland and Lofland (1995), contemplated on the following points:

Table 3.3 Points to be considered prior to coding

1. Under which broad category, does this piece of information fall?
2. What does the data in question stand for?
3. What is this particular data about?
4. Which topic is represented by this piece of data?

The above mentioned points in table 4 guided the researcher of the study to sort data into the right category and the following coding template was followed:

Table 3.4 Coding Template

1	2	3	4	5	6	7
<b>Data Collection tool</b> I.e. Interviews	<b>Super-ordinate</b> Key word Of the question	<b>Sub-ordinate</b> Main point from conversation	<b>Elaboration</b> Examples from verbal to support sub-ordinate	<b>Occurrence</b> Main ideas transferred as keyword(s) based on summary of sub-ordinate facts	<b>Frequency of occurrence</b>	<b>Ordering of the Discourse Unit</b>

After procuring the core ideas from each respondent's coding template, the researcher of this study proofread each one of them to identify common underlying patterns. The purpose of this was to create common signposts that regroup ideas expressing similar perspectives under them. These signposts were what are termed sub-themes in literature (Ahmad, 2017; Creswell, 2015). Core ideas falling under similar signposts were coloured differently from others to provide evidence of which and how signposts/sub-themes were generated. Also, this would aid anyone including the two raters in this study, willing to re-evaluate the raw data to see if a similar analysis is spawned. The following is an example of a theme-generated template:

Table 3.5 Theme generated template

<i>Interview/FGD/ Open-ended question 1</i>	<i>Student A, B...</i>
<i>Main Ideas</i>	<i>Sub-themes Themes</i>

Post-coding, description and theme was generated. Based on the examination of sub-themes and themes generated for each informant, a description of the finalized themes that appeared in the findings and discussion section occurred. The finalized themes were then analysed in connection to the literature and interconnected to other generated themes to have ancillary layers of complex analysis (Creswell, 2015). The final step was the interpretation of the meanings of the themes with literature.

The qualitative data analysis phase, following suggestions from Bryman (2008) and Creswell (2015), was done at the same time as the data collection phase. That is, the researcher of the study transcribed, analysed, categorised, coded, and generated sub-themes and themes as she went along. For example, after I completed the interview of one academic, I did not wait for the second one to transcribe and analyse the one that is already conducted. This detail is provided to make the analytical process transparent, particularly in mapping the methodological process of data transcription, interpretation and theme generation as open for any readers to perceive the analytical choices made in this study. The following presents details on ethical protocols that this study will observe.

### **3.8 ETHICAL CONSIDERATIONS**

Research ethics is defined as guidelines, protocols, or principles that govern the conduction of research alongside relationships between researcher and respondents (Creswell, 2014; Hopft, 2004; Gubrium et al, 2011). This study draws from the guided literature on research ethics from the work of Punch (1994), Gubrium et al (2011), Denzin and Lincoln (2011), Berg and Lune (2017), and Creswell (2014), in addressing ethical concerns at both a micro and macro stage. The following are ethical protocols that the above-mentioned scholars argued to be adhered to in any research including this study:

1. Informed consent is the mainspring of ethical research. The words ‘informed’ and ‘consents’ are the two key components of the term and each one demands careful consideration. In this study, informed consent were sought from the two universities’ chancellors, four academics, two professionals, and twenty students. The participants of this study were fully informed about what were required of them, how their given information were utilized, and any other potential penalties if there were any. They were anticipated to provide clear, active, written consent to participate in the study as well as acknowledge that they were aware of their rights to access their information and to revoke consent at any time. Obtaining their informed permission were thought of as a contract between them and me. The aspects ‘informed’ were intended to provide cogent elucidations on:

- The identity of the researcher (Who was conducting research?)
- The research’s purpose (Why was this research being conducted?)
- The type of information intended to be collected from research subjects
- The means of collecting data from respondents (The data collection tools)
- The anticipated dedication level of participants
- The utilization and storage of the collected data

Distinct consent forms were drafted in relation to the informants’ roles in this study. For example, academic consent forms were different from those of the professionals, students, and university chancellors. The designed consent forms for each informant’s role consisted of the above-mentioned bullet points but with a detailed elucidation of their specific roles. Each informant’s type of consent form was well-designed utilizing a writing style suitable for them with the avoidance of academic jargon. Consent was obtained through an opt-in method rather than an opt-out method, meaning participants actively chose to participate rather than being automatically included unless they declined. Permission for disseminating research findings to larger audiences including direct quotations from participants’ affirmations was sought alongside sound recording of the interviews and FGDs phases. Of course, the identitiesethi of the participants were kept hidden. Safeguarding the latter’s

anonymity is explicated in the second point. The informed consent form is attached in the appendix section.

## 2. Confidentiality and Anonymity

It was crucial that subjects' identities remained anonymous or secure, and the assurances went beyond only safeguarding their names to also cover refraining from sharing self-identifying remarks and materials. Maintaining the latter's anonymity and confidentiality guarded them from any negative actions post-research, if ever there are any (Gubrium et al, 2011; Punch, 2005). According to Fleming and Zegwaard (2018), the terms participants' anonymity and participants' confidentiality are sometimes interchangeably employed but they have different meanings. The former term refers to research where the identities of participants remain veiled from the researcher. However, the latter term refers to when researchers are aware of participants' identities but the latter's identities are kept hidden and their data are de-identified. For example, in this study, the identity of informants was known to the researcher of the study. Hence, confidentiality was offered in the following ways:

- Respondents' identity and the name and region of their workplaces were kept hidden. Pseudonyms were instead used.
- At any point in research, pictures and videos were taken. Interviews and FGDs, as mentioned above, were sound recorded but at no point in research, the audios were revealed. The recordings were used solely for transcription purposes and were stored in a password-protected folder divulged to no third parties.
- All gathered data was encoded and stored safely in password-protected folders. Personal identifiers were removed.

The above-listed points were stated in writing in informants' consent forms and were verbally stated to them for a second time before research to ensure informants' understanding and clarify any points if needed.

### 3. Confidence

The term ‘confidence’ covered two areas; firstly, it established a relation between respondents and researchers and secondly, it described this study’s contexts as they were so that they could be explored by any other researchers willing to do so. Trust relationships between respondents and researchers are perceived as cardinal to research success (Guillemin et al, 2018). Consequently, the following points were adhered to:

- I displayed personal trustworthy characteristic traits, like being, an attentive listener, empathetic, and respectful of subjects’ emotions, cultural sensitivity, and autonomy. However, I was reactionless regarding participants’ affirmations. I did not allow my preconceived judgements or opinions through my facial expressions to influence participants’ responses.
- No data gathered was manipulated or kept hidden for any ulterior motives. The gathered data, as it was, was represented and reported to the public. Fairness and reciprocity were maintained at all levels. Direct quotations from participants, analytical processes of data, and their interpretations by theoretical components were detailed in the findings and appendix sections. This information, as Giddings and Barbara (2009) mentioned, eased the suitability of the study, which indirectly contributed to the credibility of the research’s findings.

According to Resnik (2020), Zukauskas et al (2018), Anderson (2011), and Fouka and Mantzorou (2011), each research stage should be governed by ethical guidelines. The following is a demonstration of how this study complied with ethical protocols at each stage:

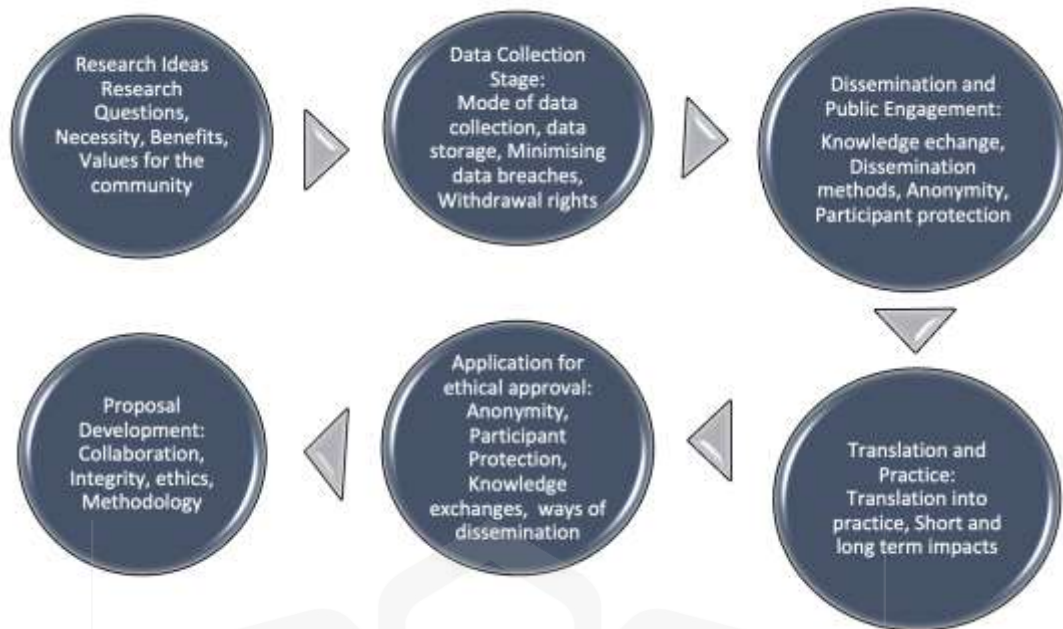


Illustration 3.4 Ethical protocols observed at each stage

The following segment presents details about trustworthiness.

### 3.9 TRUSTWORTHINESS OF THE STUDY

Trustworthiness in research refers to two components notably reliability which connotes the ideas of consistency and replicability and validity which addresses the accuracy, correctness, and truth of the collected data. Both concepts are required to evaluate or measure the quality of research undertaken (Cohen, 2011; Creswell, 2014; Ahmad, 2017). Simply put, trustworthiness can be stated to be the degree to which the recorded data on the studied topic is an accurate and comprehensible coverage of it in real. To assess the quality of the recorded data, trustworthiness in the form of credibility, transferability, dependability, and confirmability needs to be run (Guba and Lincoln, 1989; Ahmad, 2017; Korstjens and Moser, 2018; Stahl, 2020). The above-mentioned forms of trustworthiness are commonly applied to qualitative data forms and according to Guba and Lincoln (1989), they are equal to internal and external validity, credibility, and objectivity observed in quantitative research. Below

is a detailed explanation of how this study tested its trustworthiness using each of the four elements:

- Credibility (Internal and External Validity)

Credibility refers to the degree to which the research findings are congruent with reality (Denzin and Lincoln, 1994; Merriam, 1998). In this study, credibility was firstly achieved through the use of thick and rich narration of the studied phenomenon. That is, through the use of the probing technique, the researcher of this study ensured that informants provided all information and elucidated with examples the points they raised in the interviews, FGS, and the lesson plan analysis and that there was no new information from them on the studied topic to answer the stated research questions. Informants were encouraged to voice out their thoughts, concerns, and queries freely in a poised manner. The researcher of the study intended to reach the saturation phase, that is, arriving at a point where informants having said all have nothing new to add to the studied phenomenon. This is when the researcher assumed that sufficient information to answer the set research questions has been attained. Excerpts of verbatim transcripts of each data collection tool were attached in the appendix section to provide readers with details regarding the accuracy and impartiality of the research findings. The thick and rich description of the data made generalization possible and safeguarded the research findings from being labelled biased (Onwuegbuzie and Leech, 2007).

Secondly, as previously mentioned, details regarding the analytical processes of the qualitative data sets were elucidated and attached in the appendix section. For instance, screenshots of each step of qualitative data analysis were displayed alongside explicit information regarding theme generation. The screenshots served as proof that the researcher of the study did not allow her judgements as a human being to influence the analysis phase. Furthermore, the writing up of questions for each data collection phase was cross-checked by a methodologist, an academic in the field of Research Methodology and the thesis supervisor. The cross-checking phase is important because it evidenced that the questions were free from the 'Pink Elephant Bias', that is, free from the researcher of the study's prejudged beliefs, and other biases namely, axiological, gender, and culture.

Thirdly, as deemed salient by Creswell (2013), coding checks occurred, that is, apart from providing information regarding ways the researcher analysed data, created codes, organise the codes structurally, and the relationships drawn among them to produce themes/signposts were disclosed to readers of this study but primarily to the two raters who reviewed the thematic coding process to see if similar codes, themes/signposts were generated. This process is known as interrater reliability and is a significant tool to verify the validity of the data, that is, to check whether the researcher has truthfully and correctly coded and thematised data for interpretation. All the qualitative data alongside their procedural analytical details was handed in to the raters to check whether similar codes and themes were spawned. Post this task, the two raters were requested to fill in the following form:

Table 3.6 Raters' forms

Themes	Verbal Support	Agree	Disagree	Comments/Remarks
--------	----------------	-------	----------	------------------

Based on the forms, the percentage of agreements were calculated using the following formula:

$$\text{Inter - Rater Reliability} = \frac{\text{Total Number of Agreements X100}}{\text{Total Number of Responses}}$$

**University of Macbeth:**

Inter Rater 1:

Total number of Agreements =60

Total number of responses=62

$$IRI = \frac{60}{62} \times 100\%$$

$$IRI = 96.77\%$$

Inter Rater 2:

Total number of Agreements =61

Total number of responses=62

$$IR2 = \frac{61}{62} \times 100\%$$

$$IR2 = 98.38\%$$

**University of Hamlet:**

Inter Rater 1:

Total number of Agreements =58

Total number of responses=62

$$IR1 = \frac{58}{62} \times 100\%$$

$$IR1 = 93.54\%$$

Inter Rater 2:

Total number of Agreements =62

Total number of responses=62

$$IR2 = \frac{61}{62} \times 100\%$$

$$IR2 = 98.38\%$$

After receiving the two raters' percentages, an average inter-reliability test comprising both raters' percentage responses were done adhering to the following formula:

$$\text{Average Inter - Rater reliability} = \frac{\text{Rater 1} + \text{Rater 2}}{2}$$

### **University of Macbeth:**

$$\text{Average IR} = \frac{(96.77\%+98.38\%)}{2}$$

*Average Interrater Reliability=97.57%*

### **University of Hamlet:**

$$\text{Average IR} = \frac{(93.54\%+98.38\%)}{2}$$

*Average Interrater Reliability=95.96%*

The average rating of University of Macbeth is 97.57% while that of the University of Hamlet is 95.6% and this underscored a good reliability to proceed with the next chapter. The following segment presents details about transferability.

- Transferability (Reliability)

Transferability refers to the extent to which research findings can be generalised ecologically, that is to different contexts, temporally, that is to distinct periods, or the general population. (Creswell, 2015; Meriam, 1998; Shenton, 2004; Onwuegbuzie and Leech, 2007). According to Mabuza et al (2014), research findings can be generalised to the aforementioned generalizability types only if thick, rich, detailed descriptions of research contexts, findings, participants' selection, sampling size, and field experiences are provided. This study met the above criteria given that it explicitly elucidated each of the above-mentioned criteria. The data collection tools aimed to provide deep insights from varying angles on the studied topics. They did not aim to solely record the views of academics and professionals but final-year undergraduates as well. The subjects were purposefully chosen to elicit rich data regarding the set of research questions in Chapter 1. Consequently, a comprehensive picture of the actual topic in practice was painted. Moreover, given that this study studied two universities from two different continents, its emerging findings could be extended to other nations with similar cultural, linguistic, and geographical backgrounds. Also, the PDSA model that this study used, as underlined in Chapter 2, is evidenced to work

effectively in all geographical locations. The following section underscored the quality of transferability in this study by describing, contrasting, and relating information regarding highlighting emerging themes and discussing them with literature.

- Dependability (Reliability)

Dependability refers to the uniformity of research findings replicated in relatively similar settings (Ahmad, 2017). For instance, as explicated in the credibility segment, this study had two external raters who evaluated the step-by-step procedures taken to analyse data, interpret findings, and generate new theories to see if similar outcomes were produced from the collected raw data. As proposed by Ahmad (2017), Denzin (1978), and Nik Suryan et al (2008), this study, apart from having external raters, this study used two techniques notable triangulation and audit trail to strengthen the quality of dependability in it. Triangulation refers to using different sources of data to get different perspectives and a deeper understanding of the topic being studied. It is also a way to ensure the information collected is accurate and reliable by comparing data from different methods (Nik Suryan et al, 2008; Patton, 1999). An audit trail, on the other hand, provided information regarding methodical steps taken for data collection. It serves as a detailed trail of evidence that allows others to trace the researcher's processes, methods, and interpretations from the initial data collection to the conclusions. This transparency helps ensure the rigour, reliability, and validity of the research findings by enabling scrutiny and verification of the researcher's actions and reasoning throughout the research process.

This study disseminated all the taken procedures methodically in the following table.

Table 3.7 Trail of the Study

<b>September 2022</b>	<b>Research Proposal Submitted to the Faculty of Education, Curriculum Instruction and Development Department</b>
<b>October 2022</b>	Supervisor Allocation
<b>November 2022</b>	Chapter 1
<b>December</b>	Chapter 2
<b>January 2023</b>	Completing Chapter 2 (Writing the Conceptual Framework)
<b>February 2023</b>	Chapter 3 (Research Paradigm, Comparative multiple case studies, Discussion of Methods and Analysis)
<b>March 2023</b>	Completing Chapter 3
<b>April –May 2023</b>	Reviewing Chapters 1, 2 and 3
<b>June 2023</b>	Research Proposal Colloquium
<b>July 2023</b>	A 3 <sup>rd</sup> review of the three chapters in light of feedback received in the colloquium.
<b>August – December 2023</b>	<ul style="list-style-type: none"> <li>-Research occurring at the University of Macbeth and the University of Hamlet.</li> <li>- Lesson plan analysis, Academics and Professionals interviews, Students’ FGD</li> <li>- Data Transcription and Interpretation.</li> </ul>
<b>January- April 2024</b>	<ul style="list-style-type: none"> <li>-Data Analysis.</li> <li>-Writing Chapters 4 and 5</li> <li>-References</li> <li>-Appendices</li> </ul>
<b>May 2024</b>	<ul style="list-style-type: none"> <li>-Working on the feedback received from the main supervisor</li> <li>-Submission Intent submitted.</li> </ul>
<b>June 2024</b>	<ul style="list-style-type: none"> <li>-Submission Intent Approved.</li> <li>-Abstract Submitted &amp; Approved.</li> </ul>
<b>July 2024</b>	-Thesis Submitted.

- Confirmability (Objectivity)

Confirmability refers to the objectivity of research during data gathering and synthesis. It assesses the degree to which disseminated research findings are neutral and free from the researcher's conscious and unconscious coloured biases. It ensures that the disseminated findings are drawn from subjects' responses (Polit and Beck, 2012; Mabuza et al, 2014). To secure inter-subjectivity in this study, the researcher was well aware that the data collection and exploration should be grounded in subjects' responses and not on her personal beliefs and perspectives. Confirmability in this study was ensured through triangulation, double raters' verification, and an audit trail. According to Lincoln and Guba (1985), an audit trail was maintained by documenting decisions throughout the research process, including writing chapters, choosing sampling techniques, collecting data, conducting analysis, and reflecting on thoughts. This ensured that external auditors had a clear understanding of the research path that was taken. Moreover, the researcher jotted down her preconceived beliefs in a reflexive journal, but given that she was an outsider in the research context and did not meddle in the implementation phase of CI, that is, neither in creating integrated lesson plans nor present in its delivering phases, her interference was minimised. However, to unpack the interviews and FGDs from any personal assumptions, the researcher sound recorded the subjects so that interpretations could at any time be rechecked to ensure data accuracy and validity. The following encapsulates the chapter.

### **3.10 CHAPTER SUMMARY**

This chapter is split into nine segments. The interpretive research paradigm, comparative multiple case studies, data collection instruments, research sites, and participant selection are presented in the first, second, third, fourth, and fifth sections respectively. The sixth section provides details about the processes to analyse the qualitative findings while the seventh section highlights the observed ethical considerations of this study. The trustworthiness of the study is elucidated in the eighth section followed by an encapsulation of this chapter in the ninth section.

## **CHAPTER FOUR**

### **THE TALE**

#### **4.1 FINDINGS AND DISCUSSIONS**

This chapter aims to compare the effectiveness of CI at UOM and UOH, focusing on the integration of theoretical knowledge with practical application and the development of 21st-century skills. The chapter is structured into two major sections: (I) UOM, and (II) UOH, each comprising sub-sections on lesson plan analysis, semi-structured interviews with academics and professionals, and undergraduates' focus group discussions. This comparative analysis contributes to understanding the diverse implementation strategies and their outcomes.

The first section, 'The effectiveness of CI in balancing knowledge and doing,' examines how academics at UOM and UOH planned and revised their integrated lessons over fourteen weeks. This section highlights the teaching strategies used, evaluating CI's effectiveness in balancing theoretical and practical learning while developing 21st-century employability skills. For example, UOM's interdisciplinary projects effectively bridged theory and practice, enhancing student engagement. This segment answers the core research question and sub-research questions 1, 2 and 5.

The second section, 'University lecturers' experiences with CI,' delves into individual experiences, highlighting the strengths and limitations of CI as both an approach and an end product. In summary, UOM lecturers reported high engagement due to interdisciplinary projects, whereas UOH lecturers noted difficulties in integrating multidisciplinary perspectives. These insights underscore the varying impacts of CI strategies in different institutional contexts. This segment answers the sub-research questions 1,3, 5 and 6.

The third section, 'Undergraduates' experiences with CI', divulges the latter's perceptions of CI, especially their embraced benefits and encountered challenges. This segment answers the sub-research questions 4,5, and 6.

## **4.2 THE UNIVERSITY OF MACBETH (UOM)**

At the UOM, five final-year undergraduates from the degree course, ‘Instructional Design and Multimedia’, their lecturer (Lecturer A), and one Instructional Designer (Professional A), and five final-year undergraduates from the degree course ‘Historical and Philosophical Foundations of Malaysian Education’, their lecturer (Lecturer B), and one Philosophy Professor (Professional B) formed the sample size. Lecturer A preferred the interdisciplinary approach while Lecturer B opted for the multidisciplinary approach. The subjects’ journey with CI is elucidated below:

### **4.2.1 The Effectiveness of CI in Balancing Knowledge and Doing**

An examination of the planned integrated lesson plans for fourteen weeks reveals adherence to Bloom’s (1956) taxonomy. In connecting these findings, it is evident that UOM’s focus on interdisciplinary projects resulted in higher engagement and practical application, whereas UOH’s multidisciplinary approach highlighted challenges in maintaining cohesive student experiences across disciplines. This comparison underscores the need for tailored CI strategies to address specific institutional contexts. Excerpts from week 1 planned lessons are exemplified below:

Table 4.1 Instructional Design and Multimedia

Week 1: Topic	Learning Objectives	Teaching strategies	Activities	Integration
<p>What is instructional design? The role of an instructional designer</p>	<ul style="list-style-type: none"> <li>– Define instructional design</li> <li>– Identify the traits of instructional design.</li> <li>– Design learning objectives, learning activities, and assessments for a given classroom topic for mixed abilities students.</li> <li>– Analyse and evaluate the designed materials in light of the provided topic.</li> <li>– Create an instructional design and role-play a class situation.</li> </ul>	<ul style="list-style-type: none"> <li>– Questioning</li> <li>– Classroom Discussion</li> <li>– Group work</li> <li>– Role Play</li> </ul>	<p>Create an instructional design. Role-play the designed classroom situation.</p>	<p>Education, Psychology, Communication, English (Drama &amp; Dialogue writing), Design and Technology.</p>

Table 4.2 Historical and Philosophical Foundations of Malaysian Education

Week 1: Topic	Learning Objectives	Teaching strategies	Activities	Integration
<ul style="list-style-type: none"> <li>– Foundations of Education</li> <li>– What is philosophy?</li> <li>– What is the philosophy of Education?</li> <li>– What are the tools for doing philosophy?</li> </ul>	<ul style="list-style-type: none"> <li>– Understand the foundational types of education: from historical, social, religious, and philosophical perspectives.</li> <li>– Define philosophy of education, from the perspectives of diverse scholars.</li> <li>– Devise your understanding of the philosophy of education.</li> <li>– Revise your definition by discussing it with counterparts.</li> <li>– Identify the tools for doing philosophy.</li> <li>– Apply agreed definitions and tools to a provided educational problem.</li> <li>– Evaluate the application processes and effectiveness of agreed definitions and identified tools.</li> <li>– Formulate definitions and tools based on the applicability outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>– Questioning</li> <li>– Classroom Discussion</li> <li>– Group work</li> </ul>	<ul style="list-style-type: none"> <li>– Revision of textbook provided definition &amp; tools.</li> <li>– Solve an educational problem by applying the agreed definition and identified tools.</li> <li>– Reviewing own understanding based on the received outcomes.</li> </ul>	<p>History, Philosophy, Sociology, Religious Sciences, Communication, Curriculum studies.</p>

An analysis of the fourteen lessons for both courses at UOM and UOH reveals adherence to Bloom’s Taxonomy, with a focus on shifting from lower cognitive skills to higher-order thinking. However, UOM's approach emphasized practical applications through interdisciplinary projects, leading to higher student engagement and improved application of theoretical knowledge. Conversely, UOH faced challenges in maintaining student engagement across disciplines, suggesting a need for more integrated strategies. The precise verbs delineated the lesson process, its pedagogical methodologies and outcomes. This is showcased below:



Chart 4.1 Instructional Design and Multimedia

Week 1-3	Week 4-10	Week 8-14
<ul style="list-style-type: none"> <li>- What is instructional Design?</li> <li>- The role of an instructional designer?</li> <li>- The models</li> </ul> <p><u>Integrated Disciplines:</u> English, Psychology, Education, Design &amp; Technology, Communications.</p>	<ul style="list-style-type: none"> <li>- What is the gap?</li> <li>- Who are the learners?</li> <li>- What are the available resources?</li> <li>- What is the goal of the instruction?</li> </ul> <p><u>Integrated Disciplines:</u> Education, Curriculum Instruction &amp; Design, Design &amp; Technology, English.</p>	<ul style="list-style-type: none"> <li>- Instructional Design Project</li> <li>- Project cycle, Project team, Project scheduling.</li> <li>- Project Proposal Presentation</li> <li>- Design a storyboard</li> <li>- Development (Web and mobile application for learning)</li> <li>- Implementing the developed application.</li> </ul> <p><u>Integrated Disciplines:</u> English, Design &amp; Technology, Coding, Communications, Curriculum Design and Instructions, Statistics.</p>

Methodologies: Questioning, Pair work, Research-based, Classroom Discussion, Quiz	Methodologies: Immediate crisis to solve, Group work, Presentation, Quiz	Immediate crisis to solve, classroom discussion, role- playing, project-work.
---	---	---

Chart 4.1 summarizes the key elements of the fourteen-week lesson plans. For example, in Week 3, UOM’s lesson on instructional design integrated Bloom’s Taxonomy with practical applications through group projects, effectively bridging the gap between theory and practice. This approach significantly enhanced student engagement and application of theoretical knowledge.



Chart 4.2 Historical and Philosophical Foundation of Malaysian Education

Week 1-5	Week 6-8	Week 9-14
<ul style="list-style-type: none"> <li>– Foundations of education philosophical, social, and historical.</li> <li>– What is philosophy? What is the philosophy of education? What are the tools for doing philosophy?</li> <li>– Concept of knowledge and</li> </ul>	<ul style="list-style-type: none"> <li>– Historical foundations</li> <li>– Education before independence</li> <li>– Educational Reforms (1970s-present)</li> <li>– Assess the achievement of historical, theoretical, and institutional development of Muslim education and later-day decline, and the impact on its</li> </ul>	<ul style="list-style-type: none"> <li>– The National Education Philosophy in Malaysia</li> <li>– Contemporary and Future Education/ Sustainable Development Goals.</li> <li>– Evaluate theoretical knowledge application in practice.</li> <li>– Learn from the application processes and outcomes.</li> </ul>

<p>education.</p> <ul style="list-style-type: none"> <li>– Islamization of education.</li> <li>– Teacher Education/Teacher Leader</li> </ul> <p><u>Integrated Disciplines:</u> History, Sociology, Psychology, Politics, Religious Sciences, English, Morals, Teacher Leadership.</p>	<p>Western concepts and institutions for professional &amp; personal development</p> <ul style="list-style-type: none"> <li>– Cooperate with others and apply knowledge in a socially responsible manner for the progress of the nation and the Muslim community.</li> </ul> <p><u>Integrated Disciplines:</u> History, Sociology, Philosophy, Psychology, Religious, Politics Sciences, Information Management.</p>	<p><u>Integrated Disciplines:</u> Assessment and Evaluation, History, Sociology, Psychology, Politics, Religious Sciences, Morals, Management, Entrepreneurial.</p>
<p>Methodologies: Questioning, Group Work, Classroom Discussion, Simulated workplace situations to address, Quiz</p>	<p>Methodologies: Flip classroom, Classroom Discussion, Thinking-based, Project-based, Group work, Presentation.</p>	<p>Crossover learning, Pair work, Project-based, Thinking-Based, Questioning, Simulated workplace situations to address, Presentation.</p>

Reading the fourteen lesson plans and the two course outlines from Bloom’s (1956) Taxonomy and an extensive body of empirical studies notably that of Bressington et al (2018), Nicols et al (2017), Sailer et al (2021), and Aheisibwe et al (2021) on the aforesated taxonomy, reveals that both the lesson plans and the course outlines were designed in a hierarchical manner of cognitive learning where each hierarchy had active demands from the students. The active demands showcased that the set tangible activities, as previously proved by Guggsa and Cabela’s (2021) and Sailer et al’s (2021) research, formed an integral part of the constructive learning processes that guided the pupils in attaining learning goals. The course outlines and the lesson plans moved beyond comprehension and internalisation and focused on the applicability of taught knowledge in practice. This aligns with Dewey’s (1904/1974) argument propounded in his essay, ' The Relation of Theory to Practice in Education,' wherein

he affirmed the significance of integrating theory and practice in lessons to enhance educational value. In his support, numerous scholars notably Kramer (1998), Dorfan (1996), Hutchings (1990), and Mendenhall (2007) argued for the integration of the two learning modalities, that is theory and practice in lessons as their research evidenced that students learn best from direct practical involvements together with reflection and scrutinization of the enactment theory in practice. Clapton and Cree (2004) and Thompson (2000) affirmed that such classroom pedagogies prepared students for real-world practices. The learning objectives were tallied with cognitive complexities, that is, at each tier, students were exposed to theoretical knowledge and its application, which required them to engage in a cognitive level that was one step higher than their previously engaged one. This step, according to Piaget (1972), is essential to help students build new information in their cognitive repertoire and in connecting the newly built information with their prior knowledge to develop their schemas. From Vygotsky's (1978) perspective, quality learning occurs when students' ZPD is constantly in motion. This occurs through the exploration of works that are slightly ahead of their current cognition level and in the company of more knowledgeable others. Consequently, the course outlines and the lesson plans appeared starkly to centre on the student's existing academic level, their linear progression across the cognitive, affective, and psychomotor domains of learning, and the theoretical knowledge they needed to know for practical application. As stated by Sudhirta et al (2022), Pujawan et al (2022), Wiranata et al (2021), Kastianen et al (2018), Bloom (1956), and the IIIT's theories of CI (1989), this type of teaching and learning is meaningful as it positively impacts pupils' cognitive and socioemotional maturation.

Adopting Bloom's Taxonomy (1956) for designing integrated lessons allowed lecturers to shift from traditional lecturing to a constructivist approach, acting more as facilitators. While some critics argue this may dilute core disciplinary knowledge, the study found that interdisciplinary approaches at UOM enhanced students' critical thinking and problem-solving skills by providing real-world contexts, demonstrating the practical benefits of CI. This showcases their stance in perceiving knowledge as an intersubjective interpretation and not absolutism. The planned activities were mostly collaborative and dialogic, hence, corroborating Vygotsky's (1978) argument that

knowledge is built through social negotiation. Also, the lessons and course outline' design matched with the IIIT's (1989) five steps of CI, that is, (I) they both drew from other related disciplines to teach theoretical knowledge, (II) integrated the taught theoretical information in practice, (III) connected in-class experience with simulated situations at workplaces which eventually led to praxis knowledge that provided students with the opportunity to contemplate on the implementation of theories in practice and learned from both its processes and outcomes. Nordin and Dan (2002) affirmed that praxis knowledge, from the Islamic perspective, helped students to develop wholesomely with exemplary righteous characteristic traits. Both the lessons and the course outlines tapped into (IV) cross-curricula and values inculcation through the cognitive, psychomotor and affective domains of learning, wherein the students subtly learned values, professionalism, and attitudes through learning processes. For instance, lecturer A affirmed in his interview that through immediate crisis activities, his students demonstrated strong engagement in problem-solving, collaboration, decision-making, communication, leadership and accountability. Likewise, lecturer B asserted in his interview that his students displayed traits of tolerance, respect, responsibility, comprehension, problem-solving, digital, active listening and responsibility through pair/group and role-playing activities. This highlights the effectiveness of the IIIT's (1989) model of CI in shaping students' behavioural competencies for work. An inspection of the three domains of learning in the lessons and course outlines highlights their interest in assisting (V) insan kamil (tapping into the development of a complete person), with spiritual, informed reasoning, emotions, and bodily senses. What stands out is that, as suggested by the IIIT's (1989) model, the lessons and the course outlines permitted students to go beyond religious and secular sciences to establish a comprehensive understanding of theoretical knowledge in practice in their mental structures. This aligns with Niemela et al (2025) research, which evidenced that religious education is more than knowledge transfer as much as it is a formative, comprehensive process that shapes understanding, critical reasoning and values.

The translation of the fourteen preplanned lessons involved diverse instructional strategies tailored to each university's context. The sample included five final-year students from each course, selected based on willingness to participate and availability, which may introduce self-selection bias. Additionally, potential biases due to the instructors' differing levels of experience with CI should be considered. In their interviews, lecturer A and B admitted to regularly finding themselves in reflection-in-action situations wherein they had to put aside their preplanned content and focus on converting their students' confusions into valuable learning opportunities to help them better apply theories in practice. Post each lesson, both lecturers affirmed reflection-on-action to restructure the theoretical knowledge and its applications in the PDSA cycle for the upcoming class:

‘Students at UOM appreciated the practical focus of CI, stating that it helped them apply theoretical knowledge in real-world scenarios. One student remarked, ‘The activities made the theories come alive.’ Similarly, students at UOH found the multidisciplinary approach challenging but ultimately rewarding, as it encouraged them to think critically across different fields ...’ (Lecturer A).

‘Not everything goes by the lesson plans. I have to consider their performance in class and analyse that on the spot to see on which aspect they require more assistance. The lesson plans are mere structures, and students do make mistakes and instead of (err) jumping to the next planned exercise, I (err) help them to get the exercise at (err) hand right. I observed their performance and revised the next lessons (err) accordingly’ (Lecturer B).

An introspection of the immediate changes made in class alongside the revised ones for the following classes unveiled slight changes in theoretical content and pedagogical methodologies. Lecturers A’s and B’s reflection in and on actions follows Van Geel’s (2023) four steps, notably (I) Planning lessons, (II) Planning a lesson, (III) Teaching a lesson, (IV) Reflecting and evaluating the taught lesson to revise the coming lesson (s). According to Van Geel (2023), these four steps that lecturers A and B engaged in allowed them to differentiate instruction and conduct assessment for learning to better align existing and coming lessons to their students’ needs.

The added components in the lesson plans for each week are exemplified below:

### Week 1-3

Week 1: Focusing more on adv & disad of instructional designs/e-portfolio  
Week 2: Brainstorming the models (Mindmapping)  
Week 3: starbusting as formative assessment

### Week 4-7

Week 4: Culturally responsive teaching  
Week 5: Cooperative learning  
Week 6: Provides guidelines for classroom crisis situation.  
Week 7: Reflecting teaching strategies

### Week 8-14

Week 8-9: Visuals provided  
Week 10: Interface Design  
Week 11-13 Multimedia Evaluation  
Week 14: Questioning strategies

Chart 4.3 Changes in lecturer's A lesson plans

### Week 1- 5

Week 1-2: Concept of God, prophethood & human nature/ Research based

Week 3-4: Research based

### Week 6-8

Week 6: Teacher Education in Islam / Class Discussion

Week 7-8: The hierarchy of 7 M Teacher Leader

### Week 9-14

Week 9-11: The role of critical thinking in Islam

Week 12-14: Vernacula school systems

Chart 4.4 Changes in lecturer's B lesson plans

The above two charts and the affirmations of the lecturers in their interviews evidence that the latter were responsive to their students' learning needs and fulfilled them by breaking down the theoretical knowledge into more comprehensible segments. The lecturers' involvement in reflective practices showcases their ability to think on their feet and refashion their professional actions in search of viable solutions to reconceptualise students' uncertainties. Reflection proved to assist the lecturers in evaluating their teaching practices, discerning areas of amelioration, and tackling critical incidents effectively. The lecturers' engagement in reflection supports Schon's (1987), Roodman's (2010), and Zeichner's (2013) argument that instructors who frequently engage in reflection-in-action are likely to constantly revise their professional undertakings, demeanours, and attainments to embrace professional excellence. This finding contradicts Selvanathan et al's (2019) study of 114 university lecturers in Malaysia who were found to be reluctant to change their traditional pedagogies due to social exchanges and normative commitment factors. Meaningful

empirical investigations and practice-oriented university lecturers' teaching, coupled with international ruminations on university teaching and learning processes, are hence entailed. The lesson plans and course outlines' analysis revealed their adherence to the constructivist approach, favouring the student-centred pedagogies. Moving to the crux of this segment, which is how the translated integrated lesson plans balanced theoretical knowledge with application through the teaching and learning processes. This is typified below:

Table 4.3 Balancing theoretical knowledge with application in lecturer's A class

Week	Theoretical Knowledge	Application
1-3	<p>Introduction to Instructional Design</p> <p>Strengths &amp; limitations of Instructional Design</p> <p>The role of an instructional designer</p> <p>Instructional Design Models</p>	<p>Star busting</p> <p>Create an instructional Design (Elucidate and evaluate its comprised features)</p> <p>Storyboard</p> <p>Role-play the designed classroom situation.</p>
4-7	<p>Analysis:</p> <p>What is the gap? Who are the learners? What are the available resources? What is the goal of instruction?</p>	<p>e-portfolio</p> <p>Crisis classroom situations.</p> <p>Presentations</p>
8-14	<p>Instructional Design Project (Applying definitions, models, &amp; related theories in practice)</p> <p>Interface Design</p> <p>Multimedia Evaluations</p>	<p>Instructional Design Project</p> <p>Project Proposal Presentation</p> <p>Development (Web and mobile application for learning)</p> <p>– Implementing the developed application.</p>

Table 4.4 Balancing theoretical knowledge with application in lecturer's B class

Week	Theoretical Knowledge	Application
1-5	<p>Foundations of education philosophical, social, and historical.</p> <p>What is philosophy? What is the philosophy of education? What are the tools for doing philosophy?</p> <ul style="list-style-type: none"> <li>- Concept of God, Prophethood, Human Nature</li> <li>- Concept of knowledge and education.</li> <li>- Islamization of education.</li> <li>- Teacher Education/Teacher Leader</li> </ul>	<ul style="list-style-type: none"> <li>- Thought-provoking questions/thinking-based</li> <li>- Cross-over learning; Researching pictures, notes, and people's thoughts on Malaysian Education.</li> <li>- Writing reports.</li> </ul>
6-8	<p>Historical foundations</p> <ul style="list-style-type: none"> <li>- Education before independence</li> <li>- Educational Reforms (1970s-present)</li> <li>- Teacher Education in Islam</li> <li>- The hierarchy of 7M Teacher Leader</li> </ul>	<ul style="list-style-type: none"> <li>- 'Mock Court Scenario'- Critically assess the achievement &amp; later-day decline of Malaysian Education &amp; its impact on its Western concepts and institutions.</li> <li>- Cooperate with others and apply knowledge in a socially responsible manner for the progress of the nation and the Muslim community/ flipped classroom</li> <li>- Reflect on the outcomes/Informed perceptions of theories/ Group work</li> <li>- Presentation followed by classroom discussion.</li> </ul>
9-14	<p>The National Education Philosophy in Malaysia</p> <ul style="list-style-type: none"> <li>- The role of critical thinking in Islam</li> <li>- Contemporary and Future Education/ Sustainable Development Goals.</li> <li>- Vernacular school systems.</li> </ul>	<ul style="list-style-type: none"> <li>- Project-Based</li> <li>- Evaluate theoretical knowledge application in practice/ flipped classroom</li> <li>- Learn from the application processes and outcomes.</li> </ul>

A dissection of the lesson plans depicts that the theoretical knowledge, pedagogical methodologies, and set activities for the first eight weeks tally with Piaget's (1960) third stage of cognitive development, that is, the concrete operational stage, wherein engagement with concrete objects simulating real-world issues was presented. Tasks soliciting students to be involved in theoretical, abstract, practical, and counterfactual thinking were tackled from the ninth week. Contrary to Piaget (1960) who argued that pedagogical instructions for the concrete operational stage are best fitted for early elementary students, this study proved that age is not a determinant factor of which cognitive stage students should be in. The undergraduates in this study are above nineteen years old and their cognitive abilities and world comprehension, according to their lecturers, placed them in the third stage. This reveals that cognitive schemas are not shaped by age. In their respective interviews, lecturers A and B asserted the following:

'the students, at the beginning found difficulty in understanding concepts quickly lah. That's why there were those sudden changes on the spot lah. But our job is to slowly help them master those difficulties lah' (Lecturer A)

'...the students found it difficult to understand the abstract philosophical ideas in the beginning weeks. That was challenging for them (pause) ...yes by now, they understood for sure (smile)' (Lecturer B)

The affirmations underlined the understanding of complex concepts as a learning issue for undergraduates in both lecturers' classes. If read through the lenses of Piaget's (1960) four operational stages, the undergraduates found themselves in the second stage, that is, the preoperational stage, due to their inability to grasp new complex ideas and reasoning independently. That is, the students were unable to engage in the assimilation process in which they had to make sense of the newly presented knowledge in light of their pre-existing knowledge. This created a disbalance between their assimilation and accommodation processes, wherein they failed to modify their current schemas with the newly exposed knowledge. The imbalance led to a disequilibrium as the complex notions could not be organised in the student's current cognitive schemas. According to Piaget (1960), this was what made them confused or not understand. In another way, this evinces that the lecturers

planned lessons that were one step higher than the students' current cognitive level, as proposed by Bloom's (1956) taxonomy. The students' difficulties in mastering complex notions were their zones of proximal development, which required them to rely on their lecturers as the more knowledgeable others to reach their actual development zones, wherein they mastered the complex understanding and functioned independently (Vygotsky, 1978). This reveals that lecturers A and B, as the more knowledgeable others, enhanced their students' learning by further breaking down theoretical components and guiding outlines for practical application so that the latter could complete complex tasks that were slightly ahead of their existing cognitive level. Simply put, the presence of the more knowledgeable others proved to help the students reach the equilibration stage, wherein the latter experienced a sense of achievement in posing assimilation with accommodation. For instance, in Lecturer A's class, in the initial weeks, Lecturer A provided guided outlines for the students to effectively tackle the immediate crises, while Lecturer B was seen to add other subtopics in weeks 1 -5 to help her students grasp abstract philosophical concepts. Therefore, the above-delineated learning process supports Vygotsky's (1974) argument about the salient aspects of culture and language on individuals' cognitive development.

The set simulation activities were seen to help students in balancing newly learned theoretical knowledge with practical application. In the 'Instruction Design & Multimedia' module, after the inductive delineation of theoretical knowledge, lecturer A established simulated activities requiring his students to engage in application. For instance, after acquainting his students with the definition, features, advantages, disadvantages and theoretical models of instructional design, lecturer A first verified his students' mastery of the introduced knowledge through star busting and then proceeded with the creation of an instructional design. In the FGD, the students admitted the following:

'Student A: For me, the activities helped me to better understand the theories. The star-busting one helped me to become sure of myself, that yes, I understood the concepts well (meanwhile students C and E nodded). Student D: I think we all agree (giggling). Yeah Yeah (Student A, B, and C). our group created a storyboard, and for this, we had to create learning objectives, activities, assessments, err... errr.. (Student B) ensuring that they fit with our learners' needs, academic levels and the topic. We Chose the topic together. Student E: Yes, though the topic was our choice, (giggles), at some point, we were stuck with designing assessments and our lecturer helped us. He asked us some questions to make us think deeply and gave us some guidelines. We were then able to design different types of assessments, for the diagnostic one, we had some quizzes, for the formative one, we had a scavenger hunt and for the summative assessments, we had the group decision analysis. This helped us a lot (They all nodded smilingly). Student C: It was not only about creating an instructional design, we needed expertise in other areas as well, such as writing statements, short catchy phrases, (student B), ensuring the design is user-friendly, using the latest technology, (student C) and also by putting ourselves in the shoes of the students to kind of get an idea how they would process the information, which knowledge they might find confusing, and which features should be simplified. (Student A), the language had to be simple as well. Student D: Now we know how to create an instructional design, and (pointing at student C), he created another one alone, a storyboard, in his free time for the educational psychology module (Student B, D, and E) wow! Student C (shyly) This helped me lah to understand the models better especially when we introduced the design in class and did the role play. It gave an idea of how the design is welcomed in class and the points we need to work on more. (Student D), and also, the processes of it, (Student C), we also reflected on it, made some changes and re-present it to the class. This part is important lah as we learn what worked and what did not. Student B: We thought over the aspects that did not work, came up with actions that made those theoretical parts not working work (Student A: nods) and what did not work and we made those parts work became our critical points that we discussed in our final essays about the models, the theories we studied lah'.

Scanning of the above affirmations corroborates Drake's and Savage's (2016) argument that the unifying framework of CI that synergises interdisciplinary capabilities with applications makes it effective in integrating theories with practice. The students' affirmations starkly demonstrate their strong engagement in learning how to create an instructional design in their entirety through the interconnectedness of related disciplines and application of theoretical knowledge in concocting an instructional design, a task mirroring market demands in the field, thus, bridging the gap between in-class and out-of-class requirements. The enactment of theory in

practice led the students to experience praxis as they were actively involved in learning with a strong cognisance of the developmental process, particularly which aspects of the learned theories were successfully embodied in practice and which aspects failed. The emanated outcomes engaged them in reflective praxis wherein they contemplated actions that could make the failed theoretical parts function in their design. Ultimately, this step triggered new theories and gave them a clearer comprehension of the learned theories in their operational context. Their involvement in praxis and reflective praxis, from the IIIT's (1989) model of CI, embraced them with *insan kamil*, that is, the ability to function as a whole person vis-à-vis life situations. The Islamic perspective is seen to be corroborated by Freire (1970) and Fogarty (1991), who equally recognised the act of involving, implementing, practising, realising, and reflecting as catalysts fostering holistic development and well-being. This finding aligns with Lim et al's (2024) research, which employed a mixed-methods approach surveying 52 public health undergraduates, followed by 11 in-depth interviews of the latter on interdisciplinary learning, in a public Singaporean university. Half of the surveyed students frequently engaged in interdisciplinary learning by choice, while the majority had positive experiences with it. Like lecturer A's students, the students studied in Lim et al's (2024) study evidenced the capability of interdisciplinary teaching and learning to get them readied for real-world public health work. When viewed alongside lecturer A's students' experiences, a consistent theme emerges: interdisciplinary learning through the integration of varied knowledge areas, application of theory to practice, and development of twenty-first-century skills, particularly critical thinking and problem solving, encourages readiness for complex, real-world hurdles when soundly implemented.

Furthermore, the students were seen to build their schemas by relating to their environment. They were successful in comprehending learning objectives and activities, but were unable to devise assessments. According to Piaget (1960), this was due to their lack of knowledge of assessment designs, which created a disequilibrium in their current schemas. This disequilibrium, according to Vygotsky (1978), was the students' zone of proximal development, which was achieved with the help of lecturer A as the more knowledgeable other. Through the questioning technique and the provided guidelines as scaffolds, lecturer A fused new knowledge on assessment

designs into his students' pre-existing mental repertoire, helping them develop new cognitive structures that they were unfamiliar with before. The students experienced assimilation as post the intervention of lecturer A; they had no confusion in organising the new knowledge in their current schemas. On top, they demonstrated accommodation when they altered their pre-existing schemas to fit in the newly learned knowledge and ultimately designed three types of assessments across varying cognitive hierarchical levels. Hence, the students reached the equilibrium stage, and according to Vygotsky (1978), this was the students' zone of actual development as a balance between assimilation and accommodation was struck in the students' cognitive structure. Creating an instructional design was then part of their zone of actual development. The application of theoretical knowledge in practice defies Piaget's (1960) argument that knowledge is what students can do independently based on their individual experiences with their surroundings. The students failed to engage in the cognitive processing of information regarding assessments individually and collectively. They required the assistance of a more knowledgeable other. Nonetheless, the students' affirmations underscored that knowledge was what they could do in collaboration with their counterparts and instructors, and this was what developed their existing cognitive level of ability. This illustrates that cognitive development, as Vygotsky (1978) mentioned, is not universal and is succeeded by interactive learning and negotiation for both knowledge building and comprehension.

The scrutinization, systemization and synchronization of relevant disciplines to teach students how to build an instructional design permitted the latter to be involved in knowledge transfer, that is, developing the ability to identify, evaluate, and impart relevant knowledge across disciplines to tackle problems in their entirety, have a clearer overall understanding of disciplinary dependencies, and enhance their critical thinking, innovative, creative, cooperation, decision-making, problem-solving, digital and communication abilities. It can thus be said that the adopted interdisciplinary integrated framework permitted lecturer A not to restrain his instruction to one particular discipline, and by doing so, he in turn allowed his students to become proficient in the related disciplines. According to professional A, the students 'instructional design is what we look for in the field. They created a good one. This

assertion highlights the effectiveness of CI in balancing knowledge and doing to meet market demands. On top of that, professional A asserted the following:

‘I must say the skills that the students developed are very good. They demonstrated criticality, good reasoning I must say, and good planning. I enjoy their design. It is easy, user-friendly, well-written, well-presented, and well-illustrated (smiling). They worked collaboratively and were very understanding towards their friends. What I appreciate is how they manage the crises, you should have seen it, and this prepared them to work in the field. They discussed, analysed, allocated roles and responsibilities, made decisions, applied the decisions, thought back on the application, revised, that’s too within the assigned time...I had a look at their research proposal and final project, both were well-planned. They took feedback positively and implemented it in their final project which I must say is very detailed and insightful. You can read their e-portfolio, and you’ll understand better their growth... yes, yes, their project can be applied at work. As I say, it's well-planned and they’ve shared their designs on their websites. So, it’s working’

Professional A’s affirmations highlight that the pedagogies and activities employed by Lecturer A simulated the instructional design’s workplace environment to permit his students to apply the learned knowledge and ultimately build practice. Based on professional A’s evaluations, the students successfully demonstrated skills, notably organisation, reasoning, understanding, collaboration, responsibility, research, problem-solving, decision-making, reflection, and leadership skills, alongside working under pressure and completing assigned tasks within the allotted time. As delineated in the previous chapters, these skills are known as twenty-first-century skills, mirroring employability skills. The learning processes of the simulated realistic working scenarios can be said to have subtly inculcated those skills in the students. This supports Rogoff’s (1990) and Billett’s (2001) argument that knowledge is premised on practice within social and cultural environments, which solicit individuals to engage in critical contemplation of evidence-based outcomes to inform future practices. Likewise, the students’ engagement in reflecting, revising, and incorporating feedback in their work displayed their positive attitudes and determination to complete tasks. This shows that while balancing knowledge with application, CI also promoted desirable demeanours that are looked upon in the Malaysian workplace (The Twelfth Malaysian Plan, 2021-2025). According to professional A, the students’ produced outcomes are fit to be applied in the field, and

this starkly highlights the success of CI in bridging gaps between universities and market demands. It can thus be stated that by enabling Lecturer A to draw connections across relevant disciplines, CI promoted deep learning through the establishment of authentic links between the teaching of knowledge and cognitive skills and real-life working scenarios. Also, the intersection of knowledge and practice provided the students with a comprehensive understanding of simulated work task situations and experiences, particularly the ability to coherently shift from theoretical perceptions to practice, thereby rendering the know-how crucial. This finding aligns with the interdisciplinary research studies of Duer (2002), Staples (2005), and Vacca and Vacca (2005) and extends the line of theorising about how the processes of integrated knowledge and comprehension influence skillset developments and demeanours.

About the above, while commenting on his pedagogical methodologies, lecturer A affirmed the following:

‘When I was planning the lessons lah, I had in mind that the skills that the students would develop in my class should be enough to make them apply in any situation lah. Not all situations at the workplace can be taught lah (laughing), so lah, I ensure that with those life skills, they could function in multiple situations’

This assertion underscores Lecturer A’s determination to prepare his students to face the ever-changing working environments. Ultimately, as showcased above, professional A mentioned that the students’ work aligned with the market demands. In the second half of his interview, lecturer A affirmed that he ‘usually provides his own experiences, plus points, and challenges that I encountered at the workplace before joining academia’. Likewise, in their FGD, his students asserted the following:

‘...he shared his industry knowledge with us and this helped us a lot in planning our project and storyboard. We kind of know which step to avoid and which one to follow to reach the result (Student A). Student D: this also helped us to know what is awaiting us at the workplace. (Student B nods), and how prepared we should be. Student E: I agree with them (pointing at students A and D), that his industry knowledge and experiences were very beneficial when working on this module, we had to create several things, and this helped us to do the same in our future job lah. (Student A) I feel energetic like I feel like I need to complete those tasks (laughing) Student C: same (laughing) his

experiences were very helpful. It made the lessons more engaging and I wanted to know more so that I know better what to avoid or think of ways to complete the work successfully (smiling) we used to ask him how he did specific tasks and he always asked us what we would do in that specific case, and then what and why he did and learned from (pause) this help us understand the theories better lah.'

The above affirmations showcase that Lecturer A's anecdotal experiences of industry piqued his students' learning interest, engagement and the relevance of explored knowledge. His anecdotes on his past work experience enlightened his students' perceptions about the type of job responsibilities awaiting them at the workplace and permitted them to question and learn from his actions. When he asked his students what they would have done in that specific situation and then elucidated the reasons for his actions, he triggered deep thinking to appropriate new knowledge (Vygotsky, 1978). This eventually aided his students to have a clearer comprehension of the explored theoretical knowledge in practical situations. Lecturer A's teaching strategies can be said to reflect Dewey's (1988) argument that genuine knowledge is generated from the integration of thinking and doing, that is, by procuring the mind to critically contemplate the act. From Vygotsky's (1978) pragmatic constructivist discourse, the act of sharing, discussing, and reflecting on lecturer A's experiences boosts the students' mental development. That is when they grasped clearer perceptions as to what to desist from and what to choose for practical applications. This, therefore, underlines knowledge as a shared process of inquiry, negotiation and formation. This finding recalls Boud et al (1993), who also argued that learning becomes more meaningful, involving, and deep when lecturers cite their own industry experiences.

Moving to the second half of this segment, the module 'Historical and Philosophical Foundations of Malaysian Education', applied theoretical frameworks drawn from multiple disciplinary in practice through pedagogical strategies such as cross-over learning, mock-court scenarios, research/group, flipped classroom, inquiry, and project-based learning to balance knowledge with doing. As can be seen, these student-centred methods align with both Piaget's (1960) and Vygotsky's (1978) notion of active learning that taps into the development of various students'

intelligences while presenting a conducive structure for multidisciplinary learning. In the FGD, lecturer B's students affirmed the following:

'Student F: ...the strategies that she used lah, for example, the cross-over learning was very helpful to us. This activity helps us understand the theory we learned in class better ... (Student G: nodding) When we analysed the past educational and political documents and questioned lecturers in the fields of Philosophy, Sociology, Psychology, and Politics, their answers triggered many questions in our mind, we find ourselves with the need to sit down and think about the information we've got plus the theories she taught us in class. (Student F): This was hard. It was like we had to evaluate the answers we've got and the theory taught in class, they were very different lah from what we learn lah, and we even had a provocative discussion about this in class. The discussion cleared the doubts that we had, the theories were viewed differently across fields. (Student H), I agree with both (pointing at students F and G), (er), it's not only about analyzing the answers from the lecturers and what the theories say, my own experiences with the education system helped me to evaluate the theories better. When we did the research work on how Malaysians here see the education system, their answers were different about the system, and how it works, are different from the policies we learned in class. I understand them, I feel the same, I am in it (pause) and I get a better understanding of the system, the policies, the theories, they implement or not in practice lah through the mock-court debate. (Student I), the mock court forced us to read the historical materials again, which was boring (tongue out), but we needed to be prepared lah, to evaluate the Islamic part and the Western part and have our understanding lah. Our knowledge of Islam shaped our understanding of the theories and we debated along that line. (Student J), we also had to reflect on the crossover and the mock court activities afterwards to write a report. We also did the flipped classroom, we read and researched materials before and in class, the lecturer gave us live problems lah (all laughing), and we had to solve them. (Student H), they were like classroom scenarios with issues and we had to apply the philosophical theories to it. Sometimes we had to role-play classroom situations, and our friends' reactions would be like the students, and we needed to apply the theories in responding to them or doing classroom management lah. This was our project- we had to study the students' reactions lah and the theories lah and reflect upon them. Yes, yes, these were very helpful to better understand the effectiveness of the theories in classroom lah'

An inspection of the above affirmations showcases lecturer B's efforts in tailoring her lessons by the IIT's (1989) model of CI to balance philosophical knowledge with doing. As demanded by the five steps of the aforementioned model, lecturer B interlaced several disciplines, notably History, Psychology, Sociology, Politics, Assessment and Evaluation, Religion and Management to teach philosophical theories in their entirety. Lecturer B sustained theories with practice through the mentioned pedagogical activities in the above affirmations while permitting the students to draw from out-of-class experience to evaluate in-class learning theories. This enabled the students to not only engage with praxis through cross-disciplinary curricula but also interact with people, languages, cultures and values in their surroundings. From Vygotsky's (1978) perspective, the student's social and cultural interaction with their environment dynamically shaped their cognitive abilities, particularly reasoning. Ultimately, the students were seen to reflect upon the varied interpretations of the studied philosophical theories obtained from academicians in the fields of Politics, Psychology, History and Sociology to make sense of them. Nonetheless, their inability to cogitate as to how to assimilate and accommodate the new perspectives in their pre-existing mental schemas disrupted their equilibria and placed them in their zones of proximal development. Lecturer B in the 'provocative discussion' acted as the more knowledgeable other to help the students reach their actual developmental stage, that is, grasping a firm understanding of how the theories were perceived through different lenses. Additionally, the students noted differences between in-class content, namely Malaysian education policies and out-of-class practice. The in-class policies did not reflect the out-of-class realities which they experienced before. Their pre-existing knowledge, that is, their conceptual maps, mental modes, and experiences, tallied with their research findings about soliciting the views of the public on Malaysian educational policies and conflicted with the policies taught in class. The gap between in-class studied policies and their pre-existing knowledge and research findings provided them with a clearer understanding of the evaluated policies and their accomplishable aspects in practice. Their comprehension therefore bridges the gap between the new knowledge and their current knowledge, helping them to reach the equilibrium stage.

Moreover, the mock court debate activity propelled the students to engage in deep reading to analyse the policies from both Islamic and Western viewpoints before drawing their understanding. In her interview, lecturer B asserted the following:

‘The Islamic part, the concept of God and prophecy was added to make the students understand philosophical thoughts. I realized that at some point, the students, you know, have strong Islamic backgrounds, so I draw from that knowledge to make them better understand the philosophical teachings that were drawn from several academic branches, Sociology, History, Politics, Psychology and the students evaluated them with the Islamic philosophy for their understanding’.

The above assertion reveals that Islamic philosophical thoughts were added as a scaffold to help students better comprehend and evaluate Western philosophical theories. Gauging philosophical teachings from both the Islamic and Western perspectives mirror the spirit of Islamic education that goes beyond all sciences, whether religious or secular, to establish a comprehensive understanding of the philosophical concepts. As Al-Ghazali (Orak, 2016) mentioned, knowledge in Islam is not ‘mental gymnastics’; contrarily, it is an act of involvement in reality and a process of existential metamorphosis wherein individuals embrace maturity, wisdom and spiritual contentment. Thus, it can be said that, like the constructivist theory of learning, the Islamic perspective of education favours practical application. Alongside the IIT’s (1989) theory of CI, Piaget’s (1960) and Vygotsky’s (1978) constructivist thoughts, Al-Ghazali stresses praxis, particularly how out-of-class experiences prepare students to critically engage with in-class content. To them, the prior experiences create paradigms in the minds that, as asserted by Piaget (1960) and Vygotsky (1978), receive and represent new knowledge in connection with the pre-existing knowledge. Assimilation and accommodation, or mastering the zone of proximal development, are what help individuals in escalating from lower to higher-order thinking skills. The students read the philosophical theories through their empirically grounded research findings, as well as existing knowledge of Islam. This relates to Vygotsky’s (1978) argument about learning being culturally dependent, that is, people from different cultural settings learn differently. The students’ religious and cultural background influences their learning of philosophical theories. Professional B asserted the following:

'The students' written reports were reflective. They demonstrated an understanding of the different philosophical theories across different disciplines. One thing is that the connection between the disciplines was quite blurred, they analysed concepts from different fields and made their very good conclusions (nodding) but a connection between those fields was absent. But, their project work flipped classroom, and research work shows their in-depth preparation, working within the time given, ability to solve problems instantly, work collaboratively, respecting others' ideas, determination to seek truths, evaluating those truths with textbook policies (pause) their arguments for the mock-court debate were well founded in empirical evidence. They wrote them in line with the evidence they've got and evaluated that evidence in their arguments. I would say they were successful in not swallowing everything that the textbook tells them, they reasoned... they also demonstrated classroom management skills and they also engaged in assessment and evaluation through role-playing and flipped classroom tasks. They did assessments for and as learning and acted promptly on the answers received. I believe this teaching approach helped them for the reality outside their class (smiling), they were able to apply the theories in the activities and reflect on the outcomes.

The above attestation showcases that by the end of the fourteen weeks, the students were successful in developing weighty arguments which interweaved theory, practice and reflection while incorporating diverse perspectives from several other disciplines in treating philosophical concepts. However, they were unsuccessful in connecting the different perspectives into the presentation of a single unit. This implied the need for lecturer B, as the more knowledgeable other, to have assisted the process by proposing additional lines that might have followed to forge that missing connection. The absence of this step demonstrates that establishing connections among the varied perspectives remained in the student's zone of proximal development at the end of the fourteen weeks. This finding contrasts with that of Hero et al (2019), which, like lecturer B, employed the multidisciplinary approach to integrate theory and practice. Like lecturer B, the 74 final year undergraduates working on a mandatory multidisciplinary innovative project at the University of Applied Sciences, Finland, drew from out-of-class data to evaluate in-class theories. However, as opposed to lecturer B's students, Hero et al (2019), showcased that the 74 students were successful in connecting varied related subject knowledge, comprehending the steps in the innovation process, resolving conflicts, tackling unexpected situations, and developing personal traits like patience and tolerance, and

professional skill sets notably business, social, leadership, creativity and innovation. The students were happy instead of confused, while their lecturer considered the multidisciplinary approach an effective pedagogy, helping her connect her teaching to real-world problem-solving and skill development. A critical reading of these two contrasting findings highlights that if the multidisciplinary approach can improve students' ability to integrate theory with practice, its success relies heavily on the quality of facilitation and scaffolding provided by the academic. Therefore, it can be stated that multidisciplinary teaching is not inherently transformative as its success depends on intentional pedagogical methods that support students in bridging disciplinary divides.

Nonetheless, the multidisciplinary approach proved to be engaging throughout the learning process. It built critical reasoning by propelling the students to read deeper, question textbook knowledge with empirically grounded research shreds of evidence and evaluate philosophical concepts from varied perspectives. Indirectly, it better equipped the students to analyse textbook knowledge in practice and develop a comprehensive and informed understanding of it. Additionally, the multidisciplinary approach permitted the students to experience simulated workplace situations, notably the flipped classroom, role-playing classroom situations and project work, which, in essence, propelled the integration of varied disciplinary perspectives in solving complex, impromptu problems. The multidisciplinary approach can thus be said to have trained the students to critically evaluate problems from varying angles and think on their feet, as also evidenced by Andrew et al's (2018) and Prasad's (2024) research. Also, the latter demonstrated strong engagement in written and verbal communication, collaboration, teamwork, and respect. As mentioned by professional B himself, the multidisciplinary approach prepared the students for the reality outside, that is, employment. The student's engagement in the above skills is what the Malaysian workforce is currently seeking (The Twelfth Malaysian Plan, 2021-2025).

In conclusion, the comparison between UOM and UOH reveals that effective CI implementation requires a balance between theoretical and practical elements, adequate resources, and seamless integration of multidisciplinary perspectives. These findings suggest that universities should tailor their CI approaches to their specific contexts to maximise student outcomes and prepare graduates for the modern workforce. The following presents the latter's experiences with CI.

#### **4.2.2 University Lecturers' Experiences with CI**

Both lecturers A and B from the University of Macbeth were observed to have different experiences with CI. They both listed challenges that they grappled with throughout. Their attestations are as follows:

'Lecturer A: I had a pleasant experience with CI. To be honest, I love connecting my industry knowledge with textbook content lah. I want my students to get the feel of what is waiting for them lah...Challenges I would say is this teaching method is time-consuming lah, you don't go with what has already been planned before, changes need to be made after each lesson, both in content and strategies lah. This is tiring (laughing), Also, in terms of assessments, yes we planned industry-like activities to get the students the feel of the workplace but the final assessments are not me who decide, it's the university and it is very traditional, sitting and writing questions in two hours. The practical side is omitted completely and they test the students' memory skills lah. But, the students did well on the written exams. They scored good marks. Yes, I can continue, I am willing to (laughing) but I also have to follow the university criteria lah. Otherwise, I will be in trouble (laughing)...no, I did not find it a problem to research other related disciplines while planning, yes it took more time but I considered it as part of my job. This wasn't a problem for me. I like it, I also learned lah (laughing)'.

'Lecturer B: I would say I learned a lot from this teaching method. It is satisfying. However, I believe that it is not the university's job to teach market skills. University is meant to teach only rudimentary knowledge and it is the employers' responsibility to train their staff. Else, instead of academics, we can ask people in the industry to give lectures. Planning the lessons and time were the major constraints. I had to find time to research activities aligning with the content, and how different perspectives can be brought in, and I must say, my plan had to be reviewed mostly weekly and I had to complete everything within the fourteen weeks. If the university asks me to teach like this, I have no

problem but the university sometimes assigns courses to the end minute, and the end-minute courses cannot be planned extensively, researching for activities or connecting disciplines. It's hard and we also have other research responsibilities... if we teach like this, what about the assessments? Will the university move from written standardized testing to the types of activities I've planned throughout the class? (raising a brow) No, the students had to pass the traditional assessments. That's the gap... Yes, all of them passed the module, I am not saying that this teaching method is not good, it is, it helped the students gain good grades, but is it the job of lecturers to train students for work? Otherwise, the students could go to industry directly...'

Lecturer A's and B's affirmations showcase that though they both admitted to having fulfilling experiences with CI, their perceptions of it vary largely. To recall, lecturer A used the interdisciplinary approach while lecturer B opted for the multidisciplinary approach. If lecturer A appears to be content in adhering to a curriculum that bridges the gap between industry and textbook content and perceives it to be his responsibility to prepare his students for work, lecturer B, on the other hand, repudiates preparing her students for employment as part of her job. Her assertion appears to be confounding as though she admitted to having a 'satisfying experience' with CI which she 'had no problem' continuing to use in the future if the university asks her to and that this teaching method made her 'learned a lot', and 'helped the students in gaining good grades', she displayed her discontentment in embracing the responsibility to transcend disciplinary divides to prepare her students for work. The question is, if the use of CI has proven to have promoted lecturer B's professional growth, helping her students to produce good grades, and tapping into the latter's twenty-first-century/employability skills, then, what are the underlying factors that make lecturer B so repugnant towards adopting the method to prepare students for work? Her understanding of the university's role in imparting solely 'rudimentary knowledge' contradicts the Malaysian Educational Blueprint (2021-2025) and the Ministry of Higher Education (2023), which anticipate universities going beyond the transfer of 'rudimentary knowledge' and promoting graduate work readiness. The HE policies in Malaysia do not envisage universities transferring only basic knowledge to students. A perusal of Lecturer B's attestation implicates the redefinition of the role of a university lecturer and the retraining of the latter in Malaysia. Logistical factors, time constraints, research, end-of-course allocation and the need to constantly review

the planned content, pedagogical methodologies and activities were the other identified concerns by both lecturers. The high level of pedagogical skills and expertise required from the lecturers to offer necessary resourcing support, improvement and acceleration was observed to be 'tiring' for them. According to Cathcart (1998), CI shifts lecturers from a position of authority to one of empowerment, and the latter might find this paradigm shift too demanding and excruciating. This mirrors Yasin and Liu's (2016) and Yacob et al (2012) research, which equally found some Malaysian lecturers from the University Malaysia Terengganu and University Kebangsaan Malaysia to be reluctant to use CI in HE for the similar above-stated reasons. Lecturers' unwillingness to embrace CI in HE is seen to transcend geographical locations as though the Italian government (Brogger, 2014), and the Australian government (Harris-Reeves and Mahoney, 2017), vouched for the integrated teaching practices in HE given producing work-ready graduates, lecturers, being the actors of change and representatives of the microstructures, refuse to be passive repositories of it. Nonetheless, Pharo et al (2012) present a contrasting case from an Australian university where eight academicians from different disciplines, namely marine sciences, business and education, voluntarily collaborated and integrated their teaching to expose their students to multiple knowledge systems. They happily co-taught and co-developed teaching and learning resources across their units. Though their students were highly satisfied, the academics, due to time pressures and a lack of funding, could not continue with integrated practices. The contrasting cases highlight that while lecturer motivation is crucial, it is insufficient for sustaining CI in HE. Structural and institutional supports such as facilitators, funding, time, and administrative flexibility are also required. The disinclination observed in Malaysian contexts (Yasin & Liu, 2016; Yacob et al., 2012) and mirrored in global contexts like Italy and Australia (Brogger, 2014; Harris-Reeves & Mahoney, 2017) discloses that policy-level endorsement does not impetuously lead to classroom-level adoption. Conversely, the case by Pharo et al. (2012) demonstrates that even when lecturers are willing and students benefit, a lack of systemic support undermines long-term implementation. Therefore, successful and sustainable integrated teaching requires a dual approach: institutions must cultivate a culture of collaboration while also providing the practical resources needed to turn integrated intentions into enduring practice.

Moreover, tying closely their integrated pedagogies with summative assessments was a major constraint that both lecturers faced throughout the research. According to both, their practices and the summative assessments set by their university were two independent, unconnected entities as compared to their formative assessments, which were interactively designed in connection with CI. Put simply, the set summative assessments were not in service to their integrated pedagogies. As stated by Lecturer A, the traditional assessments were restricted to standardised written essays, which, according to Kohl (2017), tap into objective measurement. According to Bailey (1999) and Dikli (2003), since the traditional assessments measure what students can do in one shot within the assigned time, the grades received cannot delineate the latter's progression, particularly their mastery of higher-order thinking skills and twenty-first-century competencies, which are too subjective to be evaluated through conventional measures. As mentioned by the lecturer A himself, the traditional summative assessments focus on students' ability to recall knowledge, which is the lower strata of Bloom's (1956) taxonomy. This showcases that the set summative assessments format by the UOM contradicts the HE policies and the market's requirement, which stress mostly the application of knowledge in real life, the highest level of Bloom's (1956) taxonomy (MOHE, 2023; Malaysian Educational Blueprint, 2021-2025; Malaysian Employers Forum, 2022). Implication thus includes the centrality of substituting traditional assessments with authentic ones, which permits the application of knowledge and skills in simulated or real-life settings. Authentic assessment from the perspective of Kohl (2017), Moria et al (2017), and Wylie and Lyon (2020) effectively measures intellectual capacity as it engages students in realistic circumstances that necessitate the latter to showcase their comprehension, logical reasoning, and problem-solving skills in addressing archetypal exercises. The benefits of students' involvement in authentic tasks were highlighted in the previous section. Therefore, it can be stated that authentic assessment values both the learning processes and results. Dewey (1938) argues that authentic exercises that encompass memorisation, soliciting students to evaluate and contemplate knowledge, glue informed knowledge in the latter's cognitive structures. That is, authentic exercises save students from memorising information, and this explains why both lecturers' students scored good grades despite the gap between their integrated

pedagogies and the set summative assessments. This implies the need for the UOM to revamp its assessment formats. The following presents students' experiences with CI.

#### 4.2.3 Students' Experiences with CI

Like lecturers A and B, the students from both courses were observed to have contrasting experiences with CI. Their assertions are as follows:

'Student C: (err...err...smiling) I love this teaching method, (pointing to his friends), we learned different things lah, useful lah, the only thing is lah his slides are too wordy. When he explains, I only listen to him lah (giggling), I don't read the slides (laughing). Student E: Actually, there's no need to read the slides, he already explains everything in practice, and we learn from our practice too, the practice covers everything, and for me, this is what I like, there's no need to remember all the slides, what we learn in class is enough. Student A: I agree with her (pointing at student E), his way of teaching taught us a lot, sometimes it's boring to stay in a class where the lecturer lah keeps on talking and talking, and we feel sleepy (giggling), but this one I like how he made us do things lah, we learn how to work out projects, solve situations in a team, and that's too within specific time frames...yes (nodding), we learn how to solve problems, how to work together, how to create instructional design, so yeah, he kind of gives us a lot of exposure of what is waiting for us at the workplace. Student B: I agree also, and when he gives his example when he was working in industries, this makes us reflect and know better what we should do, what kinds of arguments we should put in our projects, and we also learn from that. For me, yes, I would like to continue learning this way, it's more hard work, because (err...err), now we also need to participate in class, but we learn. Student E: I feel that I learned a lot, in terms of writing, and speaking (nodding), I got the chance to practice my speaking, and working together, and mostly what I enjoyed was I learned better when I did my research and discussed with them. So yeah, tiring but we learn, that's important. Student A and B (nodded in agreement)' - Lecturer A's students.

'Student G: I don't mind continuing with this teaching method but I think- an- she should- explain well, like she put different perspectives on the table- but we failed- in connecting the different perspectives. This was very confusing for me. Student I: Actually, I agree with her (pointing at student G), we understood the purpose of her teaching using the varied perspectives but it would have been great if we could understand lah, how the different perspectives match, because, it was confusing as each perspective had a different approach. But overall, I

like this method, because I get to know lah, how the topics are viewed differently in different courses, and how different people have different opinions. I liked the field activities, researching, and interviewing, this was interesting, but only that connection part was missing. Student F: For me, I could draw the connections, it was difficult, but I sat with it for hours and hours and researched online a lot. I could see how they connect and why some aspects were viewed differently, based on my research, specific parts overlap because every course had a different line of thinking, but in general, yes, I learned a lot, I felt forced lah to learn (giggling), to participate in class and I like how she allowed us to judge the material with our Islamic knowledge. Student J: hmm, agree, even I liked that part the most, initially, it was quite confusing to understand the Western theories, in Malaysia, we've been learning different things lah, but she allowed us to use our Islamic knowledge to evaluate the theories, I understood better the western theories. And I also (pointing at student D), liked the field activities lah, that was interesting, I was happy doing the interviewing, and the flip classroom lah, this gave us the feel of being a teacher. Student E: And the activities lah, made me more involved in the course, and I felt satisfied lah when I finally was able to stand and teach in front of my friends. It gives me confidence, and when it comes to the connection, I think she wants us to make it on our own. I am happy to continue with the method (smiling)' Lecturer B's students.

Though the above affirmations underscore lecturers A's and B's students' willingness to continue learning through integrated approaches, the challenges related to teaching and learning that they faced throughout research are also unveiled. Lecturer A's students affirmed having rewarding learning experiences with the interdisciplinary approach as the experiential activities saved them from knowledge memorisation and developed their twenty-first-century competencies. This finding thus evidences that CI builds students' appreciation of learning by rendering theoretical knowledge authentic and meaningful, increasing involvement, motivation and creativity while concomitantly developing transferable skills. The 'too wordy slides' of lecturer A appeared to be better understood by his students through the practical application of the same, showcasing that lecturer A's integrated teaching style resonates with Dewey's (1938) and Vygotsky's (1978) idea about classrooms being representatives of real-life scenarios for students to concoct and negotiate their meanings, reflect and problem-solve with their counterparts as a community. Also, the willingness of the students to embrace the hard work that CI anticipates from them highlights their engagement in the self-actualisation stage, wherein they desire to exploit new learning opportunities to reach their full potential (Maslow, 1943). CI can

hence be said to have intrinsically motivated the students to take ownership of their learning. This finding tallies with that of Karimova's and Rutti's (2018) study, which equally underlined the combination of interdisciplinary and experiential teaching as impactful and enriching for learners' educational experience. Like lecturer A's students, the undergraduates of Entrepreneurship and Print online media production in Karimova's and Rutti's research expressed high appreciation for the authentic, practice-based learning while developing interdisciplinary competencies essential for the existing workforce. Thus, teaching interdisciplinary content experientially significantly improves undergraduates' readiness for professional environments, making this a promising direction for curriculum design in HE.

Unlike Lecturer A's students, Lecturer B's students encountered difficulties in making sense of the various disciplinary perspectives of the explored topics as a unit. Their assertions were also supported by professional B, who equally remarked that the students failed in connecting the various disciplinary perspectives in their tasks, though they were able to critically dissect each. This, therefore, raises the question as to how far Lecturer B has understood the multidisciplinary concept. By not acting as the more knowledgeable other in helping her students to see the connections among the varied disciplinary perspectives, lecturer B can be stated to have allowed her students to experience disequilibrium in their mental structures (Piaget, 1960), or as Vygotsky (1978) claimed, put them in the zone of proximal development. Lecturer B's lack of knowledge of the multidisciplinary approach was hence the core hurdle hindering integration. A profound mastery of related disciplinary content and of methodologies of teaching multidisciplinary content to students is hence implicated. In contrast to the other students, student F appeared to have allowed the challenges in his existing schemas to trigger further learning as he invested efforts in identifying the connections. This implies that CI promotes ownership and interest in learning. Additionally, it was observed that the students' confusion turned into happiness when Lecturer B drew from Islamic knowledge in reading Western theories. This shift was due to their ability to connect the newly learned secular theories with their prior Islamic knowledge in their mental schemas. Simply put, the student's prior Islamic knowledge could be said to have positively influenced their acquisition of Western theories and the capacity to apply higher-order reasoning in evaluating them. The

tangible pedagogical tools were also evidenced to have sustained the students' interest in the lessons, which sought their active participation and gradually moved them towards functional musings. These activities, as evidenced in Kapur's (2018) and Akpan et al's (2020) study, permitted the students to feel fulfilled and 'confident' as they made learning constructive, meaningful and relevant to the students' realities, wherein the latter's life competencies were tapped into through their interaction with the physical and immaterial world. The activities were visibly seen to give students the feel of what was awaiting them outside the university classroom. It could be stated that the student-led teaching approach was what made the students happy to continue with this teaching approach. The following presents information about the second studied research site, the UOH.

#### **4.3 THE UNIVERSITY OF HAMLET (UOH)**

At the UOH, five final-year students of the elective course 'Introduction to Creative Writing', their lecturer (Lecturer C), an editor (Professional C) and five final-year students of the 'Understanding Drama' course, their lecturer (Lecturer D) and a screenwriter (Professional D) formed the sample size. Lecturer C opted for the interdisciplinary and transdisciplinary approach while Lecturer D used the multidisciplinary approach throughout fourteen weeks of research. The participants' involvement with CI is delineated in the following sub-segments.

##### **4.3.1 The Effectiveness of CI in Balancing Knowledge and Doing**

Like lecturers A and B, lecturers C and D tailored their fourteen integrated lessons in line with Bloom's (1956) taxonomy in the PDSA stage 1 cycle. Excerpts demonstrating the same are as follows:

Table 4.5 Introduction to Creative Writing Using the Interdisciplinary Approach

Week 1-3: Topic	Learning Objectives	Teaching Strategies	Activities	Integration
<ul style="list-style-type: none"> <li>- Literary Analysis &amp; Narrative Writing (Music Videos/ Shakespearean sonnets 18, 116 &amp; 130), excerpts from Twelfth Night As You Like It/ Victorian novels- The Tale of Two Cities, Great Expectations.</li> </ul>	<ul style="list-style-type: none"> <li>- Identify figurative elements, techniques and devices in different text genres and scrutinize how they contribute to meaning and effect.</li> <li>- Understand the purpose of different narration types and oral traditions in delineating viewpoints, values, beliefs, and ideals.</li> <li>- Analyse the multiplicity within and across Elizabethan and Victorian societies as explored in the studied poems and fiction.</li> <li>- Compare the diversity within and across the contemporary period and establish individual connections between the varying texts representing their worlds and the self.</li> <li>- Write texts using varied genres, styles and forms.</li> </ul>	<ul style="list-style-type: none"> <li>- Research</li> <li>- Classroom Discussion</li> <li>- Group work</li> <li>- Presentation</li> </ul>	<ul style="list-style-type: none"> <li>- Figurative Language Sort</li> <li>- Figurative Language Puzzle</li> <li>- Scavenger Hunt Group</li> <li>- Graphic Essay</li> </ul>	<ul style="list-style-type: none"> <li>- English Literature, English (Writing), Communication, Society, Culture, Education, Economics, Technology, Psychology, Philosophy.</li> </ul>

Table 4.6 Introduction to Creative Writing using the Transdisciplinary Approach

Week 13: Topic	Learning Objectives	Teaching Strategies	Activities	Integration
<ul style="list-style-type: none"> <li>– Information Writing</li> <li>– Research a pertinent social issue.</li> <li>– Study previous written and spoken texts on the selected issue and reflect on it based on your research.</li> <li>– Write a newspaper article on the chosen social issue.</li> </ul>	<ul style="list-style-type: none"> <li>– Identify a social issue.</li> <li>– Draw connections among previous texts on the chosen issue with individual research &amp; reflection.</li> <li>– Create an informed newspaper article on the chosen issue.</li> </ul>	<ul style="list-style-type: none"> <li>– Video Watching on the chosen issue.</li> <li>– Research</li> <li>– Questioning</li> <li>– Group work</li> </ul>	<ul style="list-style-type: none"> <li>– Perusing and discussing previously published materials on the chosen issue in the respective group.</li> <li>– Interviewing concerned figures.</li> </ul>	<p>The studied group of students chose the theme ‘Politics’. They drew from the following fields:</p> <ul style="list-style-type: none"> <li>– Racism</li> <li>– Economics</li> <li>– Education</li> <li>– Science and Technology</li> <li>– Sociology</li> <li>– Psychology</li> <li>– Entrepreneurship</li> <li>– Philosophy</li> </ul>

Table 4.7 Understanding Drama

Week 1: Topic	Learning Objectives	Teaching Strategies	Activities	Integration
<ul style="list-style-type: none"> <li>- Definition of Drama</li> <li>- Significance of studying Drama</li> <li>- Evolution of Drama over time</li> <li>- Constituents' parts of plays.</li> </ul>	<ul style="list-style-type: none"> <li>- Define drama</li> <li>- State the importance of drama</li> <li>- Explain the evolution of drama</li> <li>- Identify and critique constituent parts of plays.</li> </ul>	<ul style="list-style-type: none"> <li>- Group Discussion</li> <li>- Questioning</li> <li>- Audiovisual materials/clips</li> </ul>	<ul style="list-style-type: none"> <li>- Drama Circles</li> </ul>	<ul style="list-style-type: none"> <li>- Sociology</li> <li>- Philosophy</li> <li>- Performing Arts</li> <li>- History &amp; Geography</li> <li>- English (The four language skills)</li> <li>- Cinematography</li> </ul>

Like the studied lessons and courses at the UOM, both the lesson plans and the course outlines of the two investigated modules at the UOH followed Bloom's (1960) taxonomy in planning, differentiating and assessing learning processes and outcomes across varied cognitive complexity levels. Their adherence to the taxonomy unveils their willingness to go beyond the lower-order thinking, notably 'defining' and 'stating' and focus largely on higher-order thinking skills such as 'analysing', 'evaluating', 'drawing connections', 'critiquing', 'writing/creating'. Below is a brief portrayal of the two-course outlines in the PDSA stage 1:



Chart 4.5 Introduction to Creative Writing

Week 1-2	Week 3-8	Week 9-14
<ul style="list-style-type: none"> <li>– Study music videos, prose, poetry and short fiction</li> <li>– Journal Entries</li> </ul> <p><u>Integrated Disciplines (Interdisciplinary):</u> English, Communication, ICT, Sociology, Geography, History.</p>	<ul style="list-style-type: none"> <li>– Argument Writing</li> <li>– Writing a rant</li> <li>– Graphic Essays</li> <li>– Journal Entries</li> </ul> <p><u>Integrated Disciplines (Interdisciplinary):</u> English, Communication, ICT, Cultural Anthropology</p>	<ul style="list-style-type: none"> <li>– Independent novel study</li> <li>– Information Writing</li> </ul> <p><u>Integrated Disciplines (Transdisciplinary):</u> English, Racism, Economics Education, Science and Technology, Sociology, Psychology, Entrepreneurship, Philosophy</p>
<p>Methodologies: Research, classroom discussion, group work and presentation, Journal Entry.</p>	<p>Methodologies: Group Discussion, writing, sharing draft for peer feedback, Presentation and Journal Entry</p>	<p>Methodologies: Research, Perusing previous relevant written/verbal texts in groups, Group discussion, literature circle.</p>

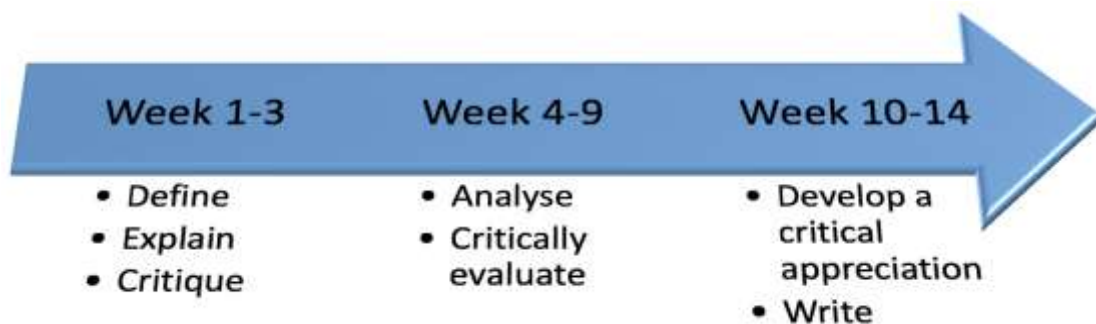


Chart 4.6 Understanding Drama

Week 1-3	Week 4-9	Week 10-14
<ul style="list-style-type: none"> <li>– Definition of Drama</li> <li>– Origins of Drama</li> <li>– Why Study Drama</li> <li>– Key elements/stage conventions</li> <li>– Elizabethan period/Shakespeare’s life/works/contexts</li> <li>– Language Imagery</li> </ul> <p><u>Integrated Disciplines:</u> English Language, Drama, Society and Culture, History, Philosophy, Sociology, Cinematography.</p>	<ul style="list-style-type: none"> <li>– ‘Waiting for Godot’- Plot/structure of the play/Contexts/Tragicomic elements/ Themes</li> <li>– Absurdism, Existentialism, Characterization, Language, Imagery.</li> <li>– George Bernard Shaw- Context/Setting/Genre/Plot/ Characterization/ Themes/Language and Style/Imagery.</li> </ul> <p><u>Integrated Disciplines</u> Performing Arts, English, Society and Culture, Psychology, Philosophy, ICT, Economics.</p>	<ul style="list-style-type: none"> <li>– Arthur Miller- A short biography</li> <li>– Genesis of all my sons</li> <li>– Setting, Plot, Characterization, Themes, Language, Style, Symbolism, Imagery, Allegory.</li> <li>– Write a critical appreciation of the studied texts.</li> </ul> <p><u>Integrated Disciplines</u> English, Performing Arts, Communication, Philosophy, Society and Culture, ICT.</p>
<p>Methodologies: Games, Classroom Discussion.</p>	<p>Methodologies: Drama Circles, Project work, Role Play</p>	<p>Methodologies: Drama circles, Slam, Classroom Discussion.</p>

A reading of the course outlines in the initial stage of the PDSA cycle showcases lecturers C's and D's resolution in imparting factual, conceptual, procedural and metacognitive knowledge to students on a progressive level with learning methodologies and activities designed accordingly. In the course outlines, the lecturers visibly highlight their determination to move their students from the lower learning division, which is defining and delineating, to the more advanced one, notably evaluating and creating. Like lecturers A and B, lecturers C and D adhered to the constructivist learning theory by planning weekly lessons that were one step ahead of the introduced cognitive level. According to Piaget (1960), this progressive organisation of knowledge permits students to experience assimilation, that is, fitting new information into their pre-existing mental schemas and accommodation, wherein they alter their existing schemas to tackle new situations in a poised manner. To Piaget (1960), these processes help students embrace cognitive enlightenment. Vygotsky (1978), on the other hand, perceives the progressive cognitive tasks as what keeps the students' ZPD in motion, that is, keeping them in a dynamic learning zone wherein they are faced with optimal challenges and provided with tailored scaffolds to complete tasks. To Vygotsky (1960), this zone renders learning meaningful and interesting for learners. Interestingly, the planned activities, as at UOM, support Vygotsky's (1960) argument about the significance of social interactions in developing human intelligence. The set activities establish learning as a social process instead of as an individual cognitive journey of discovery, as propounded by Piaget (1960), soliciting students' engagement in collaborative tasks with their counterparts. Also, if the designed lessons brought in relevant knowledge from diverse disciplines, the set activities facilitated the balancing of the integrated knowledge with practice, hence, meeting the IIIT's (1954) requirements of CI.

Unlike lecturers A and B, lecturer C's designed lessons in the PDSA stage 1 did not alter throughout the research. In his interview, lecturer C asserted that:

'I know my students well. I have worked with them for the past two years. I planned each week's content by bearing in mind their level. I teach the topics in depth. And the transdisciplinary approach is broad, so it allows them to use different means, err, err, of their choice to discover new learning and write the papers. For that, they had to be on different sites chosen by them too, which teaches them the skills, err,

criticality, at ease talking to different people, addressing concerns...As long as the end product is good, and it was (smiling), I don't mind any particular ways they adopt to reach it. I would say, I appreciate it, on the contrary, it teaches them responsibility and to learn on their own.'

Lecturer C's above affirmations unveil that a sound mastery of the students' learning profiles can hinder the occurrence of critical incidents in class. The broadness of the transdisciplinary approach proved to have provided the students with the freedom to discover knowledge in sites of their choice, thus allowing them to be at the centre of their learning processes wherein they also practised twenty-first-century skills, notably critical thinking, responsibility, independent learning, researching, problem-solving and interpersonal. These skills are currently sought by both the Mauritian and the global markets (Future Work Skill, 2020; International Labour Organisation, 2018; World Employment Forum, 2022), and can therefore be said to be an effective preparation for the students for work. Adapting literary rigour to real-life relevance is a type of teaching which Dewey (1933) tags as cohesive and well-rounded.

On the other hand, lecturer D's planned lessons in the PDSA stage 1 were slightly altered in terms of instructions which were added to facilitate his students' understanding. An exemplification of the changes in lecturer D's class is as follows:



Chart 4.7 Instructional changes in lecturer D's lesson plans

Lecturer's D's ability to alter his instructional strategies on the spot showcases his flexibility and high attention level in reacting duly to the unpredictable to enhance his students' learning, that is, addressing diverse needs and adaptability and increasing productivity by giving supplemental instructional support for complex, abstract content in interactive teaching. It can thus be stated that lecturer D calculatedly used an instructional strategy that would most likely bring the desired learning outcomes from his students. This study evidences that instructional strategies, as added content used by lecturers A and B, are both stimuli that promote meaningful teaching and learning experiences. Like lecturers A and B, lecturer D's engagement in reflection in action demonstrates that reflection is not necessarily a retrospective undertaking, but it can be performed forthwith during the process of teaching. Lecturers A's, B's and D's engagement with reflection in action highlights, as mentioned by Dewey (1933), their broad knowledge base to take a holistic, active and consistent approach to teaching while critically considering the unexpected. Consequently, reflection in action proves

to be an expertise, as Schon (1983) mentions, that every instructor must possess, hence, implicating the need for the latter to demonstrate the skill in teaching and learning since they are key figures in the process of easing learning and aiding their students to discern what they can attain. Lecturer C's and D's planned lessons show that not all lecturers are resistant to pedagogical changes, thus contradicting Roopchand's (2019) and Hardin-Ramanan et al's (2020) studies, which generalised customary teaching in Mauritius' HE.

Building on the above, lecturers C and D, like lecturers A and B, balanced theories with practice through the set pedagogical activities. This is exemplified below:

Table 4.8 Balancing theoretical knowledge with application in lecturer's C class

Week	Theoretical Knowledge	Application
1-2	Study music videos, prose, poetry short fiction, and Journal Entries.	Cast of Characters, Stage Directions, Settings. Readers' Theatre Prose Scavenger Hunt Journal Prompts
3-8	Argument Writing Writing a rant Analyzing literature with graphic essays Journal Entries	Debating Shark Tank Mind Mapping Graphic Essay Journal Prompts
9-14	Independent novel study (link provided themes with reality) Themes: Crimes and Deviance, Corruption, The Economic World, Human health and Welfare (Pick one) Information Writing	Research work Field interviews Literature circles Writing prose, drama and newspaper articles.

Table 4.9 Balancing theoretical knowledge with application in Lecturer D's Class

Week	Theoretical Knowledge	Application
1-3	Definition of Drama Origins of Drama Why Study Drama Key elements/stage conventions Elizabethan period/Shakespeare's life/works/contexts Language Imagery	The Expert game. Pass the Pause. Jump over the imaginary ball. Freezing Frames. One-word story.
4-9	'Waiting for Godot'- Plot/structure of the play/Contexts/Tragicomic elements/ Themes Absurdism, Existentialism, Characterization, Language, Imagery. George Bernard Shaw- Context/Setting/Genre/Plot/Characterization/ Themes/Language and Style/Imagery.	Posters with themes to chart book themes/ characterization/ plot progression. Drama Circle/Design a role play on the studied text. Create a 21st-century character using characteristics of the postmodernist era. Project work.
10-14	Arthur Miller- A short biography Genesis of all my sons Setting, Plot, Characterization, Themes, Language, Style, Symbolism, Imagery, Allegory.	Posters with themes to chart book themes/settings/characterization/literary devices. Drama circle/Mount up a slam on the studied text. Write a critical appreciation of the studied texts.

An examination of tables 16 and 17 highlights that, as at the UOM, the set of cognitive activities by lecturers C and D for the initial weeks do not align with the type of exercises Piaget (1960) recommended for their students' age. For a second time, this study proves that age is not a determining factor of which cognitive stage students should be in. According to lecturers C and D, they started from scratch because:

‘Look, I acknowledge the students’ previous knowledge of creative writing. They’ve been doing this in both O and A levels, but I need to ensure that they still remember the basics. I cannot jump to the complex topics because as much as I know them they need the basics to understand the complex. Despite being exposed to those genres before, they, as expected, had some difficulties in understanding, analyzing, and evaluating the music videos and the other texts as well, as poems and so on. The activities I planned helped them to have a good understanding of the studied texts plus being able to dissect and write texts on their own. Writing texts was one of the main Los and this way was best to teach them to write.’ –Lecturer C

‘I have to start with definitions. If not, all the complex learning that I teach them would not have been futile. The definitions are like the scaffolds. You know, when I asked them in class, ‘define drama’, all went silent. It’s not that they do not what drama is but they cannot define it, talk about its origin, its significance. This needed to be sorted out first for them to be able to critically read plays in the subsequent weeks. I needed to do this...else, they would murder drama (laughing), and their exams as well (laughing and winking). No, the base had to be there and this helped them a lot throughout.’-Lecturer D

Based on the above two affirmations, lecturers C’s and D’s students, despite being above the age of nineteen, initially found themselves in Piaget’s (1960) preoperational stage of cognitive development due to their inability to engage in operational thinking and process understanding and complicated thoughts. As suggested by Bloom (1956) and Vygotsky (1978), the lecturers preferred to start with the basics, which ultimately turned out to be scaffolds for the teaching of complex concepts through interactive activities. In this regard, the students could assimilate and accommodate connected complex notions in their mental schemas without having to face any disequilibrium. In the ‘Introduction to Creative Writing’ module, as lecturer A, lecturer C, once done with his inductive explanation, tested his students’ understanding through the set activities. In the FGD, his students affirmed the following:

‘Student K: I am very grateful for him to start with the definition, this helps me a lot to understand the whole course. The journal prompts, the mind mapping, and the scavenger hunt help me to identify and rganize the information. I know what I should do. Student L: yes, the activities were very helpful and they made the class very interesting. For me, the activities were fun, but when I reflect on my participation in class, I realise that those activities helped me a lot, like the readers’ theatre,

which was my favourite, gave me the feel of theatre. I can stand on stage and act. (Student M): in movies also (laughing), and writing plays too. The shark tank activity shaped this skill of ours, honestly. Student K: (nodding seriously), and these activities did not make us only study texts, but write as well, and for me, this was an achievement. Student N: I agree with them all, we also had to debate where it was not only about writing the pros and cons on paper but pretty much doing the debate, arguing our points, as he said (pointing at student L), reflecting on the debated points, and writing succinct arguments. Student O: Me too, I agree with them. I enjoyed the scavenger hunt and the graphic essays. Mounting a graphic essay was fun for me, and most importantly, I felt happy that I could create materials, (Student M), haha, like on Pinterest (Student O), haha, yes, it felt good. Also, the fieldwork required us to research, interview people, and write on our chosen theme. Student K: The last weeks were quite tiring but we were on job sites, we got access to different news channel and magazines teams, we split up, (pointing at M, and N), they interviewed people from the industries and us (pointing at L and O), we went to the channels. This was a very fruitful experience, we got the feel of what's awaiting us if we join channels or industries. Student M: it's not only being on the different sites, after conducting interviews and doing some observations and our research, we sat down and discussed and then wrote our project. Most importantly, we did not study one specific field, we had to research others too and this I liked the most, it was like forming me for the future. The theme we chose was 'The Economics'. Student K: We did our research, and discussed the overlapping disciplinary parts in the literature circles. Student N: not necessarily taking content, but how we perform a task from other disciplines, like my knowledge of IT, Comics, Arts to mount up comics.'

The students' affirmations highlight their positive experiences with CI in balancing theories with applications through the set pedagogical activities, which acted as scaffolds permitting the latter to process the newly introduced knowledge into their previously existing schemas, thus striking an equilibration between assimilation and accommodation. Reading from Vygotsky's (1978) perspective, the differentiated aspects of the set of pedagogical activities helped the students to master their ZPDs. The activities were also seen to support twenty-first-century skills development and alongside knowledge, and their application in practice. Applying knowledge and skills in practical activities helped the students to engage in higher-order thinking, wherein the focus was on attaining the highest level of Bloom's (1960) taxonomy. Eventually, the students were able to act in the reader's theatre and shark tank activities after studying movies, create informed arguments and graphic essays after reflecting on

their participation in the debating, literature circles, and mind mapping activities wherein they practised twenty-first-century skills such as written and spoken communication, listening, tolerance, reflection, problem-solving, digital and critical thinking. By incorporating the practice of these skills with knowledge acquisition, lecturer C can be said to respond to international educational screeches notably the OECD (2022), UN (2022) and UNESCO (2022) for preparing students with the right expertise for work in their field. The fact that the students found the learning processes to be 'happy', 'give me the feel', 'fun', and 'interesting' proves the occurrence of meaningful learning through constructivist, playful activities in the students' cultural environment wherein they were able to gradually embrace cognitive maturation and bridge the gap between theories and practice.

Furthermore, in the process of applying knowledge to practice, the set activities, as suggested by the IIIT's (1989) model of CI, required the students to see learning as a whole by drawing from related disciplines, skills and real-life working situations to complete the assigned tasks. The interconnectedness of interdisciplinary knowledge, integration of theory with practice, and the formation of informed perceptions based on the link between in-class knowledge and out-of-class realities met the IIIT's (1989) first three steps of CI. According to Nordin and Dan (2002), involvement in these three steps promotes comprehensive, holistic education, thus aligning with the Islamic perspective of the necessity of education to encompass both spiritual and worldly needs. Since the transdisciplinary approach provided the students with a literary theme which was mirrored in their social reality, the students had to seek access to related job sites for interviewing, researching, analysing, and being able to succinctly write reality genres and news/magazine articles. This type of teaching can therefore be stated to be informed and to blur the gap between the university and the market. As affirmed by student M, who appreciated this type of teaching for 'forming me for the future', CI proves to possess the capability of producing graduates' work readiness. According to the World Employment Forum (2022), employers are currently searching for knowledgeable and skilled employees who can solve problems in their entirety, and demonstrate twenty-first-century skills and a happy demeanour. Lecturer C's students appear to have developed those in-demand traits through interdisciplinary and transdisciplinary approaches. This finding

aligns with that of Atkinson (2024), whose research confirms that a transdisciplinary approach enhances disciplinary integration, transferable employability skills and students' autonomy. This statement is corroborated by professional C, who evaluated the students' performance from a professional perspective:

'I was very delighted to rate their graphic essay and their written tasks. It was a glee. I must say that their writings were insightful, well-researched, and informative (smiling), and what was amazing was that they managed to incorporate their voice. Their lecturer trained them well...Of course, I agree, his teaching methods were most effective for the students to own their learning and write weighty points. You know, often, we come across writers who simply collocate information, bits of research here and there, but theirs was a cohesive piece. The vocabularies appear to be calculatedly chosen while keeping the language simple. Of course, for publication, there would need some minor changes, in structure, and in-detail feedback to be reviewed, but content-wise, for an initial draft, I would say they did a good job. For the prose, the plays, and their graphic essays, I am one hundred per cent certain that these can be on the market already. They are written pieces that are easily read, understood, informative, interesting, and mostly, analytical and critical...Yes, they are very welcome on board, they would do well career-wise. There's one student, (referring to student K), he'll get the front page soon after he joins, he's good (smiling)...When the students were on site, journaling, interviewing, researching, you know, all these are very tiring and irritating somehow, but they were here to learn and they showed enthusiasm to nail their tasks. That was their spirit. They had good mannerisms.'

Like professional A, professional C's affirmations reveal that lecturer C's students' demonstrated knowledge and skills prepared them for the workforce. This finding evidences CI, as both an approach and end-product, to be successful in placing international educational policies (UNESCO, 2022; UN, 2022; OECD, 2022), university and global and local market requirements (Sarita et al, 2020; World Employment Forum, 2022), on the same footing while creating individuals with twenty-first-century skills. CI is therefore the solution, as proved by this study, to shape holistic graduates with the in-demand expertise for work. Similarly, professional C affirmed her support of the interdisciplinary and transdisciplinary integrated approaches used by lecturer C for moulding work-readiness in her field. Her assertions that the students' graphic essays, their other written genres, and their articles, though requiring some fine-tunings, were fit for publication highlight the

latter's abilities to meet the market demands. The particular mention of student K's exceptional abilities underpins CI to effectively prepare him to excel at work while building appreciation for enhanced improved outcomes. This mention reinforces Vygotsky's (1978) argument that every child has a specific cognitive journey and develops higher mental order functions through collaborative exchanges with more advanced others, in this case, adult employees in the field, thus, proving that the field works socially contributed to the cognitive development of the students, particularly student K and not self-initiated discovery as argued by Piaget (1960). Conversing with the employees who acted as the more knowledgeable others helped the students, as Vygotsky (1978) stated, to internalise the 'how to do it' part through the received inputs, notably hints and instructions through both inner and private speech. This delineates why the students delivered good writing pieces. Individuals' cognitive development is therefore best comprehended through social and cultural experiences. The enthusiastic and well-mannered spirits of the students eventually meet IIIT's (1989) fourth point of its CI model alongside the concern of Mauritian employers (Sarita et al, 2020), of hired graduates' poor demeanours and unwillingness to learn. Contrarily, lecturer C's students demonstrated the opposite. This eventually led to the final criterion of the IIIT's (1989) CI model, which is to create wholesome individuals with cognitive, psychomotor and emotional maturation to tackle both personal and professional situations. Ultimately, this finding corroborates Drake's and Savage's (2016) statement about CI being the most appropriate strategy to balance knowledge and doing due to its unifying framework that supports interdisciplinary capabilities.

Moving to the second studied module at the UOH, notably the 'Understanding Drama' course, which, like the module 'Historical and Philosophical Foundations of Malaysian Education' at the UOM, adopted the multidisciplinary approach. Like lecturers A, B, and C, lecturer D balanced knowledge with doing through his planned pedagogical exercises. Below are his students' affirmations stated in the FGD:

Student P: Yes, I believe he did a good thing by starting from the beginning. (They all nodded) It's not like we don't know what's drama but it's a long time since we've done that, in secondary school, and we may have missed some significant points. Student Q: if he had jumped in the middle, for sure, we would be at a loss, so we appreciate that he started from the beginning. Student P: I also appreciate his teaching

strategies, he taught us the basics, and the plays, all from different perspectives. We had different perspectives from different disciplinary areas to explore different themes. This helped me a lot in understanding (interviewer intervention: how?) by bringing in different perspectives, err understanding from different disciplines, philosophy, sociology, psychology, English, and cinematography, to illustrate themes or better understand the characters. Student R: I would like to add to that if you permit, when he gave us the different perceptions of how to treat a theme from diverse disciplines, personally yeah, this helped me to think broader like it made me, sat down, think over the different perceptions, and then wrote my analysis. This helped greatly for the poster and the games because it gave us a deeper understanding. We devour the texts with our interpretations in the drama circles, mostly. Student S: The activities as he (pointing to student R) said, helped us to evaluate themes through different disciplinary lenses. That was interesting, and the way he planned everything, instructions, games, and writings, made us write from different perspectives. I liked it when he encouraged me to voice out my evaluations of themes from different perspectives on paper. Student T: As he just (pointing at student S) said, the activities helped us implement what we learned. They tested our knowledge, I would say and we acted in our drama circles. When it comes to difficulties, I would say we hardly had because you know, he planned the course, not In a scrambling one, (Student S), It was comprehensive, yeah, so we got along well. Student R: The activities were very good, it was good to use textual information to create, recreate, act, discuss and play with (Student P) and this made us enjoy the lessons and be satisfied.'

An analysis of the above affirmations reveals that, unlike lecturer B's students, lecturer D's students had a non-confusing teaching and learning experience with the multidisciplinary approach, as also evidenced in Hero et al (2019) research. Contrary to being 'confused' as lecturer C's students were, lecturer D's students appeared to have been actively engaged by, in, and with the multidisciplinary learning. According to them, this was due to their lecturer's ability to connect the different disciplinary perspectives in a comprehensive whole, as opposed to lecturer B, who, according to her students and professional B, omitted this step. Like lecturer C's students, lecturer D's students appreciated their lecturer for beginning with the basics, which acted as scaffolds for their understanding of advanced topics. Using the scaffolds showcases that the cognitive development of students relies on how effective the primary instructions were; that is, it could be stated that the basics that students learned in the early cognitive stages influence their subsequent learning stages. This delineates why lecturer D altered his instructional strategies to promote assimilation and

accommodation in the students' minds throughout the fourteen-week course. Moreover, unlike the other studied courses, the first three weeks of this module acquainted the students with drama only through games/play, which, apart from being a form of sociocultural learning (Vygotsky, 1978), permitted the students to create and negotiate meanings upon their experiential experiences (Dewey, 1933). This is typified in student R's affirmation when he claimed to have felt the need to '[sit] down and think over the different perceptions' before writing his analysis. In this respect, multidisciplinary learning can be said to promote deeper understanding, critical thinking, reflection, evaluation and collaborative learning, which, according to Dewey (1933) and Webster (2009), provides students with the intellectual freedom to discover knowledge in the existing world surrounding them. By encouraging his students to share their expressions and explorations of the studied texts from varying disciplinary perspectives in the drama circles with their counterparts, lecturer D showcases his adherence to Dewey's (1933) philosophy of progressive education, wherein academic freedom was perceived as democratic and thus, students' rights. According to Dewey (1933) and Vygotsky (1978), when students are encouraged to practice their academic freedom, they turn into critical, analytic thinkers who are active in the teaching and learning processes. Eventually, lecturer D's students demonstrated strong engagement in each weekly lesson and were successful in 'implement what we learn' through the activities wherein they engaged in Bloom's (1956) higher-order thinking functions like 'writing', 'creating', 'recreating', and '[evaluating]'. The affirmations of their enjoyment and satisfaction with the multidisciplinary lessons showcase their rewarding experiences. Below is professional D's comment on the lecturer D's students' performances:

'Impressive. Their work (lifting the students' posters and pointing at the latter's projects, characters' creations, and critical appreciation of studied texts [written essays]) are very good pieces. I was happy going through them and to be honest with you (pointing at the interviewer), I learned creativity, many things, you know, visual mind-mapping tools, no dialogue for a while, holding the audience in the beauty of silence, careful precision of each snapped shot. This was amazing and as you can see they focus on these minute details in their writing, that when you are reading, you already visualize the whole thing. So, they do make good screenwriters, their projects, posters, and essays demonstrate logic, creativity, their critical minds, most importantly, their ability to analyse and reflect... this is what we trained interns for here. I believe

the drama circles helped them to have insightful discussions. If you study the characters they created, you'll marvel. It's interesting, that the characters in the eras they studied with present-day traits...Yes, I believe that their lecturer did a very good job, but you know, apart from writing, creating and so on, it would also be good if the students would put into action, like create a short movie enacting what they've created. But that does not mean that they weren't good...yes, yes, very likely, I would be happy to have them for an initial internship, they are already writing beautifully with the inclusion of the genre traits, and they would do good in the writing field, no doubt (smiling) and if they possess the acting qualities, that would be a surplus (smiling).'

A study of professional D's affirmations highlights that the multidisciplinary approach prepared the students for the position of screenwriters. Based on the judgment of professional D, the students displayed in-demand skills of the job through their tasks, and this corroborates the effectiveness of the set activities by lecturer D to help his students apply their evaluated readings in practice. With the creation of authentic learning scenarios, the activities, besides giving the students academic freedom, helped them to unleash their twenty-first-century skills, notably analytical thinking, reflection, creativity, social collaboration, digital writing and creating and technical expertise, namely knowledge of media production and character, theme and plot development. Professional D's assertion that the students' displayed skills were what 'we trained interns for here' showcases that the set activities have balanced students' knowledge of drama with practice and were successful in alleviating gaps between university and market demands. Additionally, the acceptance of professional D to have learned new media techniques from the students unveils the benefits of the latter's involvement with academic freedom which as Dewey (1966) speculated permitted the young minds to be non-reductive, process-oriented and thoughtful, implying that the teaching of knowledge and skills cannot be isolated from the development of students' thinking faculty. To Dewey (1966, p. 152), this type of teaching promotes 'intelligent learning, of learning that employs and rewards minds'. That is, the integration of knowledge and skills leads to the successful completion of thoughtful actions. This line of Dewey's (1966) argument mirrors Vygotsky's (1978) and Bloom's (1956) theories about promoting cognitive functions through knowledge application. Though professional D acclaimed that it would be a plus if lecturer D had an activity requiring the students to act out their creations, he reasserted the students'

preparedness to work in the drama industry by affirming that ‘they write beautifully’, ‘would do good in the writing fields’ and were welcomed for ‘an initial internship’. The following segment presents lecturers’ C’s and D’s experiences with CI.

#### **4.3.2 University Lecturers’ Experiences with CI**

Like lecturers A and B, lecturers C and D admitted to having positive experiences with CI. In their interviews, they affirmed the following:

‘I had a good experience, I would say, with this type of teaching, which is very new to me. When I read the leaflet you gave (pointing at the interviewer), I wanted to know more about CI. It looks fascinating to me, that’s why (smiling) I accepted to be part of your (pointing at interviewer) research. (Raising a higher tone), I did my research too, and this was when I decided to plan lessons using both the inter and the trans. The trans was more appealing to me, but I say let’s start with inter to get the students familiar with this type of teaching... Yes, I would like to continue but there are some constraints, to be realistic, on an individual level, it would be very difficult for me to do all the planning for all the classes that I teach, time is a problem, resources are another and most importantly, it’s tiring, for me to teach all my classes like this, I would need extra support from the university, like bringing in together different lecturers to discuss how specific modules can be taught through CI, an even a support assistant. Alone, one lecturer doing all the research, study first, design activities, it’s tiresome. I did not have any problem with the university telling me what I was doing or where I was sending students. The university allows us to teach the way we want here (laughing), and this was why I could be part of your (pointing at interviewer) research. In terms of the final assessments, I would say that given that it is a module that develops students’ creative writing, the final assessments where students had to write, tallied with the lessons. Of course, it’s standardized so the students had to write in the different registers studied in class. The students’ scores are significantly higher for this module; I was analyzing this... Yes, of course, I would want to use it in the future, in other year classes, but support from the university is needed.’ - Lecturer C

‘I used the multidisciplinary method and I like it very much (smiling). I learned a lot, I learned how to identify relevant disciplines and make them relevant to my teaching. It’s a plus not only for my students but for me as a lecturer also, it widens my perspective and allows me to teach holistically, and what gives me real satisfaction, is my students’ outcomes. They were successful in meeting the Los, in writing plays, and in negotiating themes, characters, and happenings from the different

introduced perspectives. I feel that this is a teaching method that I would like to try in my other classes, and see the results...Yes, I'll be honest, it's very tiring, but it's our job. We are paid for that. We are given time to plan our lessons, so we can use the same given time to plan wisely. It's our responsibility as lecturers here to see to it that our students master the modules we taught (pause), and I would say this method of teaching is effective. When I observed and talked to the students during and after the classroom activities, I saw that they were motivated, very much into the lesson, and willing to get things right. There was cooperation as a team, working, and discussing to reach agreements. Their writing, when I read them, I feel satisfied. They were insightful. The problems were mostly mine (smiling), I needed to see how to get all the content covered within the fourteen weeks, take time to research activities, and be very attentive in class like you know, I saw some stern faces when I first started, so I was like, they're not understanding, I need to simplify, when I changed my strategies, like pausing with classroom discussion and using concept mapping to ease understanding with some questioning, it helped them, then I continued with the class discussion. But all these I took positively, they built me up, as a lecturer and the students for work. Certainly, I agree, it's my job to prepare them for work, if it weren't mine, who would it be, what would be the use of the students to coming to university then? ... I would also like to try the other two types of integration, they look interesting.' - Lecturer D

A close reading of the above two affirmations underpins lecturers' C's and D's rewarding teaching and learning experiences with CI. Finding CI to be 'fascinating' and 'interesting', lecturer C, by conducting his research before settling on which integrated approach type to use in his class, demonstrates his willingness to process and assess new knowledge relevant to his professional practice and update his pedagogical knowledge base to improve his teaching and attaining new teaching demands. His keenness to 'know more' about CI displays his optimistic self to hone his professional competencies, and this contrasts with lecturer B's abhorrence in using CI to meet existing teaching and market demands. Thus, it can be stated that readiness to learn and improve one's professional self relies heavily on one's behaviour, implicating the need for professional development programmes to cultivate a desire in lecturers to keep abreast with new knowledge, trends and developments in the pedagogical field. Moreover, like lecturers A and B, lecturer C admitted that alongside time and resource constraints, he found CI to be 'tiresome', particularly the researching and planning phases and would like to continue to use CI if the university provides additional support notably an assistant or bringing concerned lecturers

together to discuss about the planning of integrated modules. His proposition raised significant implications for university teaching, for example, a rethinking of HE's practices, building lecturers' collaboration in planning integrated courses, displaying sound professional expertise by lecturers and the provision of assistants. The question remains, 'How willing are universities to embrace CI?' and implicates a new line of research exploring universities' heads' perceptions of integrating university modules to balance knowledge and doing, forming holistic students with twenty-first-century expertise to meet the market's demands. Despite CI proving to ameliorate lecturer C's students' grades, the 'tiresome' aspects of the method appear to discourage the latter from continuing to use it.

Interestingly, what lecturer C found to be 'tiresome', lecturer D found to be 'my job' and 'responsibility'. Contrary to lecturer C, lecturer D, though, admitted that CI was 'tiring' and time-consuming, stressed that these challenges were 'personal', that is, his, and would devise ways of tackling them. His determination to address the challenges, ability to teach holistically and satisfaction with his students' performance demonstrated his readiness to improve his and his students' efficiency, performance and the opportunity to exploit his and his students' potential. Unlike the other lecturers who fussed about the hard work that went into the planning phase, lecturer D appeared to have enjoyed his as he emphasised the strengths he embraced throughout his research about connecting relevant disciplines in a unified unit. Unlike lecturer B, who, like lecturer D, used the multidisciplinary approach and affirmed that preparing graduates was not her job, lecturer D affirmed that it was his, as the students enrolled for university for utilitarian purposes. This study, therefore, highlights two contradictory perceptions of two lecturers in two different universities using the multidisciplinary integrated teaching approach. Addressing contradictory perceptions on multidisciplinary integrated approaches highlights the necessity for professional development opportunities for lecturers to tally their understanding and practices of CI across geographical locations. Open dialogues, professional development initiatives and collaborative efforts between lecturers, university leadership and relevant stakeholders to ensure alignment in views and practices on multidisciplinary teaching practices are solicited. The establishment of clear interactive channels and opportunities for knowledge sharing and discussion can aid in bridging gaps between

contrasting perspectives and effective educational environments across institutions. Lecturer D's elucidation on the reasons he altered his instructional strategies in class highlights his flexibility in adapting to the immediate needs of his students. According to Dewey (1966), Vygotsky (1978), and Bloom (1956), this teaching trait leads to true learning and therefore explains why lecturer D's students successfully met the set learning objectives. In contrast to lecturers A and B, lecturers C and D did not find the written summative assessments to be a major constraint as their modules tapped into the development of writing skills. The following presents the students' experiences with CI.

#### 4.3.3 Students' Experiences with CI

Like their lecturers, the students asserted to have fulfilled experiences with CI. In their FGD, the latter claimed the following:

Student N: We like it, I do. I like how we sat together (referring to the literature circle activity) and dissected texts. Err, you know, I learn a lot through this, like we discuss characters, themes, and plots from diverse perspectives, and each one of us brings our ideas, and our research and this helped us to understand the texts better and be able to write our interpretations. Student K: Agree, apart from the lit circle, the mind-mapping and journal prompts helped too. These helped us in structuring our ideas, gaining a better understanding of the texts, of the events in chronological order, and deriving our interpretations and these helped us with the shark tank which I find to be very amusing. When we had to mimic characters and get our groupmates to guess the character, I found this interesting because it in a way tested how much we understood our characters and got us to be in the shoes of the characters we were studying (cut by student O) and the readers' theatre as well (Student K), yeah, we recreated scripts and presented them to the class. Student O: The casting of characters, being the director, getting to practice directions, like you know, a bit like getting the feel of what occurs behind the stage as well, so it's like he wanted to provide a whole picture of things, and this for sure increased our knowledge and understanding of not only you know acting or recreating texts but mounting up a real scene using the technicalities. Student M: I like this way of teaching too, it enhanced my writing and allowed me to develop my ability to defend my points, practising my persuading skills which I learned from my Public Speaking class, and mostly, the research and on-site work. I believe this was very fruitful because I learned a lot from the sites, from interviewing people, from research, from writing and

rewriting drafts to make my work good (student K nodding). The techniques we learned as well (pointing to student O), that was nice, we learned how to mount things up, and how to create digital writing (referring to graphic essays) which I must still not well realised in Mauritius. Student L: Yeah the graphic essays were interesting to do, I enjoyed it because it's not something common...yes yes, I would love to learn like this again (smiling), Student K: We all do actually (they smiled and exchanged glances)' - Lecturer C's students.

'Student P: The class was very amusing. We enjoyed a lot, we had loads of fun. Student R: We learned better through the different games (pause) Student T: The games were mind-blowing, they made us learn in a fun way and this made us want to attend the class. In the games, we learned how to use several perspectives from several disciplines to do tasks together, we had to use that knowledge to complete the tasks well. And these games made us all very much into the lessons. Student S: I would say that through the games, we don't need to remember information now, it is etched in our memory, and I think this is because we were very engaged as (pointing to student T) said. We learned together how to identify, use the right info, analyse, and sort info to win the games. That was amusing. And the games that were done in the beginning weeks helped us a lot to write our posters (pause) Student P: Yes, I agree, we knew which info to add, which analysis to add, how to present a critical analysis of the themes, the characters, the narration from varying perspectives and then we deduce our understanding. The drama circles work wonders too. This is where we had fun among ourselves, we cracked some jokes (all laughing), interpreted the plays from different angles based on our research, and created a slam. That was super fun! Student T: we had more fun in the preparation phase than when we were on stage. But as they said, we did not only understand drama from drama perspectives, or literary critics, we learned it from varying perspectives, different disciplines, different interpretations, and different ways of seeing things, and we analysed each of them and then together discussed our interpretation. Our interpretations as our lecturer said, are informed...Student P: he said the same for our group project. Personally, I believe that we were able to make informed interpretations because of the initial weeks, the games helped us a lot in understanding drama, we played, acted, and had fun but we learned through them. Student S: For me, the games helped me to sort out information, to understand the characters' thoughts better and to develop my reactions towards their actions. Student Q: For me, I like this way of teaching, it's new, it's interesting, I feel obliged to give my full concentration, and sometimes I daydream (all laughing) because I feel bored, sitting and taking down notes. This way of teaching makes me active, makes me feel interested, and I liked the games, the games kept me focused and made me learn new ways of how interpreting happenings. I would like to continue learning in this way and am sure they do too (they all nodded) ...What do Sociology, Psychology, history, economics, society, and culture say about particular themes? This connects to our real life,

we have to same themes in reality, same to same problems, so I used my reality knowledge as well. Combining all these different perspectives gave me deeper insights into the themes, and the characters, and helped me personally to understand how drama reflects my reality. We always read that literature mirrors life, and it feels good to see how it is reflected, how things are mirrored, and what are the solutions the protagonist took, would I take the same or others? Student K: hmm, I agree, it's true. We did enjoy writing up our interpretations (smiling).'- Lecturer D's students.

An evaluation of lecturers' C's and D's students showcases their learning gains, contentment and satisfaction with their experiences of integrated teaching. The interconnectedness of varying disciplines, integration between theory and practice and the connection of in-class experiences to that of out-of-class experiences, as propounded by the IIT (1989) model of CI, permitted the students to cross-curricula and link their learning to real-world value and eventually helped them to embrace insan-kamil, that is, their holistic development. Students from both lecturers' classes demonstrated mastery of the cognitive, affective and psychomotor domains of learning. Lecturer C's students' acknowledgement of 'learning a lot' through literature circles wherein 'each one of us brings our ideas, and our research and this helped us to understand the texts better and be able to write our interpretations' corroborates Vygotsky's (1978) cognitive development theory which advocates that individuals' mental abilities are developed through collaborative and cooperative exchanges with counterparts of the same culture. By interacting with individuals of their culture, the students built their schemas through their received experiences from literature circles' discussion, mind-mapping and journal prompts, which acted as scaffolds for them to accommodate and assimilate complex knowledge, particularly acting, recreating and writing informed arguments and interpretations of varying genres. The scaffolded activities hindered contradictions and inconsistencies in the students' existing knowledge structures, therefore creating an equilibrium in their schemas while they progressed to their next cognitive stage of development. Social interaction, as highlighted by Vygotsky (1978), thus proves to facilitate students' cognitive development. Moreover, the latter claimed to have enjoyed the knowledge application parts wherein their immersion in fieldwork's investigation as well as in-class tasks like the readers' theatre, shark tank and debating made them develop tacit knowledge alongside generic and technical skills. Interestingly, besides the brought-in

interdisciplinary knowledge of lecturer C, CI proves to allow students to bring in expertise they found relevant from their experiences. Eventually, student M used his knowledge and skills to persuade his counterparts from his Public Speaking class while debating his points. This exemplifies learning as a unified entity, in contrast to being fragmented. CI can be said to permit knowledge, skills and experiences to transcend disciplinary divides, and this type of teaching, as affirmed by the IIT's (1958) model of CI equips students with both cross-curricular theoretical and applied knowledge; competencies which are required by both the existing local and international markets. Furthermore, the students expressed their happiness in creating their graphic essays since digital writing is 'not common in Mauritius', demonstrating their desire to bring innovation to the field of creative writing, traits which the World Employment Forum (2022) listed as crucial for the future of work. Like lecturers A's and B's students, lecturer C's students agreed to continue working with this teaching style.

Moving to lecturer D's students, the latter had positive experiences with understanding drama from multidisciplinary areas through play. Inherently engaging and enjoyable, the games proved to enhance the students' motivation, memory retention, understanding and positive emotional experience while allowing them to apply their multidisciplinary knowledge and skills in practical situations. This finding aligns with research conducted by Dervin et al (2020), Hwang et al (2021), Kolb and Kolb (2019), and Mayer et al (2019), who equally found direct learning experiences to promote a higher level of engagement, motivation, knowledge retention, and emotional well-being among students. The application of multidisciplinary knowledge to solve the games bridges the gap between theory and practice. Such types of activities have been proven by Hwang et al's (2021) research and Liu et al's (2020) meta-analysis as most effective for preparing students for real-world challenges and improving their problem-solving abilities, therefore, significantly increasing students' employability and readiness for the workforce. As lecturer C, lecturer D set games for the preliminary weeks and acted as scaffolds for their students to master the lower cognitive level of Bloom's (1956) taxonomy, which is 'identifying', 'understanding', and 'sorting out relevant information'. The mastery of the lower level of the taxonomy struck a balance among the students' adaptation, assimilation and accommodation

processes of new complex knowledge, that is, analyzing, writing informed interpretations from varying disciplinary lenses and creating a slam. For a second time, this study proves that the mastery of the lower cognitive levels is imperative for the mastery of the higher levels of cognition. Additionally, the students affirmed to have found the learning processes as 'fun', 'amazing', 'interesting', 'engaging', 'active' and 'kept focused' which apart from giving them enjoyable learning experiences, fueled their intrinsic motivation which could be seen through their display of positive behaviours, creativity and innovation and social interaction. Their enjoyment of learning also includes the fact of them exploring knowledge from diverse disciplines before reaching 'informed' interpretations. By and by, the students, in their assertions, refer to 'together' while delineating their successful completion of tasks, particularly while solving the games, mounting the slam, discussing plays in drama circles or writing their projects. According to Vygotsky (1978), collaborative learning environments which solicit students to be involved in social speech, negotiation and joint problem-solving boost cognitive development by internalizing knowledge, regulating thinking and developing social and communicative skills, thus, allowing the latter to transform external speech into internal thought processes wherein they can self-guide, self-regulate and problem-solve. Consequently, this type of teaching proves not solely to create knowledgeable individuals with twenty-first-century skills but also with positive behaviours which are in-demand traits by both the Mauritian and global markets. The following concludes the study.

## **CHAPTER FIVE**

### **EPILOGUE**

#### **5.1 CONCLUSION**

This section encapsulates the unveiled findings received from this study. The primary purpose of this study was to assess the effectiveness of CI in balancing knowledge and doing in higher education to meet market demands. The key research questions were: (1) How does CI influence the development of twenty-first-century skills in students? (2) What are the comparative impacts of different integrated teaching approaches on students' learning outcomes? It lays down the theoretical, practical, pedagogical and methodological contributions of the study followed by its limitations. It closes with the implications for practice and future research. Chapter 5 concludes this research study by reiterating the importance of integrating theoretical and practical knowledge through CI.

#### **5.2 SUMMARY OF FINDINGS**

The goal of this study is to assess the effectiveness of CI in balancing knowledge and doing in HE to meet market demands. This comparative qualitative study gathered data from two research sites notably the integrated teaching approaches at UOM and the integrated teaching approaches at UOH using inductive comparative case-based techniques for fourteen weeks, that is, a semester-long. The comparative analysis was performed in adherence to Creswell's (2013) data analysis steps. The findings from both research sites (UOM and UOH) support the hypothesis that CI enhances twenty-first-century skills. However, some crucial limitations were noted, such as limited generalizability due to the specific cultural context of the study sites:

## 1. Integrated Teaching Approaches at UOM

This research studied two modules namely ‘The Instructional Design and Multimedia’ and ‘Historical and Philosophical Foundations of Malaysian Education’ at the UOM. If the ‘Instructional Design and Multimedia course followed the interdisciplinary integrated approach, the ‘Historical and Philosophical Foundations of Malaysian Education’ opted for the multidisciplinary integrated approach. Both integrated modules were positively accommodated by the research subjects, were designed using Bloom’s (1956) taxonomy and defied Piaget’s (1960) argument about age being a significant factor in determining which cognitive stage development individuals found themselves in. In the beginning weeks, the students, despite being above the age of 18, were able to tackle tasks in the second and third cognitive operational stages only, while according to Piaget (1960), based on their age, they should be in the fourth cognitive operational stage. The researcher noted an unexpected finding that cognitive development was not strictly age-dependent, which was a significant departure from Piaget’s (1960) theory. This observation underscores the influence of sociocultural factors on learning, as emphasized by Vygotsky (1978). Hence, this study proves that social interactions, rather than age, are crucial in determining cognitive development phases in individuals. Moreover, the planned integrated lessons of both modules in the PDSA stage 1 cycle adopted a slightly diversified route in class with the addition of content to ease students’ understanding. Lecturer A broke down convoluted topics into smaller units and lecturer B resorted to the addition of Islamic content to simplify complexity. Logical factors, time constraints, exhaustion, end-minute class allocation, constant reviewing of lesson plans, unaligned assessments and university rigid rules were the commonly identified challenges by both lecturers throughout the research.

In the ‘Instructional Design and Multimedia’ course, the interdisciplinary teaching approach made the students apply their learned theoretical knowledge, demonstrating not just understanding but also evaluation and synthesis, which are Bloom’s highest cognitive levels. This critical reasoning and problem-solving capability are crucial for leadership roles and addressing societal challenges, as highlighted by Johnson (2020). According to lecturer A and professional A, the students’ active engagement in the learning processes and their successful completion of tasks in their entirety demonstrated their mastery of knowledge application

alongside that of the twenty-first-century skills; competencies which are imperatively sought in employees by the Malaysian and global markets. The students were successful in drawing from connected disciplines to address cognitive tasks which turned them into reflective practitioners reflecting on which theoretical aspects worked or failed in practice, and what could be implemented to complete the tasks successfully in their entirety. Their engagement in praxis fueled their cognitive development, particularly their critical reasoning, creativity and problem-solving. Professional A asserted that the students' tasks were fit to be used in the workforce, portraying the latter's readiness to join the field. CI can therefore be said to have prepared lecturer A's students with the in-demand markets' requirements.

The addition of Islamic content to ease students' comprehension in 'The Historical and Philosophical Foundations of Malaysian Education' multidisciplinary module endorses Vygotsky's (1978) sociocultural theory which argues that learning is inherently dependent on culture which influences what and how students think, thus, implicating the consideration of the effects of culture on learning processes and environments. Though lecturer B acknowledged welcoming the multidisciplinary integrated teaching and its strengths in preparing her students to score good grades, she made it clear that transcending disciplinary divides to help her students meet the market's demands was not her responsibility as a lecturer. According to her, her job as a lecturer is to only transfer 'rudimentary knowledge' to her students. Her assertions contradict significant HE policies namely the Malaysian Education Blueprint (2021-2025), and the Ministry of HE (2023) which urge lecturers to equip students with industry knowledge and mitigate gaps between university and market demands. A perusal of the aforementioned HE policies presents graduate work readiness as a core criterion for university. Further, lecturer B appeared to have failed to master the definition of multidisciplinary teaching as she merely delineated the theories from varying disciplinary areas in a non-unifying framework. By allowing her students to discern how to connect the different disciplinary perspectives in a unified whole, lecturer B could be said to have left her students unattended in their ZPDS wherein they experienced cognitive disequilibrium. Except for student F who felt compelled to research how to connect the varying perspectives, lecturer B's failure in connecting the multiple viewpoints befogged her remaining students who experienced difficulties

in relating the varying disciplinary lenses in their work, a remark which was also highlighted by professional B. Nevertheless, the students admitted to having enjoyed the multidisciplinary integrated knowledge application processes wherein through authentic learning activities they derived comprehensive understanding, developed collaboration, creativity and deeper skills of evaluation, that is, thinking critically beyond the conventional boundaries to address the achievability of different aspects of theories and policies in reality. Although professional B stated that the students could not present their critical arguments in a unifying framework, he affirmed their mastery of twenty-first-century skills and ability to employ a combination of complex expertise, particularly to critically comment on the application of the studied theories in practice through different logical and methodological approaches while dealing with a variety of disciplinary perspectives. Hence, by balancing knowledge and doing, the multidisciplinary teaching practices employed by lecturer B, though failing to connect the diverse disciplines as a whole, can be said to equip her students with the in-demand employability skills, as attested by professional B.

## 2. Integrated Teaching Approaches at UOH

Adhered to Bloom's (1956) taxonomy, both studied courses notably, 'Introduction to Creative Writing' and 'Understanding Drama' at the UOH were happily received by both lecturer C and D and their students. The first eight weeks of the course 'Introduction to Creative Writing' were taught using the interdisciplinary approach and the remaining weeks were taught using the transdisciplinary approach. Contrarily, the 'Understanding Drama' course was instructed using the multidisciplinary approach for the whole of the fourteen weeks. An examination of the set activities in both studied courses revealed that both lecturers C and D began with cognitive activities tallying with Piaget's (1960) preoperational stage with gradual progression towards concrete and formal operational thinking. For a second time, this study proves that age is not a determining factor as to which cognitive operational stage one must belong to.

In the 'Introduction to Creative Writing' course, lecturer C balanced knowledge with doing through simulated work activities and field trips. The students affirmed having fulfilling learning experiences with both the interdisciplinary and transdisciplinary integrated teaching approaches within which they were successful in adapting, accommodating and assimilating new knowledge in their mental repertoire. The activities were set up one stage above the other, thus, they were differentiated and acted as scaffolds for students to master convoluted knowledge in their ZPDs and strike a balance between the latter's mental schemas and their environments. The knowledge application phase highlighted the students' strong engagement in higher-order functioning wherein the emphasis was attaining Bloom's (1956) highest cognitive level. Eventually, besides applying knowledge, the students demonstrated engagement with analyzing, synthesizing and evaluating the newly stored knowledge. This was reflected in their demonstrated ability to act, discuss and negotiate meanings and create informed arguments across various genres incorporating varying disciplinary perspectives in connection with real-life experiences. According to professional C, the set activities in and out of class prepared the students for work as they showed mastery of the required knowledge, skills, and positive behaviours to join the creative writing industry. Consequently, both the interdisciplinary and transdisciplinary approaches prove to prepare lecturer C's students for work. Like lecturers A and B, lecturer C affirmed that integrated teaching is time-consuming and tiring to prepare and would require additional support from the university such as bringing staff from relevant disciplines together to concoct integrated modules or the hiring of an assistant to share the workload with.

Unlike the above three modules, the 'Understanding Drama' course employed game activities for the initial three weeks to actively engage students by, in and with the multidisciplinary aspects of learning. The games proved to improve the students' motivation, knowledge retention, comprehension, and emotional experiences in their application of multidisciplinary knowledge to win the games. Acknowledged by the students themselves, the games acted as scaffolds for them to better comprehend drama, that is, assisting them to identify, organise and sort relevant information which aided them in the subsequent weeks to analyse, evaluate, create, and recreate plays. This finding reveals that the mastery of the lower faculty of Bloom's (1956) taxonomy

influences the mastery of its higher levels and at the same time sheds light on the students' involvement with twenty-first-century skills. The set activities for the subsequent weeks proved to unleash the students' critical minds, creativity, problem-solving and collaborative skills by permitting them to engage in intellectual freedom, that is, sharing, discussing, dissecting, negotiating, evaluating and recreating explored texts across varying disciplines. According to professional D, the multidisciplinary teaching approach of this module prepared the students for the position of screenwriters as their written assignments, dialogues, and projects, apart from comprising minute details that facilitated visual imageries, reflected both in-demand employability skills and technical expertise in media production. The displayed expertise by the students, from the viewpoint of professional D, is what he trained interns for and he even admitted to having learned new media techniques from the students, highlighting the significance of the latter's engagement in intellectual freedom. Therefore, it is proven that the multidisciplinary integrated approach can effectively prepare students for work. Further, like the above lecturers, lecturer D underpinned integrated teaching practices as tiring but he added that it was his job and responsibility to use the time allocated to him for preparing modules wisely. He expressed his interest in trying the other types of integration in his upcoming classes.

Overall, this study demonstrates that CI is effective in balancing knowledge and doing to meet market demands. These findings are significant as they support existing literature on the benefits of integrated learning approaches (Smith, 2018) and highlight the potential of CI to equip students with essential twenty-first-century skills, thereby addressing critical gaps between higher education and workforce requirements. Below exemplify the achieved objectives of this study:

√=Agree

X= Disagree

Table 5.1 The study's achieved objectives

Modules	CI balanced knowledge with doing to meet market demands.	CI developed twenty-first-century/employability skills in learners.	CI was positively received by lecturers.	CI was positively received by students and willing to continue with this teaching approach.
Introduction to Multimedia and Design.	√	√	√	√
The Historical and Philosophical Foundations of Malaysian Education.	√	√	X	√
Introduction to Creative Writing.	√	√	√	√
Understanding Drama.	√	√	√	√

Table 5.2 Lecturers' standpoints

Statements	Lecturer A	Lecturer B	Lecturer C	Lecturer D
Effectiveness of CI in balancing knowledge with doing.	√	√	√	√
Effectiveness of CI in developing twenty-first century/employability skills in students.	√	√	√	√
The willingness of lecturers to transcend disciplinary divides in the future.	Agreed with conditions.	X	Agreed with conditions.	√
The ability of CI to close gaps between university and market demands.	√	√	√	√
Integrating the curriculum to prepare students for work is my responsibility.	√	X	√	√

Table 5.3 Professionals' Standpoints

Statements	Professional A	Professional B	Professional C	Professional D
The ability of CI to equip students with theoretical and practical knowledge.	√	√	√	√
The ability of CI to help students master twenty-first-century/employability skills.	√	√	√	√
The ability of CI to produce graduates' work readiness.	√	√	√	√
The ability of CI to cultivate the market's expected positive behaviours in students.	√	√	√	√

Table 5.4 The challenges encountered by lecturers

Lecturers	Time constraints	Heavy workload / Preparation	Assessments	University traditional rules.	Continue with CI against all odds.
A	√	√	√	√	Agreed with conditions.
B	√	√	√	√	X
C	√	√	X	X	Agreed with conditions.
D	X	√	X	X	√

Table 5.5 Unexpected Findings

1. Cognitive ability is not determined by age, but developed through social exchanges, collaborative exercises, and constructive learning processes.
2. CI helps students develop technical, job-specific skills by balancing knowledge with doing.
3. CI instills market-desired positive behaviours in students.

The following presents the contributions of this study to literature.

### **5.3 CONTRIBUTIONS OF THIS STUDY**

The findings of this study have theoretically, practically, pedagogically and methodologically contributed to existing literature. Each of their contributions is explicitly elucidated below:

#### **1. Theoretical Contribution**

This study defines CI as a teaching approach that involves the intentional and systematic blending of various related disciplinary areas to create cohesive, interconnected learning experiences for students. Integrated units are designed to encourage deeper comprehension, twenty-first-century/employability skills and meaningful connections. CI can take three forms notably thematic, interdisciplinary and multidisciplinary strategies. To clear confusion between multidisciplinary and interdisciplinary, two terms that are often misunderstood or interchangeably used for each other in literature, this study highlights the demarcations between them. The multidisciplinary integrated approach refers to the connection of varied drawn knowledge and skills in studying academic topics while the interdisciplinary integrated approach evaluates, synthesises and coordinates content across disciplines in a methodically lucid whole. Further, based on the analysed findings, this study defines CI as an end-product as a representation of a comprehensive and unifying educational framework that prepares students for twenty-first-century/employability skills while fostering their understanding of the interconnected nature of knowledge and their surrounding environment. The established definitions are meant to cast away uncertainties revolving around the varying interpretations of CI as an approach and end product. Moreover, this study proves the effectiveness of constructivist teaching approaches, Bloom's (1956) taxonomy, the PDSA cycle (Deming, 1950) and the IIIT's (1989) model as relevant to the designing, implementation and outcome of integrated curricula.

## 2. Practical and Pedagogical Contribution

This study underscores CI's numerous practical and pedagogical contributions to enhance teaching and learning experiences. Making learning relevant to students' reality, developing students' higher-order thinking faculties namely problem-solving, logical reasoning, creativity and innovation across varied related disciplinary areas leading to a more holistic comprehension of topics, fostering students' learning interest, motivation, cultural competence and empathy through the exploration of multiple perspectives and worldviews and preparing the latter to meet existing market demands are the key contributions of CI to pedagogy. Drawing from these findings, it can be said that CI contributes to a more meaningful, interactive and efficient educational experience that prepares students to thrive, personally and professionally, in the existing interconnected and complex world.

## 3. Methodological Contribution

This study employs a comparative multiple-case study design to collect empirical evidence. The gathered qualitative findings contribute significantly to the literature on CI by giving rich, comprehensive, contextually situated viewpoints into the complex multi, inter, and trans-disciplinary learning processes, hence, contributing to the ongoing furtherance of the aforementioned integrated practices. Also, the findings can aid academics in meaningfully designing and delivering integrated teaching units that foster cohesive connections across disciplines. Since the majority of available research on CI in existing literature adheres to the quantitative research paradigm, this study systematically scrutinizes qualitative data before generating findings that emerge from the data itself. Therefore, the adopted qualitative approach of this study can be stated to underscore nuanced insights on the operations, mechanisms and upshots of CI based on empirical evidence while closing the gap of the scant availability of qualitative findings on CI. The findings can serve as references for academics in the field willing to extend the scope of this study.

The following presents the limitations of the study.

#### **5.4 LIMITATIONS OF THE STUDY**

Despite proactive steps such as the provision of a leaflet comprising the definition of CI alongside that of its three types that this study adheres to, preceded by a verbal elucidation of the same in unambiguous English to the lecturers, lecturer B failed in connecting the diverse introduced disciplinary perspectives in her multidisciplinary teaching. Her failure to master the definition of the multidisciplinary approach provided incomplete data, thus, compromising the quality and validity of the gathered data in her case while restraining the depth and breadth of data obtained from the research. This led the researcher not to lay hands on significant nuances and insights related to the studied topic.

Moreover, although the study adopted the PDSA cycle to plan and implement integrated lessons at the UOM and the UOH because the cycle has been evidenced to be practically effective in any disciplinary sphere and for the successful implementation of innovative changes across educational landscapes (Lewis, 2015; OECD Future of Education and Skills 2030, 2018), its findings are context-specific and are impacted by cultural norms and institutional structures which may not appear in other geographical locations. This restrained the transferability and applicability of the study's findings to larger populations and other geographical sites which may elicit different sets of data. The following presents the implications for practice.

#### **5.5 IMPLICATIONS FOR PRACTICE**

Based on the findings received, this dissertation has implications for practice for concerned subjects who hold key positions in planning, implementing and evaluating university courses.

To begin with, to address the gap between university curricula and market demands, it is implicated that university administrators integrate interdisciplinary and transdisciplinary approaches into their programs. Employers and policy-makers should collaborate with educational institutions to ensure that graduates possess the

required skills. Additionally, future research should explore the long-term impacts of CI on career success.

Since the lecturers in this study identified resource allocation as a hurdle to integrating lessons, this study implicates the need for university stakeholders to provide resources notably cross-curricula research initiatives, collaboration among staff within and across faculties, and administrative, technological and funding support services to ease the processes and implementation of CI in HE. Collaboration across faculties and programs can hinder universities from having duplicated modules while maximizing staff competency and the university's resources.

Moreover, this study showcases that CI requires strategic development of academic courses. It therefore implicates university program developers to calibrate universities' aims, visions and priorities with HE policies, accreditation standards and market demands. Lecturers' and employers' viewpoints are also solicited to be catered in for the structuring of multi-, inter- and trans-disciplinary integrated units to promote shared goals of integrated teaching and learning practices and academic accomplishments and ensure the relevancy of the designed courses to the existing market demands. The planned courses should be susceptible to changes notably in incorporating emerging trends or digital evolution in society. That is, integrated lessons should have a flexible and compliant nature.

Furthermore, the planning and implementation phases of CI, as highlighted by this study, mark a cultural shift at universities. Training lecturers with the right knowledge, expertise and demeanours to embrace this change positively is crucial as they are key actors in planning integrated lessons, particularly writing learning objectives that tap into varied related disciplines, choosing the most appropriate in-class materials, setting up cross-curricula diagnostic, formative and summative assessments while using hands-on teaching strategies. The training should be ongoing and also familiarise lecturers with the different constructivist pedagogical strategies that they can employ to teach integrated lessons alongside the varied assessments and evaluation methods which involve how to appraise students' learning across various disciplines through authentic exercises mirroring reality or job-simulated ones.

Lastly, this study proves that CI can equip students with twenty-first-century/employability skills notably problem-solving, logical reasoning, creativity, innovation, negotiation, collaboration, digital, interpersonal and respect. Since these transferable skills are in demand by existing employers across the globe, it can be said that CI prepares students to thrive in rapidly evolving job markets. Positioning market demands with in-class integrated units on the same footing aids students in having a steady transition from university to the workplace. This is why this dissertation implicates the use of CI in HE to meet market demands.

The following presents implications for future research.

## **5.6 IMPLICATIONS FOR FUTURE RESEARCH**

This study has implications for future research on pedagogy and integrated studies. Future research should compare the effectiveness of interdisciplinary, multidisciplinary, and transdisciplinary approaches on students' academic performance and employability. New doctoral students could explore topics such as the impact of CI on different cultural contexts or the role of technology in integrated teaching methods.

Research can also examine the extent to which lecturers' ongoing professional development and training prepare them to corroborate CI and implement it in their practices. Additionally, the university's support in terms of infrastructure, resources, funding and manpower in promoting CI is a research area to be explored. The cultural and organizational hurdles can be underscored followed by empirically tested propositions to overcome them.

Further, studies can focus on the planning of well-grounded, vigorous and reliable assessment and evaluation tools to gauge learning objectives and outcomes, the successful implementation of integrated lessons alongside the impact of CI on students' academic attainment and employability.

Lastly, longitudinal research can scrutinise the longstanding and feasible impacts of CI in HE to meet market demands. The career paths of graduates through integrated programmes can be trailed to analyse their professional ascendancies, contributions to their sphere and involvements with integrated practices at work. Addressing these points can contribute to the advancement of educational theory and practice.



## REFERENCES

- Abdullah, F., Majid, A., Ibrahim Numen, Aida Kesuma Azmin, Zaiton Abd. Rahim, Zuraini Denan, & Muhammet Emin Sisman. (2017). Case study on perspicacity of collaborative learning experiences. *IOP Conference Series. Materials Science and Engineering*, 291, 012006–012006. <https://doi.org/10.1088/1757-899x/291/1/012006>
- Aberdeen, T. (2009). Yin, R. K. (2009). Case study research: Design and methods (4th Ed.). Thousand Oaks, CA: Sage. *The Canadian Journal of Action Research*, 14(1), 69–71. <https://doi.org/10.33524/cjar.v14i1.73>
- Aheisibwe, I. (2021). Bridging the education gap in higher institutions of learning using Bloom's taxonomy of educational objectives. *African Educational Research Journal*, 9(1), 69–74. <https://doi.org/10.30918/aerj.91.20.213>
- Anderson-Levitt, K. M. (2008). *Globalization and Curriculum*. In F. M. Connelly, M. F. He, & J. Phillion (Eds.), *The Sage Handbook of Curriculum and Instruction* (pp. 349-368). California Sage Publications. - References - Scientific Research Publishing. (n.d.). [www.scirp.org](http://www.scirp.org). [https://www.scirp.org/\(S\(351jmbntvnsjt1aadkposzje\)\)/reference/ReferencesPapers.aspx?ReferenceID=1658804](https://www.scirp.org/(S(351jmbntvnsjt1aadkposzje))/reference/ReferencesPapers.aspx?ReferenceID=1658804)
- Anjum, S. (2020). Impact of internship programs on professional and personal development of business students: a case study from Pakistan. *Future Business Journal*, 6(1). [springeropen. https://doi.org/10.1186/s43093-019-0007-3](https://doi.org/10.1186/s43093-019-0007-3)
- An exploration of transdisciplinarity in the PYP (2015)*. (2020, December 2). International Baccalaureate®. <https://www.ibo.org/research/curriculum-research/pyp-studies/an-exploration-of-the-policy-and-practice-of-transdisciplinarity-in-the-international-baccalaureate-primary-years-programme-2015/>
- Annala, J., Lindén, J., Mäkinen, M., & Henriksson, J. (2021). Understanding academic agency in curriculum change in higher education. *Teaching in Higher Education*, 1–18. <https://doi.org/10.1080/13562517.2021.1881772>

- Andrew, G., & Stephen, B. (2018). Pedagogical and cost advantages of a multidisciplinary approach to delivering practical teaching. In *The Interdisciplinary Future of Engineering Education* (pp. 33-48). Routledge.
- Akpan, F. T. (2020). *Uncovering barriers of technology integration in management education curricula: An exploratory study* (Order No. 28149475). Available from ProQuest Dissertations & Theses Global. (2456881767). Retrieved from <http://210.48.222.80/proxy.pac/dissertations-theses/uncovering-barriers-technology-integration/docview/2456881767/se->
- Atkinson-Toal, A. (2024). Student value of a transdisciplinary approach to curriculum development. *Journal of Marketing Education*. <https://doi.org/10.1177/02734753241288182>
- Bailey, P., Daley, C. E., & Onwuegbuzie, A. J. (1999). Foreign Language Anxiety and Learning Style. *Foreign Language Annals*, 32(1), 63–76. <https://doi.org/10.1111/j.1944-9720.1999.tb02376.x>
- Bates, A. W. (2005). *Technology, E-Learning and Distance Education*. London Routledge. - References - Scientific Research Publishing. (n.d.). Scirp.org. Retrieved April 8, 2023, from <https://scirp.org/reference/references/papers.aspx?referenceid=1140907>
- Barnett, R., Parry, G., & Coate, K. (2001). Conceptualising Curriculum Change. *Teaching in Higher Education*, 6(4), 435–449. <https://doi.org/10.1080/13562510120078009>
- Beane, J. A. (1997). Curriculum Integration: Designing the Core of Democratic Education. In *ERIC*. Teachers College Press, P. <https://eric.ed.gov/?id=ED461591>
- Becker, K. & Park, K. (2011). “Effects of integrative approaches among science, technology, engineering, and mathematics (STEM) subjects on students’ learning: A preliminary meta-analysis.” *Journal of STEM Education*, Volume 12. (n.d.). [Www.sciepub.com](http://www.sciepub.com). Retrieved August 21, 2023, from <http://www.sciepub.com/reference/73145>

- Benade, L. (2016). Is the classroom obsolete in the twenty-first century? *Educational Philosophy and Theory*, 49(8), 796–807. <https://doi.org/10.1080/00131857.2016.1269631>
- Bennett, D., Rowley, J., Dunbar-Hall, P., Hitchcock, M., & Blom, D. (2016). Electronic portfolios and learner identity : an ePortfolio case study in music and writing. *Journal of Further and Higher Education*, 40(1), 107-124. doi: 10.1080/0309877X.2014.895306.
- Bennett, D., Rowley, J., Dunbar-Hall, P., Hitchcock, M., & Blom, D. (2016). Electronic portfolios and learner identity : an ePortfolio case study in music and writing. *Journal of Further and Higher Education*, 40(1), 107-124. doi: 10.1080/0309877X.2014.895306.
- Bennett, D., Rowley, J., Dunbar-Hall, P., Hitchcock, M., & Blom, D. (2016). Electronic portfolios and learner identity : an ePortfolio case study in music and writing. *Journal of Further and Higher Education*, 40(1), 107-124. doi: 10.1080/0309877X.2014.895306
- Berg, C. (n.d.). Why study history?: An examination of undergraduate students' notions and perceptions about history. *Historical Encounters: A Journal of Historical Consciousness, Historical Cultures, and History Education*. [https://www.academia.edu/37319073/Why\\_study\\_history\\_An\\_examination\\_of\\_undergraduate\\_students\\_notions\\_and\\_perceptions\\_about\\_history](https://www.academia.edu/37319073/Why_study_history_An_examination_of_undergraduate_students_notions_and_perceptions_about_history)
- Bernstein, B. (1971) *Class, Codes and Control Theoretical Studies towards a Sociology of Language*. Routledge & Kegan Paul, London. - References - *Scientific Research Publishing*. (2015). Scirp.org. [https://www.scirp.org/\(czech2tfqyw2orz553k1w0r45\)/reference/ReferencesPapers.aspx?ReferenceID=1799509](https://www.scirp.org/(czech2tfqyw2orz553k1w0r45)/reference/ReferencesPapers.aspx?ReferenceID=1799509)
- Billett, S. (2001). Learning through work: workplace affordances and individual engagement. *Journal of Workplace Learning*, 13(5), 209. [https://www.academia.edu/16918389/Learning\\_through\\_work\\_workplace\\_affordances\\_and\\_individual\\_engagement](https://www.academia.edu/16918389/Learning_through_work_workplace_affordances_and_individual_engagement)

- Bolak, K., Bialach, D., & Dunphy, M. (2005). Standards-Based, Thematic Units Integrate the Arts and Energize Students and Teachers. *Middle School Journal (J1)*, 36(5), 9–19. <https://eric.ed.gov/?id=EJ752840>
- Boyer, E. L. (1990). Scholarship Reconsidered: Priorities of the Professoriate. In *ERIC*. Princeton University Press, 3175 Princeton Pike, Lawrenceville, NJ 08648. <https://eric.ed.gov/?id=ED326149>
- Bloom, B.S. (1956) *Taxonomy of Educational Objectives, Handbook The Cognitive Domain*. David McKay, New York. - References - Scientific Research Publishing. (2015). Scirp.org. [https://www.scirp.org/\(S\(i43dyn45teexjx455qlt3d2q\)\)/reference/ReferencesPapers.aspx?ReferenceID=1506705](https://www.scirp.org/(S(i43dyn45teexjx455qlt3d2q))/reference/ReferencesPapers.aspx?ReferenceID=1506705)
- Bradley, S. (2022, August 26). *Five graduates on why they regret going to university*. Metro. <https://metro.co.uk/2022/08/26/five-graduates-on-why-they-regret-going-to-university-17232285/>
- Bressington, D. T., Wong, W., Lam, K. K. C., & Chien, W. T. (2018). Concept mapping to promote meaningful learning, help relate theory to practice and improve learning self-efficacy in Asian mental health nursing students: A mixed-methods pilot study. *Nurse Education Today*, 60, 47–55. <https://doi.org/10.1016/j.nedt.2017.09.019>
- Brøgger, K. (2014). The ghosts of higher education reform: on the organisational processes surrounding policy borrowing. *Globalisation, Societies and Education*, 12(4), 520–541. <https://doi.org/10.1080/14767724.2014.901905>
- Button, L. (2021). 21st-Century Teachers and Learners – Meeting the Needs of All Learners. *Oer.pressbooks.pub*. <https://oer.pressbooks.pub/curriculumessentials/chapter/chapter-21st-century-teachers-and-learners-meeting-the-needs-of-all/>
- Campbell, C., & Henning, M. (2010). Planning, Teaching, and Assessing Elementary Education Interdisciplinary Curriculum. *International Journal of Teaching and Learning in Higher Education*, 22(2), 179–186. <https://files.eric.ed.gov/fulltext/EJ930151.pdf>

- Carnevale, A., N. Smith, M. Melton, and E. Price. 2015. *Learning While Earning: The New Normal*. Washington DC, USA: Georgetown University Centre of Education and the Workforce.
- Case, R. (1972). Validation of a neo-Piagetian mental capacity construct. *Journal of Experimental Child Psychology*, 14(2), 287–302. [https://doi.org/10.1016/0022-0965\(72\)90051-3](https://doi.org/10.1016/0022-0965(72)90051-3)
- Case, R. (1991). The Anatomy of Curricular Integration. *Canadian Journal of Education / Revue Canadienne de L'éducation*, 16(2), 215. <https://doi.org/10.2307/1494974>
- Cheang, M., & Yamashita, G. L. (2023). Employers' Expectations of University Graduates as They Transition into the Workplace. *European Journal of Education*, 6(2), 22–32. <https://doi.org/10.2478/ejed-2023-0013>
- Clapton, G., & Cree, V. (2004). Integration of learning for practice: Literature review. In *Learning for effective and ethical practice*. Edinburgh: Scottish Institute for Excellence in Social Work Education.
- Collins, C., Landivar, L. C., Ruppner, L., & Scarborough, W. J. (2020). COVID-19 and the Gender Gap in Work Hours. *Gender, Work & Organization*, 28(1), 101–112. <https://doi.org/10.1111/gwao.12506>
- COMMENT | *Has our higher education been mutilated?* (2022, January 27). Malaysiakini. <https://www.malaysiakini.com/columns/608579>
- Creswell, J. W. (2007). *Qualitative Inquiry and Research Design: Choosing among Five Traditions* (3rd ed.). Sage.
- Davey T, Baaken T, Galan-Muros V, et al. (2011) *Study on the Cooperation between Higher Education Institutions and Public and Private Organisations in Europe*. European Commission, European Institute of Innovation and Technology; economic partnership. Public open tender EAC/37/2009, 30 August. Germany: Science-to-Business Marketing Research Centre.

- Deming, W.E. (1993) *Total Quality Management in Higher Education*. Management Services, 35, 18-20. - References - Scientific Research Publishing. (n.d.). Wwww.scirp.org. Retrieved October 29, 2022, from [https://www.scirp.org/\(S\(lz5mqp453edsnp55rrgct55\)\)/reference/ReferencesPapers.aspx?ReferenceID=1932474](https://www.scirp.org/(S(lz5mqp453edsnp55rrgct55))/reference/ReferencesPapers.aspx?ReferenceID=1932474)
- Dervin, F. (2020). Creating and combining models of Intercultural Competence for teacher education/training. *Intercultural Competence in the Work of Teachers*, 57–72. <https://doi.org/10.4324/9780429401022-5>
- Dewey, J. (1902). *The child and the curriculum*. Chicago University of Chicago Press. - References - Scientific Research Publishing. (n.d.). Wwww.scirp.org. [https://www.scirp.org/\(S\(i43dyn45teexjx455qlt3d2q\)\)/reference/ReferencesPapers.aspx?ReferenceID=654537](https://www.scirp.org/(S(i43dyn45teexjx455qlt3d2q))/reference/ReferencesPapers.aspx?ReferenceID=654537)
- Dewey, J. (1904). The Relation of Theory to Practice in Education. *Teachers College Record: The Voice of Scholarship in Education*, 5(6), 9–30. <https://doi.org/10.1177/016146810400500601>
- Dewey, J. (1904/1974). The relation of theory to practice in education. In R. Archambault (Ed.), *John Dewey on Education: Selected Writings* (pp. 315-338). Chicago, IL: University of Chicago Press.
- Dewey, J. (1938). *Experience and Education*. New York Macmillan Company. - References - Scientific Research Publishing. (n.d.). Wwww.scirp.org. <https://www.scirp.org/reference/ReferencesPapers?ReferenceID=1610444>
- Dewey, J. (1933). *How We Think A Restatement of the Relation of Reflective Thinking to the Educative Process*. Boston, MA D.C. Heath & Co Publishers. - References - Scientific Research Publishing. (n.d.). Wwww.scirp.org. <https://www.scirp.org/reference/ReferencesPapers?ReferenceID=1434306>
- Dewey (1966). *Democracy and Education An Introduction to the Philosophy of Education*. New York Free Press. - References - Scientific Research Publishing. (n.d.). Wwww.scirp.org. <https://www.scirp.org/reference/referencespapers?referenceid=1658811>

- Dewey, J. F. (1988). Extensional collapse of orogens. *Tectonics*, 7(6), 1123–1139. <https://doi.org/10.1029/tc007i006p01123>
- Dikli, S. (2003). Assessment at a Distance: Traditional vs. Alternative Assessments. *Turkish Online Journal of Educational Technology*. <https://www.semanticscholar.org/paper/Assessment-at-a-Distance%3A-Traditional-vs.-Dikli/53934fd98a7712b2ed25d8dd3772006601c2356b>
- Dorfman, R. A. (1996). *Clinical social work: Definition, practice and vision*. New York, NY: Brunner/Mazel.
- Drake, S. M. (1998). *Creating Integrated Curriculum: Proven Ways To Increase Student Learning*. In *ERIC*. Corwin Press, Inc. <https://eric.ed.gov/?id=ED426507>
- Drake, S., & Reid, J. (2010). *Integrated Curriculum Increasing relevance while maintaining accountability WHAT WORKS? Research into Practice A research-into-practice series produced by a partnership between the Literacy and Numeracy Secretariat and the Ontario Association of Deans of Education The Literacy and Numeracy Secretariat*. [http://www.edugains.ca/resources/LIT/ResourceCollection/What%20Works/WW\\_Integrated\\_Curriculum.pdf](http://www.edugains.ca/resources/LIT/ResourceCollection/What%20Works/WW_Integrated_Curriculum.pdf)
- Drake, S. M., & Savage, M. J. (2016). Negotiating Accountability and Integrated Curriculum from a Global Perspective. *International Journal of Learning, Teaching and Educational Research*, 15(6). <http://www.ijlter.org/index.php/ijlter/article/view/639>
- Fahimirad, M., Nair, P. K., Kotamjani, S. S., Mahdinezhad, M., & Feng, J. B. (2019). Integration and Development of Employability Skills into Malaysian Higher Education Context: Review of the Literature. *International Journal of Higher Education*, 8(6), 26. <https://doi.org/10.5430/ijhe.v8n6p26>
- Finch, D. J., Peacock, M., Levallet, N., & Foster, W. (2016). A dynamic capabilities view of employability. *Education + Training*, 58(1), 61–81. <https://doi.org/10.1108/et-02-2015-0013>

- Fogarty, R. (1991). Ten Ways to Integrate Curriculum. *Educational Leadership*, 49(2), 61–65. <https://eric.ed.gov/?id=EJ432787>
- Freire, P. (1970). Cultural Action and Conscientization. *Harvard Educational Review*, 40(3), 452–477. <https://doi.org/10.17763/haer.40.3.h76250x720j43175>
- Freire, P. (1985). *Pedagogy of the oppressed*. Penguin Books.
- Future Skills You'll Need In Your Career By 2030 – SIL UI | Sekolah Ilmu Lingkungan Universitas Indonesia*. (n.d.). Retrieved April 25, 2024, from <https://sil.ui.ac.id/en/future-skills-youll-need-in-your-career-by-2030/>
- Gan, K. H., Teoh, K. B., Cheah, Z. B., Teh, W. X., Tan, Q. Y., Ng, N., Goh, Y. L., Prerna, K., & Kanoujiya, S. D. (2024). A Study on Unemployment rate of Youth Graduates Student in Malaysia. *Journal of the Community Development in Asia*, 7(2), 1–13. <https://doi.org/10.32535/jcda.v7i2.2113>
- Gouëdard, P., Pont, B., Hyttinen, S., & Huang, P. (2020). *Organisation for Economic Co-operation and Development EDU/WKP(2020)27 Curriculum Reform: A Literature Review To Support Effective Implementation OECD Working Paper No. 239*. [https://one.oecd.org/document/EDU/WKP\(2020\)27/En/pdf](https://one.oecd.org/document/EDU/WKP(2020)27/En/pdf)
- Gismondi, M. (2021, November 22). *Why universities are failing to prepare students for the job market*. CBC. <https://www.cbc.ca/radio/ideas/why-universities-are-failing-to-prepare-students-for-the-job-market-1.6208196>
- Guha, M. (2006). *The Sage Handbook of Qualitative Research* (3rd edition)2006138Edited by Norman K. Denzin and Yvonna S. Lincoln. The Sage Handbook of Qualitative Research (3rd edition). Thousand Oaks, CA and London: Sage Publications 2005. xix+1210 pp., ISBN: 0 7619 2753 3 £85/\$130. *Reference Reviews*, 20(3), 25–26. <https://doi.org/10.1108/09504120610655394>

- Hall, A. (2020, February 5). *Brit students feel “pressured” to go to uni and most regret it, poll shows*. Mirror. <https://www.mirror.co.uk/news/uk-news/brit-students-feel-pressured-go-21438538>
- Hamilton, D., McKechnie, J., Edgerton, E., & Wilson, C. (2020). Immersive virtual reality as a pedagogical tool in education: a systematic literature review of quantitative learning outcomes and experimental design. *Journal of Computers in Education*, 8(1). <https://doi.org/10.1007/s40692-020-00169-2>
- Hardin-Ramanan, S., Gopee, S., Rowtho, V., & Charoux, O. (2020). Graduate Work-Readiness in Mauritius: A multi-stakeholder approach. *Journal of Teaching and Learning for Graduate Employability*, 11(1), 93. <https://doi.org/10.21153/jtlge2020vol11no1art937>
- Hargreaves, A., & Moore, S. (2000). Curriculum Integration and Classroom Relevance: A Study of Teachers’ Practice. *Journal of Curriculum and Supervision*, 15(2), 89–112. <https://eric.ed.gov/?id=EJ598992>
- Harris-Reeves, B., & Mahoney, J. (2017). Brief work-integrated learning opportunities and first-year university students’ perceptions of employability and academic performance. *Australian Journal of Career Development*, 26(1), 32–37. <https://doi.org/10.1177/1038416217697974>
- Heller, R. F. (2021). The Problem with Universities Today. In *Springer briefs in education* (pp. 5–37). [https://doi.org/10.1007/978-981-16-6506-6\\_2](https://doi.org/10.1007/978-981-16-6506-6_2)
- Hero, L.-M., & Lindfors, E. (2019). Students’ learning experience in a multidisciplinary innovation project. *Education + Training*, 61(4), 500–522. <https://doi.org/10.1108/et-06-2018-0138>
- Hutchings, P. (1990, June). Assessment and the way it works: Closing plenary address, Association of Higher Education Conference on Assessment, Washington, DC

- Ibrahim, M. R. (2015). The Integration of Islam and Science: Al-Ghazali on Causality Revisited. *Ulum Islamiyyah*, 15, 157–165. <https://doi.org/10.33102/uij.vol15no.240>
- IIT: Islamization of Knowledge: General Principles and Workplan: Five steps of Curriculum Integration* (1989), International Institute of Islamic Thought, Herndon.
- Kapur R. (2018). *Factors Influencing the Student ' s Academic Performance in Secondary Schools in India*. (n.d.). Wwww.sciepub.com. <https://www.sciepub.com/reference/298257>
- Karimova, G.Z., & Rutti, R.M. (2018). Experiential Interdisciplinary Approach to Teaching: A Case of Collaboration between Entrepreneurship and Media Production. *Journal of Entrepreneurship Education*, 21, 1.
- Kemmis, S., & Smith, T. J. (2008). *Enabling praxis Challenges for education*. Rotterdam Sense Publishers. - References - Scientific Research Publishing. (n.d.). Wwww.scirp.org. Retrieved August 21, 2023, from [https://www.scirp.org/\(S\(351jmbntvnsjt1aadkposzje\)\)/reference/ReferencesPapers.aspx?ReferenceID=590052](https://www.scirp.org/(S(351jmbntvnsjt1aadkposzje))/reference/ReferencesPapers.aspx?ReferenceID=590052)
- Kim, Y. C., & Jung, J.-H. (2019). *Shadow Education as Worldwide Curriculum Studies*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-03982-0>
- Kramer, B. J. (1998). Preparing Social Workers for the Inevitable. *Journal of Social Work Education*, 34(2), 211–227. <https://doi.org/10.1080/10437797.1998.10778918>
- Langley, G. J., Moen, R. D., Nolan, K. M., Nolan, T. W., Norman, C. L., & Provost, L. P. (2009). *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance*. In *Google Books*. John Wiley & Sons. <https://books.google.com/books?hl=en&lr=&id=kE4aEnZgBO8C&oi=fnd&pg=PR11&ots=8sjNxLy4bS&sig=yb8vniUVJALBooBrTPlgSicoFZg>

- Leon, C. L. D., Mina, J. C., Vitug, E. G., Vega, N. C., Galano, J. A., Flores, R. B., Caymo, E., & Magtalas, K. B. (2021). Trailing the Gap between the Competencies of Bachelor of Science in Business Administration Graduates with Industry Demands: As Viewed by the Employers. *Open Access Library Journal*, 8(12), 1–22. <https://doi.org/10.4236/oalib.1108193>
- LET'S TALK: "Blinkeducation." (2021, September 30). Le Mauricien. <https://www.lemauricien.com/le-mauricien/lets-talk-blinkeducation/449242/>
- Lewis, C. (2015). What Is Improvement Science? Do We Need It in Education? *Educational Researcher*, 44(1), 54–61. <https://doi.org/10.3102/0013189x15570388>
- Lim, R. B. T., Tan, C. G. L., Voo, K., Lee, Y. L., & Teng, C. W. C. (2024). Student perspectives on interdisciplinary learning in public health education: insights from a mixed-methods study. *Frontiers in Public Health*, 12, 1516525. <https://doi.org/10.3389/fpubh.2024.1516525>
- Liu, Z., Wu, W., & Jiang, Q. (2020). Wentishi xuexi dui daxuesheng pipanxingsiwei de yingxiang yanjiu-jiyu guoneiwai 31 xiang yanjiu de yuanfenxi [The Influence of PBL on Critical Thinking for Undergraduates: a meta-analysis based on 31 domestic and abroad studies]. *Higher Education Exploration*, 3, 43-49.
- Liotard, J.-F., Bennington, G., Brian Massumi Foreword, & Jameson, F. (2011). *The Postlll odern Condition: A Report on Kno-wled g e Translation from the French by*. [https://monoskop.org/images/e/e0/Liotard\\_Jean-Francois\\_The\\_Postmodern\\_Condition\\_A\\_Report\\_on\\_Knowledge.pdf](https://monoskop.org/images/e/e0/Liotard_Jean-Francois_The_Postmodern_Condition_A_Report_on_Knowledge.pdf)
- Malaysia Education Development Plan 2015-2025. (n.d.). Jpt.mohe.gov.my. <https://jpt.mohe.gov.my/portal/index.php/en/corporate/policy-documents/16-malaysia-education-development-plan-2015-2025>
- Malaysia's Educational Reform 2023: Paving the Path to Success. (n.d.). Taylors University. <https://university.taylors.edu.my/en/student-life/news/2023/malaysia-educational-reform-2023-paving-the-path-to-success.html>

- Marcus, B. (2021). “Faking” is Neither Good Nor Bad, It Is a Misleading Concept: A Reply to Tett and Simonet (2021). *Personnel Assessment and Decisions*, 8(1). <https://doi.org/10.25035/pad.2022.01.004>
- Maslow, A. (1943). *A Theory of Human Motivation*. Yorku.ca; Psychological Review. <https://psychclassics.yorku.ca/Maslow/motivation.htm>
- Mendenhall, M.E. (2007). Confronting the challenge of developing global leaders. In M.Higano & A. Bird (eds). *Introducing to business leadership*, Nihon Hyoronsha, Tokyo, 189-206
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis An Expanded Sourcebook*. Thousand Oaks, CA Sage Publications. - References - Scientific Research Publishing. (n.d.). Wwww.scirp.org. [https://www.scirp.org/\(S\(i43dyn45teexjx455qlt3d2q\)\)/reference/ReferencesPapers.aspx?ReferenceID=1423956](https://www.scirp.org/(S(i43dyn45teexjx455qlt3d2q))/reference/ReferencesPapers.aspx?ReferenceID=1423956)
- Mind in Society* — L. S. Vygotsky, Michael Cole, Vera John-Steiner, Sylvia Scribner, Ellen Souberman. (2019). Harvard.edu. <https://www.hup.harvard.edu/catalog.php?isbn=9780674576292>
- Ministry of Economy. (2021). *Twelfth Malaysia Plan, 2021-2025*. RMKE12.Ekonomi.gov.my. <https://rmke12.ekonomi.gov.my/en>
- Mishler, E. G. (1986). *Research interviewing Context and narrative*. Cambridge, MA Harvard University Press. - References - Scientific Research Publishing. (n.d.). Wwww.scirp.org. [https://www.scirp.org/\(S\(351jmbntvnsjt1aadkozje\)\)/reference/referencespapers.aspx?referenceid=244034](https://www.scirp.org/(S(351jmbntvnsjt1aadkozje))/reference/referencespapers.aspx?referenceid=244034)
- Niemelä, M. (2022). Subject matter specific curriculum integration: A quantitative study of finnish student teachers’ integrative content knowledge. *Journal of Education for Teaching*, 48(2), 1–13. <https://doi.org/10.1080/02607476.2021.1989288>

- Niemelä, M. A., Niemi, K., Eero Salmenkivi, & Stones, A. (2025). Powers of knowledge in secondary religious education curricula of Sweden, England and Finland. *Journal of Curriculum Studies*, 1–19. <https://doi.org/10.1080/00220272.2025.2476941>
- Nordin, T. A., & Dan, N. (2002). *Pendidikan dan Pembangunan Manusia: Pendekatan Bersepadu, Bandar Badu Bangi: As Syabab Media*
- Oraison, H., Konjarski, L., Howe, S., & Victoria University. (2019). Does university prepare students for employment? Alignment between graduate attributes, accreditation requirements and industry employability criteria. In *Journal of Teaching and Learning for Graduate Employability* (Vols. 1–1, pp. 173–194). <https://files.eric.ed.gov/fulltext/EJ1235685.pdf>
- Orak, J. (2016). Education from the perspective of Islamic and Western scientists (Case study: Ghazali and Plato).
- Orr, P., Forsyth, L., Caballero, C., Rosenberg, C., & Walker, A. (2023). A systematic review of Australian higher education students' and graduates' work readiness. *Higher Education Research & Development*, 42(7), 1714–1731. <https://doi.org/10.1080/07294360.2023.2192465>
- Pharo, E. J., Davison, A., Warr, K., Nursey-Bray, M., Beswick, K., Wapstra, E., & Jones, C. (2012). Can teacher collaboration overcome barriers to interdisciplinary learning in a disciplinary university? A case study using climate change. *Teaching in Higher Education*, 17(5), 497–507. <https://doi.org/10.1080/13562517.2012.658560>
- Piaget, J. (1978). *A formação do símbolo na criança Imitação, jogo, sonho, imagem e representação* (3. ed.). Rio de Janeiro Zahar. - References - Scientific Research Publishing. (n.d.). [www.scirp.org](http://www.scirp.org). Retrieved August 22, 2023, from [https://www.scirp.org/\(S\(i43dyn45teexjx455qlt3d2q\)\)/reference/referencespapers.aspx?referenceid=2017626](https://www.scirp.org/(S(i43dyn45teexjx455qlt3d2q))/reference/referencespapers.aspx?referenceid=2017626)
- Piaget, J. (1972). Intellectual Evolution from Adolescence to Adulthood. *Human Development*, 15(1), 1–12. <https://doi.org/10.1159/000271225>

- Piaget, J. (1960). *The General Problem of the Psychobiological Development of the Child*. In J. Tanner, & B. Inhelder (Eds.), *Discussions on Child Development* (Vol. 4, pp. 3e27). London Tavistock. - References - Scientific Research Publishing. (n.d.). Wwww.scirp.org. [https://www.scirp.org/\(S\(i43dyn45teexjx455qlt3d2q\)\)/reference/referencespapers.aspx?referenceid=2277287](https://www.scirp.org/(S(i43dyn45teexjx455qlt3d2q))/reference/referencespapers.aspx?referenceid=2277287)
- Prasad, N. N. (2024). Bridging the gap: The role of multidisciplinary research in transforming educational practices.
- Pujawan, I. G. N., Rediani, N. N., Antara, I., Putri, N. and Bayu, G. W. (2022). Revised Bloom taxonomy-oriented learning activities to develop scientific literacy and creative thinking skills. *Indonesian Journal of Science Education*, 11(1), 47-60. <https://doi.org/10.15294/jpii.v11i1.34628>
- Redecker, C., Leis, M., Matthijs Leendertse, & Hoogveld, B. (2011, November). *The Future of Learning: Preparing for Change*. ResearchGate; unknown. [https://www.researchgate.net/publication/256461836\\_The\\_Future\\_of\\_Learning\\_Preparing\\_for\\_Change](https://www.researchgate.net/publication/256461836_The_Future_of_Learning_Preparing_for_Change)
- Reports*. (n.d.). World Economic Forum. <https://www.weforum.org/reports?query=future+of+jobs&year=2022>
- Roadman, G.J. (2010). Facilitating the teaching learning process through the reflective Engagement of pre-service teachers. *Australian journal of teacher education*. Volume 35, (2) March 2010. Pp.20-34. DOI: <http://ro.ecu.edu.au/ajte/vol35/iss2/2/>
- Rogoff, B. (1990) *Apprenticeship in Thinking. Cognitive Development in Social Contexts*. Oxford: Oxford University Press.
- Sailer, M., Murböck, J., & Fischer, F. (2021). Digital learning in schools: What does it take beyond digital technology? *Teaching and Teacher Education*, 103, 103346. <https://doi.org/10.1016/j.tate.2021.103346>

- Sarita, Hardin-Ramanan, Gopee, S., Rowtho, V., & Charoux, O. (2020). Graduate Work-Readiness in Mauritius: A multi-stakeholder approach. *Journal of Teaching and Learning for Graduate Employability*, 11(1), 93. <https://doi.org/10.21153/jtlge2020vol11no1art937>
- Schon, D. (1987). *Educating the Reflective Practitioner*. San Francisco, CA Jossey-Bass. - References - Scientific Research Publishing. (n.d.). [Www.scirp.org](http://www.scirp.org). Retrieved February 24, 2024, from <https://www.scirp.org/reference/references/papers?referenceid=2136784>
- Selvanathan, M., Surendran, N. N., Arumugam, T., Subramaniam, S. J., & Yusof, N. M. (2019). Lecturer's Perspective on Talent Management in Private Higher Learning Institutions in Kuala Lumpur, Malaysia. *International Journal of Higher Education*, 8(5), 257–267. <https://eric.ed.gov/?id=EJ1233772>
- Sidiropoulos, E. (2014). Education for sustainability in business education programs: a question of value. *Journal of Cleaner Production*, 85, 472–487. <https://doi.org/10.1016/j.jclepro.2013.10.040>
- Staples, J. M. (2005). What's love got to do with it? Reading “Black femininity” in a media text. *Perspectives on Urban Education*, 3(2) [Electronic version]. Available at <http://www.urbanedjournal.org/archive/vol3issue2/commentaries/comment0012.pdf>
- Spence, C. (2018). “Judgement” versus “metrics” in higher education management. *Higher Education*, 77(5), 761–775. <https://doi.org/10.1007/s10734-018-0300-z>
- Sulaiman, N. F. C., Akhir, N. H. M., Hussain, N. E., Jamin, R. M., & Ramli, N. H. (2020). Data on the impact of socioeconomic status on academic achievement among students in Malaysian public universities. *Data in Brief*, 31, 106018. <https://doi.org/10.1016/j.dib.2020.106018>

- Suputra, I. N., Basuki, A., Gunawan, A., & Syafruddin, A. B. (2024). Does work-integrated curriculum transformation affect learning experience, student competencies, and learning interactions? The role of teaching strategy moderation. *Cogent Education*, 11(1). <https://doi.org/10.1080/2331186x.2024.2375676>
- Thompson, M. (2000). *The Competitiveness Challenge: The Bottom Line Benefits of Strategic Human Resources*. Department of Trade and Industry.
- Transforming Education Summit*. (2022). Unesco.org. <https://www.unesco.org/en/2022-transforming-education-summit>
- UNESCO. (2020). *Inclusion and education | Global Education Monitoring Report*. Wwww.unesco.org. <https://www.unesco.org/gem-report/en/inclusion>
- UNESCO-IGCP: Stone for Development Work Integrated Learning and Action Research Program*. (2021, July 26). Smi.uq.edu.au. <https://smi.uq.edu.au/unesco-igcp-stone-development-work-integrated-learning-and-action-research-program>
- UNESCO project publishes guidelines on integrating Education for sustainable development into school curricula*. (2023). Unesco.org. <https://www.unesco.org/en/articles/unesco-project-publishes-guidelines-integrating-education-sustainable-development-school-curricula>
- Unis "should be punished" for producing poor-quality teachers*. (2022, February 27). Australian Financial Review. <https://www.afr.com/policy/health-and-education/unis-should-be-punished-for-producing-poor-quality-teachers-20220224-p59zgi>
- Vacca, R. T., & Vacca, J. A. L. (2005). *Content area reading: Literacy and learning across the curriculum* (8th ed.). Boston, MA: Pearson/Allyn & Bacon.

- Van, B. T. T., Kikkawa, T., & Ritsumeikan Asia Pacific University, Beppu, Japan. (2024). A comparative study of work-integrated learning experiences: Perceptions and perspectives of engineering and economics students. In *International Journal of Work-Integrated Learning*. <https://files.eric.ed.gov/fulltext/EJ1441903.pdf>
- Van Geel, M., Keuning, T., Meutstege, K., de Vries, J., Visscher, A., Wolterinck, C., Schildkamp, K., & Poortman, C. (2023). Adapting Teaching to Students' Needs: What Does It Require from Teachers? *Effective Teaching around the World*, 723–736. [https://doi.org/10.1007/978-3-031-31678-4\\_33](https://doi.org/10.1007/978-3-031-31678-4_33)
- Venville, G., Wallace, J., Rennie, L., & Malone, J. (2000). Bridging the Boundaries of Compartmentalised Knowledge: Student learning in an integrated environment. *Research in Science & Technological Education*, 18(1), 23–35. <https://doi.org/10.1080/713694958>
- Voogt, J., & Roblin, N. P. (2012). A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies. *Journal of Curriculum Studies*, 44(3), 299–321. <https://doi.org/10.1080/00220272.2012.668938>
- Voogt, J., Erstad, O., Dede, C., & Mishra, P. (2013). Challenges to learning and schooling in the digital networked world of the 21st century. *Journal of Computer Assisted Learning*, 29(5), 403–413. <https://doi.org/10.1111/jcal.12029>
- Voogt, J., & Roblin, N. P. (2012). A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies. *Journal of Curriculum Studies*, 44(3), 299–321. <https://doi.org/10.1080/00220272.2012.668938>
- Webster, R. S. (2009). Why Educators Should Bring an End to Pedagogy. *Australian Journal of Teacher Education*, 34(1). <https://doi.org/10.14221/ajte.2009v34n1.4>

- World Economic Forum 2022- *The future of work- a personal perspective*. (n.d).  
 Www.linkedin.com. <https://www.linkedin.com/pulse/world-economic-forum-2022-future-work-personal-aida>
- World Economic Forum. (2023). *Future of Jobs Report 2023*.  
[https://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_2023.pdf](https://www3.weforum.org/docs/WEF_Future_of_Jobs_2023.pdf)
- World Employment and Social Outlook – Trends 2018. (2018). Ilo.org.  
<https://www.ilo.org/global/research/global-reports/weso/2018/lang--en/index.htm>
- Williams, K. C., & Williams, C. C. (2011). *Five key ingredients for improving student motivation*. *Research in Higher Education Journal*, 121-123. - References - Scientific Research Publishing. (n.d.). Scirp.org. <https://scirp.org/reference/referencespapers.aspx?referenceid=658802>
- Wilkie, dana. (2019, October 21). *Employers Say Students Aren't Learning Soft Skills in College*. SHRM. <https://www.shrm.org/resourcesandtools/hr-topics/employee-relations/pages/employers-say-students-arent-learning-soft-skills-in-college.aspx>
- Wiranata, D., Widiana, I. W., & Bayu, G. W. (2021). The Effectiveness of Learning Activities Based on Revised Bloom Taxonomy on Problem-Solving Ability. *Indonesian Journal of Educational Research and Review*, 4(2), 289.  
<https://doi.org/10.23887/ijerr.v4i2.37370>
- Wylie, E. C., & Lyon, C. J. (2020). Developing a Formative Assessment Protocol to Support Professional Growth. *Educational Assessment*, 1–17.  
<https://doi.org/10.1080/10627197.2020.1766956>
- Yacob, A., Kadir, A. Z. A., Zainudin, O., & Zurairah, A. (2012). Student Awareness Towards E-Learning In Education. *Procedia - Social and Behavioral Sciences*, 67, 93–101. <https://doi.org/10.1016/j.sbspro.2012.11.310>

- Yen, N. P., Kamariah, A. S., Hw, N. P., & Huong, T. N. (2009). Employers' Feedback on Business Graduates and Curtin Graduate Attributes: An Exploratory Study in Curtin Sarawak. In *Proceedings of Asian Business Research Conference*.
- Yunus, A. S., Hamzah, R., Tarmizi, R. A., Abu, R., Nor, S. M., Ali, W. Z., & Bakar, K. A. (2006). Problem solving abilities of malaysian university students. *International Journal of Teaching and Learning in Higher Education*, 17(2), 86-96.



## APPENDIX A

### INFORMED CONSENT FORM FOR: THIRD YEAR UNDERGRADUATES IN EDUCATION

#### Informed Consent Form for: Third Year Undergraduates in Education

##### Title of Research:

Curriculum Integration in Higher Education: Transcending Disciplinary Divides to meet Market Demands.

##### Principal Investigator, Affiliations, and Contact Information:

Miss Shaima B. Illahibaccus-Sona.

Doctoral candidate at International Islamic University

[shaima.illahibaccus@gmail.com](mailto:shaima.illahibaccus@gmail.com)

##### Institutional Contact:

International Islamic University,

Faculty of Curriculum Instructions and Design,

Gombak, Selangor, Malaysia.

#### A. Introduction and Purpose of the Study

This informed consent is for third year undergraduates in Education at the University of Hamlet and Macbeth, whose permission, I, Miss Illahibaccus, S, doctoral candidate at the International Islamic University, Malaysia, am seeking to be part of research at your respective university. Both your Chancellor and lecturer have given consents to undertake this study. I am now seeking yours. As you must certainly be cognizant of, university education in the twenty-first century, is lambasted for imparting fragmented, habitual, and dated knowledge to students like you who, at the workplace, are facing numerous documented hurdles. This statement, as you may be informed, is seconded by various recent research published in the literature as well as informal exchanges by concerned subjects on social networking sites and debates in written and verbal press. Consequently, this study, has as purpose to integrate curriculum, that is transcending disciplinary divides to see if this strategy helps you in meeting markets' demands.

## **B. Description of Research**

Once the permission of your institution, your academics, and yours are received, alongside your counterparts who agreed to be part of research, you will then be needed to participate in an integrated teaching class for two months where your lecturer will teach you topics of his choice using the integrative methods, that is, teaching you a topic in its entirety. For example, to teach you the topic of ‘Gender in Education’, your lecturer may draw information from the field of Sociology, History, Biology, English, Mathematics, Information Technology, Economics, and many more. After this stage, alongside your counterparts, you will be required to participate in a focus group discussion which will be about your experiences with integrative teaching and learning.

## **C. Potential Benefits**

This study will provide you with the opportunity to grasp topics in their entireties, rather than in bits and pieces and tap into the development of your expertise in dealing with issues from informed perspectives. As you are aware, real life issues do not come in fragments, but as a whole.

## **D. Ethics**

Participation in this study is voluntary, that is, at any point in research, you may revoke consents without giving any reasons or facing any penalties. The identity of your institution and yours will be kept hidden and pseudonyms will instead be employed. Personal identifiers will be removed from all gathered data including the sound recorded focus group discussion which will be transcribed, coded, and stored in encrypted files in password protected folders, divulged to none, and destroyed post research. Confidentiality and anonymity will be maintained throughout research.

## **E. Authorisation**

By signing this form, you agree that your provided data can be presented as findings in this study and in presentations, and can be used for publication. Signing this form also entails that you agree with the research procedures explained above and willingly consent to be part of this study.

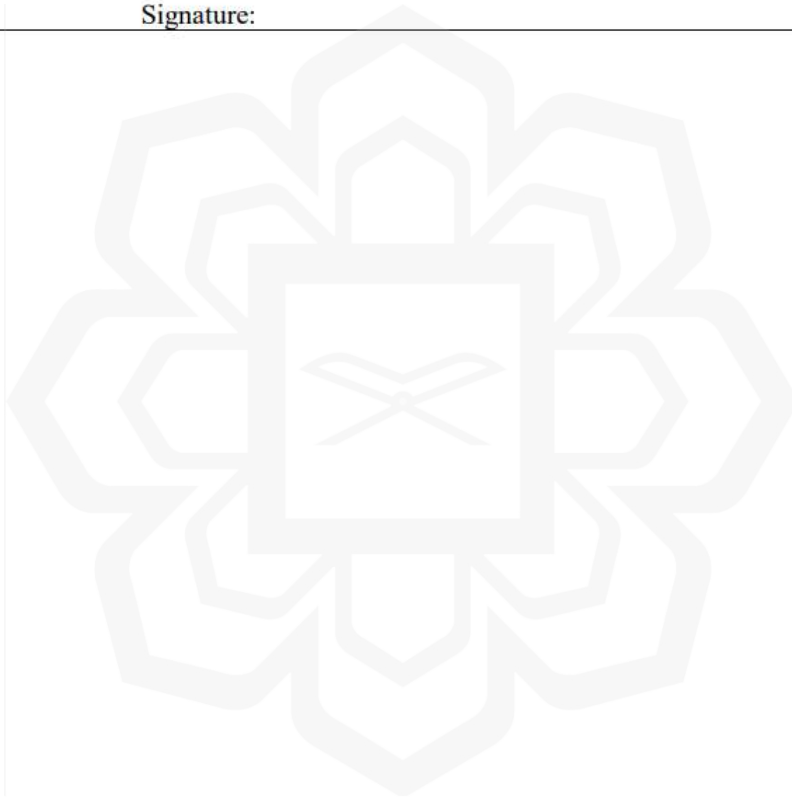
**I voluntarily agree to participate in this research program**

**Yes**

**No**

I understand that I will be given a copy of this signed Consent Form.

<b>Name of Participant (print):</b> _____ Signature: _____ Date: _____
<b>Name of Witness (print):</b> _____ Signature: _____ Date: _____
<b>Person Obtaining Consent:</b> _____ Signature: _____ Date: _____



## APPENDIX B

### INFORMED CONSENT FORM FOR: UNIVERSITY CHANCELLOR

[Informed Consent Form for: University Chancellor (s)]

**Title of Research:**

Curriculum Integration in Higher Education: Transcending Disciplinary Divides to meet Market Exigencies.

**Principal Investigator, Affiliations, and Contact Information:**

Miss Shaima B. Illahibaccus-Sona.

Doctoral candidate at International Islamic University

[shaima.illahibaccus@gmail.com](mailto:shaima.illahibaccus@gmail.com)

**Institutional Contact:**

International Islamic University,

Faculty of Curriculum Instructions and Design,

Gombak, Selangor, Malaysia.

**A. Introduction and Purpose of the Study**

This informed consent is for chancellor (s) at the University of Hamlet and Macbeth, whose permission, I, Miss Illahibaccus, S, doctoral candidate at the International Islamic University, Malaysia, am seeking to conduct research at your respective university. As you must certainly be cognizant of, university education in the twenty-first century, is lambasted for imparting fragmented, habitual, and dated knowledge to students who, at the workplace, are facing numerous documented hurdles. This statement, as you may be informed, is seconded by various recent research published in the literature as well as informal exchanges by concerned subjects on social networking sites and debates in written and verbal press. Consequently, this study, has as purpose to integrate curriculum, that is transcending disciplinary divides to see if this strategy aids students in meeting markets' demands.

## **B. Description of Research**

After receiving your permission, I intend to seek permission from one academic and his/her ten final year undergraduates in Education to participate in research. Once gaining the green light, I will request the academic to teach topics for a duration of two months to the ten students using the integrative approach; that is, they will be required to create authentic activities that allow students to individually complete tasks mirroring those at the workplace. A professional will be solicited to evaluate the students' performance. After this stage, an interview will be conducted with the academic and the professional while the ten students will be required to participate in a focus group discussion which will be about their teaching and learning experiences with the integration of curriculum. Prior research, the academic will be explicitly explained about curriculum integration, what it is all about, and its different types. A leaflet consisting of these information will be attached to this and their informed consent forms.

## **C. Potential Benefits**

Subjects participating in this study, be it academic or students, are likely to develop a thorough understanding of how topics from one module could be taught and learned as a whole, by drawing from various connected disciplines. For example, to teach the students quantitative data analysis, the academic can draw from Mathematics (Calculations), English (Reporting), Information Technology (Computing), Sociology (Empathy), and many more. In this regards, the academic gets the opportunity to teach topics as a whole to students who in turn get fruitful teaching and learning experiences of comprehending the topic in its entirety, rather than in fragments. As the adage says, real world problems do not come in pieces, but as a whole.

## **D. Ethics**

Participation in this study is voluntary, that is, at any point in research, your institution, and the involved subjects may revoke consents without giving any reasons or facing any penalties. Instead of the institution's and subjects' name, pseudonyms will be assigned. Personal identifiers will be removed from all gathered data including the sound recorded interviews and focus group discussion which will be transcribed, coded, and stored in encrypted files in password protected folders, divulged to none, and destroyed post research. Confidentiality and anonymity will be maintained throughout research.

### E. Authorisation

By signing this form, you agree that your provided data can be presented as findings in this study and in presentations, and can be used for publication. Signing this form also entails that you agree with the research procedures explained above and willingly consent for your institution to be part of this study.

#### I voluntarily agree to participate in this research program

Yes

No

I understand that I will be given a copy of this signed Consent Form.

<b>Name of Participant (print):</b> _____ Signature: _____	Date: _____
<b>Name of Witness (print):</b> _____ Signature: _____	Date: _____
<b>Person Obtaining Consent:</b> _____ Signature: _____	Date: _____

## APPENDIX C

### INFORMED CONSENT FORM FOR UNIVERSITY LECTURERS IN EDUCATION

#### Informed Consent Form for University Lecturers in Education

##### Title of Research:

Curriculum Integration in Higher Education: Transcending Disciplinary Divides to Meet Market Exigencies.

##### Principal Investigator, Affiliations, and Contact Information:

Miss Shaima B. Illahibaccus-Sona.

Doctoral candidate at International Islamic University

[shaima.illahibaccus@gmail.com](mailto:shaima.illahibaccus@gmail.com)

##### Institutional Contact:

International Islamic University,

Faculty of Curriculum Instructions and Design,

Gombak, Selangor, Malaysia.

#### A. Introduction and Purpose of the Study

This informed consent is for academic (s) at the University of Hamlet and Macbeth, whose permission, I, Miss Illahibaccus, S, doctoral candidate at the International Islamic University, Malaysia, am seeking to be part of research at your respective university. The Chancellor at your university has given his/her positive consent. As you must certainly be cognizant of, university education in the twenty-first century, is lambasted for imparting fragmented, habitual, and dated knowledge to students who, at the workplace, are facing numerous documented hurdles. This statement, as you may be informed, is seconded by various recent research published in the literature as well as informal exchanges by concerned subjects on social networking sites and debates in written and verbal press. Consequently, this study, has as purpose to integrate curriculum, that is transcending disciplinary divides to see if this strategy aids students in meeting markets' demands.

## **B. Description of Research**

After receiving the permission of your institution and yours, I intend to seek that of ten of your final year students in Education. You will then be needed to teach topics of your choice for two months to the ten students using the integrative approach; that is, you will be required to create authentic activities that allow students to individually complete tasks mirroring those at the workplace. You will also be requested to hand in your integrated lesson plans for analysis. A professional will be solicited to evaluate the students' performance. After this stage, you will be interviewed about your professional experiences in teaching integrated lessons. Prior research, you will be explicitly explained about curriculum integration, what it is all about, and its different types. A leaflet consisting of these information will be attached to this and their informed consent forms.

## **C. Potential Benefits**

This study will provide you with the opportunity to teach students using the integrated approach and develop and hone your skills in teaching topics in its entirety. Indirectly, this study will contribute to your professional growth.

## **D. Ethics**

Participation in this study is voluntary, that is, at any point in research, you may revoke consents without giving any reasons or facing any penalties. Instead of the institution's, students' and your name, pseudonyms will be assigned. Personal identifiers will be removed from all gathered data including the sound recorded interviews and focus group discussion which will be transcribed, coded, and stored in encrypted files in password protected folders, divulged to none, and destroyed post research. Confidentiality and anonymity will be maintained throughout research.

## **E. Authorisation**

By signing this form, you agree that your provided data can be presented as findings in this study and in presentations, and can be used for publication. Signing this form also entails that you agree with the research procedures explained above and willingly consent to be part of this study.

**I voluntarily agree to participate in this research program**

**Yes**

**No**

I understand that I will be given a copy of this signed Consent Form.

<b>Name of Participant (print):</b> _____ <b>Signature:</b> _____ <b>Date:</b> _____
<b>Name of Witness (print):</b> _____ <b>Signature:</b> _____ <b>Date:</b> _____
<b>Person Obtaining Consent:</b> _____ <b>Signature:</b> _____ <b>Date:</b> _____



## APPENDIX D

### INFORMED CONSENT FORM FOR: PROFESSIONALS IN EDUCATION

#### Informed Consent Form for: Professionals in Education

##### Title of Research:

Curriculum Integration in Higher Education: Transcending Disciplinary Divides to meet Market Exigencies.

##### Principal Investigator, Affiliations, and Contact Information:

Miss Shaima B. Illahibaccus-Sona.

Doctoral candidate at International Islamic University

[shaima.illahibaccus@gmail.com](mailto:shaima.illahibaccus@gmail.com)

##### Institutional Contact:

International Islamic University,

Faculty of Curriculum Instructions and Design,

Gombak, Selangor, Malaysia.

#### A. Introduction and Purpose of the Study

This informed consent is for professional (s) whose permission, I, Miss Illahibaccus, S, doctoral candidate at the International Islamic University, Malaysia, am seeking to participate in research. As you must certainly be cognizant of, professionals at the workplace, as recent research and written and spoken medias highlighted, are constantly being pilloried for not meeting up market's demands. Their university education is censured for failing to prepare them with the right knowledge and skills for the world of work. Consequently, this study, has as purpose, to integrate curriculum, that is, blurring disciplinary divides to teach subjects in their entirety, rather than in isolations.

## **B. Description of Research**

Academics will be required to teach integrated lessons for a period of two months to ten final year undergraduates of Education and at the end of which, the academics will set up tasks related to work and you will be requested to assess students' performances on those tasks. You can assign them grades or write remarks and your evaluation of them will be further discussed in an interview with me post this stage.

## **C. Potential Benefits**

This study will provide you the opportunity to apply your professional skills and aptitudes in evaluating final year undergraduates' performances in Education.

## **D. Ethics**

Participation in this study is voluntary, that is, at any point in research, you may revoke consents without giving any reasons or facing any penalties. Your identity will be kept hidden and pseudonyms will be assigned instead. Any personal identifiers will be removed in the gathered data including your sound recorded interview and be transcribed, coded, and stored in encrypted files in password protected folders divulged to none, and destroyed post research. Confidentiality and anonymity will be maintained throughout research.

## **E. Authorisation**

By signing this form, you agree that your provided data can be presented as findings in this study and in presentations, and can be used for publication. Signing this form also entails that you agree with the research procedures explained above and willingly consent to be part of this study.

**I voluntarily agree to participate in this research program**

**Yes**

**No**

I understand that I will be given a copy of this signed Consent Form.

<b>Name of Participant (print):</b> _____ Signature: _____ Date: _____
<b>Name of Witness (print):</b> _____ Signature: _____ Date: _____
<b>Person Obtaining Consent:</b> _____ Signature: _____ Date: _____



## APPENDIX E

### LEAFLET: INTRODUCING CI

What is Curriculum Integration?

Curriculum Integration is commonly referred to as topics which are taught as a whole; that is, the examination of topics is not restricted to a particular discipline but draws knowledge from various other disciplines to have an informed understanding/ to understand a topic in their entirety.

- Curriculum Integration transcends disciplinary divides.
- There are three types of Curriculum Integration: (I) Multidisciplinary (drawing from several academic disciplines to teach a topic through divergent angles and focusing on connecting the diverse explored perspectives (II), Interdisciplinary (establishing, harmonizing and synchronising connections across disciplines in a coordinated and coherent manner) and (III) Transdisciplinary (learning areas are embedded in a real-life context, treating disciplines as socially constructed structures. Learning focusses on what students need to know to solve prevailing issues in their reality).

Teaching strategies: Student-Centered, Constructivist, Experiential, Job-simulated ones.

## APPENDIX F

### FOCUS GROUP DISCUSSION

#### Focus Group Discussion for Final Year Undergraduates in Education

1. Tell me about your experiences with curriculum integration.
  - Did you enjoy the lessons? What did you like about it?
  - Has this teaching and learning type helped you to gain a unified perspective of explored topics?
  - Has this teaching and learning type helped you apply theoretical knowledge in practice? What did you learn from this process?
2. What are the benefits of such teaching and learning type?
  - Have you noticed changes in your academic performance and individual growth?
3. What type of skills have you developed so far? Skills like problem-solving, meaning-making, ...
4. What are the challenges you encountered along the way?
5. Would you like to embrace curriculum integration at University, that is, continue learning through this teaching and learning type? Why?
6. Do you think that this teaching and learning type prepares you better for work? In what aspects, specifically?

## APPENDIX G

### ACADEMICS' INTERVIEW QUESTIONS

1. Tell me about your experiences with Curriculum Integration.
2. What are the plus points of this short journey with curriculum integration?
3. What are the challenges you encounter along the way?
4. Did your students enjoy the lessons? Was there a change in their academic performance and individual growth?
5. What about their mastery of the twenty-first-century skills?
6. Do you think Curriculum Integration effectively balances theoretical knowledge with applied knowledge?
7. Do you think Curriculum Integration effectively mitigates gaps between universities and the market demands?
8. Teaching topics in their entirety appear in both local and global educational policies. Why do you think then that Universities abstain from such teaching and learning type? Why?
9. Do you intend to continue using this teaching strategy from onwards? Why?

## APPENDIX H

### INTERVIEW WITH PROFESSIONAL(S)

1. You evaluated the students based on the demanded skills at the workplaces of your field. How were the students' performance?
  - Did the students display the demanded market skills? Which skills?
  - Did the students apply theoretical knowledge to practice? Elucidate.
  - Did the students demonstrate evidence of learning from the practical application? How?
  - Were the students successful in addressing challenges in their entirety? Explain.
  - Are you satisfied with the way the students solved problems?
2. Do you think the students are equipped with the knowledge and skills to solve work related issues in the field? Why?
3. Do you think that teaching topics in their entirety better prepares students for work as compared to the customary methods? Why?
4. Do you think that by balancing academic knowledge with applied knowledge, universities meet your demands? Why?
5. Are there any challenges that you encountered throughout the rating process? Explain.

## APPENDIX I

### EXCEPT OF INTER-RATER FORM

Rater 1	Rater 2
Theme: 1. Benefits of balancing knowledge with doing through curriculum integration 2. Aacademics' experiences with curriculum integration 3. Students' experiences with curriculum integration.	Theme: 1. Efficacy of curriculum integration in sustaining knowing and doing. 2. Lecturers' involvement and faced challenges with curriculum integration. 3. Students' involvement and faced challenges with curriculum integration.