IBN TUFAYL’S EPISTEMOLOGICAL THEORY BASED ON HAYY IBN YAQZAN AND ITS IMPLICATIONS ON MUSLIM EDUCATION

BY

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This study examines the epistemological theory of Ibn Tufayl Al-Qaysi Al-Andalusi, in science and education and its implications for Muslim education curriculum. Ibn Tufayl was born in the beginning of twelfth century in Guadix (Wadi Ash) and he died in 1185 AD in Morocco. He was an encyclopedic scientist; a philosopher, a judge, a physician and an astronomer. His novel, *Hayy Ibn Yaqzan*, is the only remaining work that reached us from his whole collection. It is also known as *al-Hikmah al-Israqiyah aw al-Mashriqiyyah* (The Secrets of the Flourishing Wisdom). This novel talked about an infant named *Hayy Ibn Yaqzan*, who lived and grew up alone on an island. In this novel, Ibn Tufayl attempted to reconcile philosophical and empirical knowledge with the religious knowledge through the understanding and application of scientific and educational theories and methods. The researcher used the historical, analytical and comparative methods in this study. All the texts were examined and analysed critically. The primary source of literature was Ibn Tufayl’s novel, *Hayy Ibn Yaqzan*. The secondary sources included articles or studies written to explain and clarify the novel and also the books or articles talking about modern scientific discoveries and modern educational theories; Rousseau’s novel in education, *Emile* and Piaget’s work, *The Psychology of Intelligence* for natural theory and theory of intellectual or cognitive development and the notion of evolution through the ages respectively. The study found that firstly, there were many scientific aspects in the novel like the inductive or deductive methods, many scientific facts and theories particularly related to space physics which provides evidence that Ibn Tufayl saw the universe the way Einstein saw it in the twentieth century, except he saw it much earlier in the 12th century. Furthermore, the analysis shows that Ibn Tufayl had seemingly sowed the seeds of two famous educational theories – the Natural theory which is attributed to Rousseau and the theory of constructivism established by Piaget in the 19th and 20th century respectively. But the most important finding was his arguments on the relevance of both the philosophical and empirical sciences and revealed sciences in finding the ultimate Truth. Finally, the study shows Ibn Tufayl’s educational thoughts can be applied in reforming educational systems in the Muslim world that are steeped in educational dichotomy between acquired knowledge and revealed knowledge. Thus, the researcher recommends the novel be studied in both disciplines of acquired and revealed knowledge in the university in the Muslim world.
خلاصة البحث

هدفت هذه الدراسة لفحص نظرية المعرفة عند أبو بكر محمد ابن طفيل القيسي الأندلسي في العلم والتربية وانعكاسات هذه النظرية على المناهج التعليمية في العالم الإسلامي. ولد ابن طفيل مع بداية القرن الثاني عشر الميلادي في وادي آش وتوفي في 1185م في مدينة مراكش المغربية. ونشأ ابن طفيل كعالم موسوعي وفلاسفة، وابن فيزيائي، وابن فلكي. وروايته حي ابن يقظان هي العمل الوحيد المتبقي من أعماله والتي وصلت إلىنا والتي غردت بعنوان أسرار الحكماء الإشراقية أو المشرقية. وهي تتكون من ذلك الوضع الذي عاش وتمه على جزيرة معزولة. وفي هذه الرواية حاول ابن طفيل التقريب بين المعرفة الفلسفية والعملية وبين المعرفة الدينية. من خلال فهم وتطبيق الطرق والنظريات العلمية والتربيوية. وقد استخدم الباحث نهجاً تحليلياً في تحقيق المقارنة والتحليل. حيث قام الباحث بتتبع المدارس الأولى وهو رواية حي ابن يقظان بالإضافة إلى النصوص الثانوية مثل بعض المقالات والكتب التي تحدث عن النظريات العلمية والتربيوية الحديثة بالإضافة لكتاب ايميل لروسو الذي تحدث عن الفلسفة الطبيعية وكتاب علم النفس الأذكياء ليشاميل الذي تحدث عن النظرية البنائية في التربية. وأظهرت النتائج التي حصل عليها الباحث أن هناك الكثير من الأفكار العلمية التي وردت في الرواية مثل فلسفة البحث العلمي سواء الاستقصائية أو الإستنتاجية. يضاف إلى ذلك الكثير من الحقائق والنظريات العلمية، خاصة تلك المتعلقة بفيزياء الفضاء والتي مكتبت ابن طفيل من رؤية العالم (الكون) كما راه أينشتاين في القرن العشرين.

علاوة على ذلك أظهرت الدراسة أن ابن طفيل على ما يبدو هو الذي نشر أول نظريتين تزويتين؛ النظرية الطبيعية في التربية والتي تسبب الفلاسفة حان حاكم روسو والنظرية البنائية والتي أسسها جان بياجيه. ومن أهم ما وصلت إليه الدراسة هو أن العلوم الإنساني والفلسفية مع علوم الالهية تقوم إلى إيجاد المعرفة الحقيقية. وفي النهاية أظهرت الدراسة أنه يمكن الاستناد على هذه الأفكار العلمية والتربيوية التي وردت في رواية حي ابن يقظان كأساس لتعليم في العالم الإسلامي مع التركيز على التكامل بين المعرفة الدينية والعلمية. لذلك أوصى الباحث بضرورة اعتماد هذه الرواية كمادة للدراسة في الجامعات في العالم الإسلامي.
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DECLARATION

I hereby declare that this dissertation 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.

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CHAPTER ONE
INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Islam is the religion of knowledge and the path of the truth. It exhorts Muslims to investigate natural phenomena systemically and continuously search for knowledge (Sardar, 1998). Throughout the Qur’an and Sunnah, there is a strong emphasis on the value of knowledge and research. Khan (2012) observes that out of the total 6347 verses of the Qur’an only about 200 verses talked about obligation to offer prayers, while more 600 verses contain massages that encourage believers to ponder on the mysteries of nature, reflect on Allah’s creation, and use their reason to come to a realization of purpose and existence. For example, the first five verses revealed to our Prophet Muhammad (P.B.U.H.) talked about the key to knowledge, that is, the acts of reading and writing. Allah has granted man with the mental faculty and physical senses to acquire knowledge. The verses of the first surah say:

“Read! In the name of your Lord, Who has created, He has created man from a clot. Read! And your Lord is the Most Fenerous. Who has taught by the pen. He was has taught man that which he knew not” (Al-‘Alaq 96:1-5).

In Al-Sarjanei’s (2013) analysis, it was a marvel that Allah chose to reveal His words on a man who could not read or write. And ironically enough, the first word spoken to this unlettered man was “read”. Thus, the first divine revelation to mankind suggests that reading and writing are key to understanding the religion and the world. The same idea was earlier propounded by Al-Najjar (1988) who maintained that the Holy Qur’an “has perpetually, and in many verses directed human beings to observe the universe and try to understand its miraculous structure because by so doing, they can
get to know the Creator, understanding the laws governing the universe and hence use it for bettering life on earth” (p.146). So, gaining knowledge is very important to every Muslim to manage himself and his life properly. Furthermore as a Muslim who must perform acts of worship (ibadah), it is very important to know how to worship Allah (S.W.T.) as He wants to be worshipped. Thus in Islam, these are the two major purposes of scientific research and education: for man to educate himself towards the betterment of his life and the lives of those around him, and for him to know how to worship Allah (Shi, 2008). Al-Hafiz and Saleh (n.d.) viewed education as crucial for mankind because it helps to develop and improved life. This idea went through the minds of many Muslim which prompted them to pursue learning and acquire knowledge, and thereafter, to apply knowledge systematically to achieve the purpose of education. In his book Sarton (1951) articulated with convincing evidence that Muslim scholars were the first to use experimentation and observation systematically in generating new knowledge and they played a significant role in the history of science.

Islam is also a religion of nature (fitrah) because it recognizes the existence of five aspects or dimensions or man, that is the physical, spiritual, emotional, social and mental dimensions and is concerned with the absolute development of all. In his practices of educating early Muslims, the Prophet (P.B.U.H.) took into account all of the dimensions, guiding and encouraging Muslims to reach their maximum abilities for the benefit of living in this world. Islamic education has been concerned with the mind and its development because its prime interest is to liberate the human mind from any form of coercion and blind tradition that obscures it from being able to determine the right vision, attitudes and events (Kaya, 2009). Almighty Allah (S.W.T.) says in the Holy Qur’an:

2
“There is no compulsion in religion. Righteousness is now distinct or stands out clear from error. He who disbelieves in the idol and believes in Allah has grasped the firmest tie that will never break. Allah is all hearing, knowing”. [Al-Baqarah: 256]

Allah has also urged His slaves to consider and ponder upon the cosmic phenomena and to understand them well. The Qur’an has its own style in unraveling and describing the sings of Allah (Ayatullah) in the universe. The verses about the universe are presented in a vivid and provocative style that awakens the human mind and that gently calls people to observe, think about and address the universe using their minds to get a better understanding of the truth of their existence.

Allah (S.W.T.) has provided man with natural means (i.e., his physical senses), essential nutrients for the mind which include sight, hearing and a heart that feels, that he can use to develop his mental abilities through science. The more man learns, the more he acquires knowledge, and the more he becomes conscious of Allah (S.W.T.). Indeed, Allah declares that He raises the status and rank of those with knowledge above that of ordinary people and those who are ignorant. Allah S.W.T. says:

“And pursue not that of which you have no knowledge; for every act of hearing, or of seeing or of feeling in the heart will be enquired into on the Day of Reckoning”. (Al-Isra’a 17:36)

We find that Allah (S.W.T.) makes the mind focused on “Khilafah” (vicegerency), which means that the whole approach of “Khilafah” is based on the human mind. Allah (S.W.T.) has thus made man the most honored among His creatures because of the mental abilities he possesses with which he can recognize and understand the surrounding environment as well as the universe where he lives. That is what makes him have a free will. Sha’arawi (1991) believed that man is unique from other creatures because he is bestowed with a mind which Allah (S.W.T.) did not
give to His other creations, and he is able to use all his senses as the tools and channels to acquire knowledge.

1.2 THE POSITION OF SCIENCE AND EDUCATION IN ISLAM

Any reader of the Qur’an can observe that its reading requires a lot of cognitive processes to reach an understanding of what the verses mean. These cognitive processes need sensory perception; it is the basis for all mental processes, memory operations, moral perception, reasoning by induction or deduction, reflection and self-correction. The processes are arranged hierarchically where perception is positioned at the lowest rung of the hierarchy, while correction and reflection are placed in the highest rung. These two processes are ranked the highest because in order to make a judgment, man needs to engage in reflection and self-correction. Allah (S.W.T.) says:

“And [mention] when Abraham said, “My Lord, show me how You give life to the dead”. [Allah] said, “Have you not believed?” He said, “Yes, but [I ask] only that my heart may be satisfied”. [Allah] said, “Take four birds and commit them to yourself. Then [after slaughtering them] put on each hill a portion of them; then call them - they will come [flying] to you in haste. And know that Allah is Exalted in Might and Wise”. (Al-Baqarah, 260)

Man, who grows and develops, must move gradually from the lowest level to the highest level of the mental processes hierarchy, this is the duty of education which cares about the human mind and its development. Thus, Islam focuses on the mind and its continuous development. This is evident from a number of Qur’anic verses and hadiths. Islam liberates the human mind from the shackles of ignorance and blind subordination to whims, suspicions or traditions by inviting man to always use his mind in exploring the universe. It could be said that the use of reason (Aqil) is considered a kind of worship to Allah (S.W.T.). In other words, seeking knowledge is necessary and obligatory like praying, fasting and so on. In this regard, Al-Nasa’i
recorded the following hadith in his book, “Al-Kuna”, what our Prophet (P.B.U.H.) had said to signify the importance and role of the mind: “Religion is (the name of) intelligence, He who has no intelligence has no religion”. Although this hadith is regarded as weak, found among the collection of fabricated or weak Prophetic sayings, the meaning can nonetheless be accepted in the context of using the mind (Islamic Encyclopedia, n.d.). Thus, it becomes the duty of Muslims to feed the mind continuously through science, provided that this science is useful for the Muslim community. Each member of this community is responsible for science, which means that science is not only for the generation of knowledge and gathering information, but it must also be applied and practiced until its impact on the community is concrete and visible. This cannot be achieved except through following the regular scientific method through measurement and extrapolation or a combination of both. Allah (S.W.T.) says:

“Then do they not look at the camels - how they are created; and at the sky - how it is raised; and at the mountains — how they are erected; and at the earth - how it is spread out”? (Al-Ghashiyah, 17-2)

The word “how” in the above verses reflects the spirit of modern science and its methods. So, Islam calls for the scientific liberation of the human mind from mental ossification and traditional breeding and upbringing via exercising freedom of thought and independence of the will. It also urges liberating the human mind from myths and fantasies and encourages man to engage in a scientific observation of the universe.

It has been widely agreed that Islam calls for science and learning, and emphasizes the importance of science and the status of scientists (ulul albab) as much revered figures in society. The verses and evidence in the Qur’an and Sunnah supporting this are extensive and abundant. There is no religion that praises science
and scientists as much as Islam does. It is enough to mention that there are very many 
hadith narrations and verses in the Qur’an that talk about science and education (Al- 
Sarjanei, 2013).

Science is talked about in the Qur’an in many of its verses, and was 
highlighted by the Prophet (P.B.U.H.) in his noble speeches. Science includes all 
knowledge that reveals the realities of things, and removes ignorance and uncertainty 
that shrouds the human mind regarding any subject matter, be it man himself, his 
existence, the objects around him, or the universe in which he lives. In the Islamic 
tradition of learning, the methods of knowing include the use of common sense and 
experience, or the mind and examination of proof, or divine revelation. According to 
Maurice Bucaille, a French scientist, recognizing divine revelation as a means of 
acquiring knowledge is a distinct character of Islam that distinguishes it from the other 
two heavenly religions, namely Judaism and Christianity (Hoodbhoy, 1992). The 
Western doctrine that science is strictly empirical--that it is limited to only that which 
can be observed and experimented with--is fallible. It is also faulty to think, as do 
some religious Muslims, that the “science” in the Qur’an and Sunnah is merely a 
“science of religion”, nothing else and nothing more. As Al-Sarjanei (2013) correctly 
pointed out, there is no conflict between Islam and science. Contrary to popular 
opinion in the west, the religion is completely compatible with science, and its 
appearance in the midst of deep ignorance was really a scientific revolution. The 
famous German orientalist, Sigris Hunke, also confirmed this in her book, *Allah’s Sun 
Shines Over the Occident (the Countries of the West)*.

A number of verses in the Qur’an exalt science and those that engage in it. The 
concept of science refers to knowledge that reveals the realities of things. This 
knowledge can be religious or worldly. Allah (S.W.T.) asks: “Are they equal, those
who know and those who do not know?” [Al-Zumar, 39:9]. In this verse, the object of
the verb “know” is not mentioned, that is Allah did not precisely say, “those who
know the science of religion, the science of nature, or any other science”. He used the
word “know” as an intransitive verb, rendering the meaning as follows: “Are they
equal--one who has knowledge and one who is ignorant?” The question in essence
rejects the idea that people with knowledge and people without knowledge are equal
(Al-Sha’arawi, 1991). Moreover, Allah (S.W.T.) says:

“Allah bears witness that there is no god but He, and so do the Angels
and those who possess knowledge, upholding justice, there is no god but
He, the Almighty, the All-Wise”. (Al-Imran, 18)

What is understood from this verse is that those who possess knowledge (of
the truth), whom Allah (S.W.T.) mentioned right after the angels regarding the witness
of the oneness of God, are those whose visions are enlightened with knowledge and
science, be it religious science or the natural sciences (Al-Sha’arawi, 1991). And we
have seen many cosmologists who have witnessed the oneness of the Almighty God
and His uniqueness, capacity, glory and perfection. For example, in the 1958 book,
*Evidence Book of God in an Expanding Universe: Forty American Scientists Declare
Their Views on Religion*, the editor John Clover Monsma asked two questions to 40
American scientists in several specializations: chemistry, physics, biology geology,
cosmology and so on, to declare their affirmative views on religion. His questions
were: “Do you believe in God? How has your research guided you to Him?” A
majority of them expressed a belief in God, explaining that their research pointed to
His existence as uneliminable. Without God in the equation, it is impossible to explain
the entire creation. But what is astonishing is that some theologians today tend to
subscribe to this strange view that all the information and evidence regarding the
virtues of science and scientists in the Qur’an and hadiths is purely specific to religious knowledge alone and to religious scholars only.

The story of the first man, Adam the father of humankind (peace be upon him), is narrated in the Qur’an in more than one surah, including Surah Al-Baqarah, which is the only chapter that describes in good detail the great dialogue between Allah (S.W.T.) and his angels regarding the succession of Adam on the earth:

“Behold, Your Lord said to the angels: “I will create a vicegerent on earth”. They said: “Will You place therein one who will make mischief and shed blood? While we do celebrate Your praises and glorify Your holy (name)?” He said: “I know what you know not”. (Al-Baqarah, 30)

Allah (S.W.T.) wished to show the angels the virtues of Adam - the talents and abilities gifted to him that qualified him for vicegerency on earth. In what looked like a knowledge competition, Allah tested the knowledge of Adam (P.B.U.H.) and the angels in which the former outweighed the latter in knowledge, and emerged as the winner of the test. Regarding this occurrence, Allah (S.W.T.) explained:

“And He taught Adam all the names (of everything), then He showed them to the angels and said, “Tell Me the names of these if you are truthful”. The (angels) said: “Glory be to You, we have no knowledge except what you have taught us. Verily, it is You, the All-Knower, the All-Wise. He said, “O Adam, inform them of their names”. And when he had informed them of their names, He said, “Did I not tell you that I know the unseen [aspects] of the heavens and the earth? And I know what you reveal and what you have concealed”. (Al-Baqarah, 31-33)

What kind of knowledge did Adam have? Was he aware of religious or worldly knowledge? It could not have been religious knowledge because Adam did not have inspiration sent down to him in the form of a religion, but he had knowledge of the names of things that Allah (S.W.T.) had deposited on earth which Adam would need to deal with in his vicegerency (Al-Sha’arawi, 1991). Knowing the names of things would perhaps also entail knowing their characteristics and benefits, and all that was related to
life tasks. All this is definitely not classified as religious knowledge. If it was a kind of religious knowledge, the angels would likely be better informed than Adam because revelation was sent down to the messengers of Allah (S.W.T.) through them. Allah (S.W.T.) discloses in the story of Yusuf (P.B.U.H.):

“When Yusuf attained his full manhood, We gave him power and knowledge. Thus do We reward those who do right”. (Yusuf, 12:22)

This “power and knowledge” which Allah gave to Yusuf (P.B.U.H) was not knowledge of prophecy because in the context explained in the verse, he had not yet received any revelation. And theology was unknown in Egypt at that time. Rather, it was knowledge and insight of worldly matters, the ability to rely on the mind to make conclusions, the ability to select the right options from among myriad alternatives, and the like. Having this kind of knowledge was the key factor to Yusuf’s (P.B.U.H.) being appointed later by the king of Egypt as the keeper of the treasures of Egypt (Al-Sha’arawi, 1991):

“So the king said: “Bring him unto me; I will take him specially to serve about my own person”. Therefore, when he had spoken to him, he said: “Be assured this day, thou art, before our own presence, with rank firmly established, and fidelity fully proved! Joseph said: “Set me over the store-houses of the land: I will indeed guard them, as one that knows (their importance)” (Yusuf, 54-55)

Yusuf (P.B.U.H.) mentioned two reasons for the appointment, one was conservation, and the other, knowledge. Conservation refers to treasury and taking care of state properties, funds and resources, which were the main duties of Yusuf (P.B.U.H.). He had to ensure that all that was entrusted to him, in terms of work and state funds, must be appropriately spent, guarded or executed. What was meant by knowledge is the experience in economic, financial and agricultural matters, as well as state planning and management, that Yusuf (P.B.U.H.) would need to help govern Egypt in a time of great economic crisis that plagued Egypt for seven years (Al-Sha’arawi, 1991).
In another position, Allah (S.W.T.) says: “Among His Signs is the creation of the heavens and the earth, and the variations in your languages and your colors. In this are signs for two worlds” (Al-Rum, 30:22]. The knowledge meant here is the recognition of the signs of Allah (S.W.T.) in the universe and in the varieties of languages spoken by man and the colors of their skin. This knowledge includes the science of the universe and the human sciences, while the varieties of tongues and colors mean the different nations and peoples with their own languages and skin colors different from each other. The differences are reflective of diversity that should be embraced, rather than exploited to create animosities and enmities among mankind.

One of the greatest concerns of the Qur’an in our field is the composition of the scientific mentality. This mentality works in contrast to the “colloquial mentality” or “superstitious mentality” which believes everything said or displayed to it, and does not put it into examination, but takes it for granted, especially if it comes from a trusted source, such as grandparents, parents, leaders or elders. Those with the “colloquial mentality” tend to argue, “I found our fathers doing so. Or we found our masters taking that pathway” (Al-Sha’arawi, 1991). In contrast to this mentality of following others, there is another mentality which has totally different characteristics, which the Qur’an by its commanding verses works to shape into proper functioning (Al-Sha’arawi, 1991). Science cannot flourish and expand its branches if the environment, culture and practices do not allow it to. And there cannot be a knowledge base properly established without a psychological and intellectual atmosphere grooming the mind to think and ideas to bloom. Views, especially opposing ones, must be discussed, and speakers must cast their arguments in an environment free from myths, legends, inherited customs and traditions Al-Sha’arawi (1991).
This is the type of environment needed to form the scientific mentality that the Qur’an so encourages. It is needed for any society to develop and flourish. As for how the Qur’an forms the scientific mentality by its teachings, it is clearly evident that those who read the Qur’an and think of its messages correctly will find the elements of this mentality in the workings of their minds (Al-Sarjanei, 2013). Among the scientific elements of this mentality established by the Qur’an is the fact that it is based on the acts of observing and reflecting, where observing is a duty while reflection is a worship (Al-Sha’rawi, 1991). The Qur’an has many verses that urge man to ponder and reflect in different ways on a variety of phenomena. What is intended by observing is the development of a mental view where man employs meditation and consideration to come to knowledge. It allows man to see much more than what he can see with the physical eyes (Al-Sha’rawi, 1991).

There is no doubt that Islam is a great religion that frees the mind, supports science, commends research, urges mankind to observe the universe, encourages the development of a scientific mentality, and rejects the passive mentality that purely submits to and accepts established norms and traditions without discussion. Islam is a religion of science, freedom, hard work and high morals. This is what made Kaya (2009) say that “the source of Islam and science is the same” (p.24), clearly referring to God the Almighty as being the ultimate source.

Based on the preceding discussion, the researcher construed that Islam represents a complete cognitive theory that invites mankind to engage in systematic observations of natural phenomena, and in thinking and reflecting to gain insights into the scheme of things. This theory includes a complete body of knowledge, its genuine sources, and an empirical methodology of investigating and verifying the knowledge. In
short, Islam has introduced to all mankind in this world a comprehensive epistemological theory that leaves no question about existence unanswered.

1.3 STATEMENT OF THE PROBLEM

The Islamic world has contributed significantly to the global civilisation. During the first half of the middle ages, many Muslim scientists and scholars made immense contribution to human progress and development in many branches of science more than others. They pioneered the civilisation in Europe throughout the era of Muslims in Spain (named as Al-Andalus) (Sarton, 1951; Hussain, 1968; Abu-Samrah & Al-Barghothee, 2008). This achievement illustrates that early Muslim scholars were interested in science particularly, and in knowledge generally and how to gain it. Abu-Samrah and Al-Barghothee (2008) explored the role of Muslim scholars in different aspects of science, especially in scientific research methodology. They showed that Muslim scholars were very creative in the field of scientific methodology, and they discovered and used most of the current scientific research methods. One of the major contributions that Muslims made was the application of scientific research methods in their experiments, which is, however, either completely ignored or attributed to other scholars. For example, many Western scholars assert that Bacon (1561-1626) was the first one who talked about scientific research methods, mainly the inductive method. Faulkner (1993) argued that the progressive civilisation was set forth by Francis Bacon through his famous writings on experimental science. However, based on the famous philosophical novel, Hayy Ibn Yaqzan, written by Ibn Tufayl, it is evident that Muslim scientists had applied the scientific method 500 years before Francis Bacon. The researcher found that this novel is very rich in scientific aspects and in educational features which deserve an epistemological study. It is important to note