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Islamic Studies Teachers' Perspectives of Applying Technology in Saudi Arabia Elementary Schools

Abstract

In recent years, the use of technology in education has been on the rise around the world, and Saudi Arabia is no exception. The integration of technology in Saudi education has the potential to enhance the quality of education, increase access to education, and provide students with the skills they need to succeed in a rapidly changing world. It also has the potential to facilitate collaboration between students and teachers, both within and outside the classroom, and to promote lifelong learning.

The purpose of this qualitative study is to investigate Islamic Studies teachers' perceptions of using technology in their classrooms in elementary schools in Riyadh, Saudi Arabia. The collection of survey data and interview outcomes is part of this study. First, an electronic survey was distributed to Islamic Studies instructors in Riyadh elementary schools to determine their views on the use of technology in education. Following that, semi-structured interviews were conducted with a number of Islamic Studies teachers in order to better understand their perspectives on the use of technology in teaching and learning processes. The goal of gathering survey and interview data was to gain a comprehensive knowledge of the information received.

Findings show that Islamic Studies teachers are willing to use technology in their teaching and are keen to use it to enhance students' learning. However, the teachers expressed some of the obstacles they face, such as the lack of technical resources and the absence of technical support. Additionally, the study found that the teachers' beliefs influenced how they used technology. Ultimately, this study presents a deeper look at the teachers' opinions on teaching Islamic Studies in elementary classrooms using technology to present a comprehensive picture of the Saudi educational system to teachers, teacher preparation departments, and policymakers in the Ministry of Education.

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ISLAMIC STUDIES TEACHERS' PERSPECTIVES OF APPLYING
TECHNOLOGY IN SAUDI ARABIA ELEMENTARY SCHOOLS

A Dissertation

Presented to

the Faculty of the Morgridge College of Education

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In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

by

Amal Abdulmohsen Alsaif

August 2023

Advisor: Dr. Brette Garner

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Chapter 1: Introduction

Today, the Kingdom of Saudi Arabia is witnessing a great wave of development at all levels. The Kingdom seeks to nurture and develop human resources because it believes in their importance in advancing the future of the country. In 2016, Saudi Arabia launched the 2030 Vision of the Kingdom, which aims to develop a bright future to put Saudi Arabia in the right place. Since education is a fundamental pillar of the country, education was one of the first fields that received support and care from the government, and determining a budget and human efforts to be allocated to education were steps toward achieving the vision. Saudi Arabia is a part of the world that experienced a large shift in the use of technology in many fields, including the field of education; therefore, one of the things that arose after the Kingdom's 2030 vision was the human capacity development program (Vision 2030, 2022). This program aims to primarily prepare citizens with characteristics that qualify them as global competitors with expertise and requirements, including experience with technology experience. Consequently, the Ministry of Education sought to develop the educational process by encouraging teachers and students to include technology in the teaching and learning processes and started providing schools with several devices.

Because most global visions stem from research and education as their basis, integrating technology into education requires developing a flexible and solid educational foundation. A deepening understanding of the importance and benefits of technology in

education are important areas of research that contributes to qualifying teachers for the field and preparing students to harmonize with national development ideas.

Hawthorn (2018) indicates that the use of technology in education provides strengths for students and often facilitates their access to information. But the introduction of technology in education requires teachers to be aware of its full potential, to understand how to utilize it effectively, and to reimagine teaching and learning around it.

Islamic Studies for Elementary Schools

In elementary education, Islamic Studies are divided into four subjects. Three of the subjects were gathered recently in *Islamic Studies* (2022), including Fiqh (Jurisprudence), Tawhid (Monotheism), and Hadith (the Prophet Mohammad's Sunnah). The fourth subject, the Holy Quran, is still separate, and students are taught how to recite and memorize it. Jurisprudence (Fiqh) focuses on "knowledge of practical legal rulings gained from their detailed evidence" (Alahmadi et al., 2003, p. 18). Comparatively, Tawhid means "it is for the servant (human) to be certain and acknowledge that God is one and has no partner in his lordship, divinity, names and attributes" (Altuwajjri, 2009, p. 29). The subject focuses on instilling the love of Islam in the hearts of students by explaining the three types of monotheism: the oneness of God in His lordship, the devotion of all worship to God alone, and the oneness of God in His names and attributes. And Hadith means "it is what is added to the Prophet, may God's prayers and peace be upon him, in terms of his words, actions, and approval" (Almunawir, 2015, p. 6), and the subject focuses on equipping students with Islamic behaviors by following the example of the Messenger Mohammad, peace and blessings be upon him. The Holy Quran usually

focuses on introducing the meanings of the Quran's words and a simplified interpretation of the stories and rulings contained therein. As for the Quran recitation, students are taught to pronounce the Quran's words well and read them fluently.

Characteristics of Islamic Studies

Islamic Studies is characterized by a number of characteristics (Alnaji, 2019). The curricula of Islamic Studies occupy a great position compared to other educational curricula because Islamic Studies curricula derive their content from Islam. These curricula are characterized by being of divine origin, which means that they have sanctity and honor that determine the methods used in teaching them. For example, when teaching the verses of the Holy Quran and the hadiths of the Prophet, teachers use strategies that focus on proper reading and memorization. Also, they take the selection of appropriate strategies for the lesson into account because the words of God Almighty must be carefully and accurately explained. It is characteristic that the curricula of Islamic Studies educate students' behaviors and attitudes, which makes the focus on teaching tools that simulate conscience important. In addition, the Islamic curricula are diverse and realistic, meaning that they directly affect students' lives. Most of what is taught in the subjects of Islamic Studies is related to the daily needs of individuals, such as prayer, honoring one's parents, and doing good to one's neighbor.

The Aim of Teaching Islamic Studies

Educators teaching Islamic Studies aim for students to achieve a variety of learning outcomes. Specifically, educators seek to build concepts and facts, develop skills, direct trends, and instill values in students. Islamic Studies curricula in most Islamic countries

contribute to the formation of an Islamic identity for students and develop their morals. Islamic subjects build the personality of “the Muslim” through cognitive, emotional, and skill aspects, as Islam is meant to clarify knowledge, instill values, and apply behavioral correction. Thus, Islamic Studies lessons show students the way to God Almighty, which is the purpose of their existence in this life. The God Almighty said: *وَمَا خَلَقْتُ الْجِنَّ وَالْإِنْسَ إِلَّا لِيَعْبُدُونِ* " (Al-Dhariyat, 2022, 56), which translates to: And I did not create the jinn and mankind except that they should worship Me.

As for the objectives of teaching Islamic studies in Saudi Arabia, long-term goals were set with the beginning of establishing public schools in the Kingdom. These objectives for teaching Islamic Studies courses were specified in the Saudi Education Policy Document (1980) and summarized in Table 1. The Saudi curriculum was designed with these aims in mind but also with medium- and short-term goals for every subject.

Table 1: Islamic Studies Goals

Objectives of Teaching the Holy Qur'an	Objectives of Teaching Fiqh	Objectives of Teaching Tawhid	Objectives of Teaching Hadith
<p>Linking the students to the Quran, teaching them to be polite with it, and instilling its love in their souls.</p> <p>Meditating on the Holy Quran and acting according to it.</p> <p>Identifying the names of the</p>	<p>Providing students with correct information on transactions, acts of worship, and morals that are the subjects of the Fiqh.</p> <p>Training students to deduce rulings from the Holy Quran and the Sunnah.</p>	<p>Introducing students to their creator, and building the Islamic faith on the basis of understanding and persuasion.</p> <p>Educating students to believe in the six pillars of faith (faith in God, His angels, His books, His messengers, the Last Day of</p>	<p>Rooting the love of the prophet Mohammad, peace and blessings be upon him, in the hearts of students through knowledge of his personality and virtues.</p> <p>Introducing his honorable Sunnah, and considering him a role model for students.</p>

<p>surahs, the number of their verses, and the reasons for their revelation from God Almighty.</p> <p>Developing remembrance skills by mastering reading and memorizing surahs prescribed in the curriculum.</p> <p>Pronouncing letters and words correctly.</p>	<p>Realizing the objectives of Islamic legislation and individual, social, worldly, and religious interests.</p>	<p>judgment, and in destiny, its good and bad).</p> <p>Warning against all forms of polytheism in the worship of God Almighty.</p>	<p>Instilling comprehension of the hadiths of the prophet, may God bless him and grant him peace.</p>
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Research Problem

This research study aims to understand the perspectives of female Islamic Studies teachers and their experienced realities of integrating technology into education and the obstacles they face. I hypothesize that teachers of Islamic Studies hold positive beliefs towards technology in education, but they may struggle with ways to integrate technology into teaching Islamic Studies and face a lack of appropriate technical resources. In short, the study seeks a deep grasp of teachers' conceptualizations of the link between technology and pedagogy.

Using technology to improve education depends fundamentally on teachers because of teachers' roles in the educational process. According to Alharbi (2012), teachers are instrumental in the successful implementation of technology in education if they believe in its significance. Because Islamic Studies make up a large portion of the educational curriculum in Saudi Arabia, there is a greater need for research that focuses on

technology in teaching Islamic Studies in elementary schools. As indicated by Presridge (2017), technology allows teachers to improve their performance, as it reshapes some of their previous beliefs about the learning process. Therefore, this research contributes to understanding teachers' viewpoints towards the use of technology and provides results and recommendations that benefit teachers and decision-makers in the Saudi Ministry of Education.

Also, certain factors contribute to the necessity of focusing on the true reality of educational technology in Saudi schools. In the following sections, I describe some of these issues:

The Acceleration in Integrating Technology in All Fields in Saudi Arabia

Technology has increasingly occupied a broader position in the Saudi Arabian educational system over the last decade, especially after the COVID-19 pandemic. Since March 2020, schools have been run entirely online around the country. More than ever, all aspects of modern life depend on technology, which creates the need to improve technological literacy in schools. Furthermore, students need to improve their use of technology, especially in learning, to ensure future success in their lives. According to Siefert et al. (2019), students' learning improves when integrating technology in schools, but technology use must be considered as a helping tool for learning and not as a means to an end.

Based on the 2030 Saudi Vision, many initiatives have been established to achieve the goals of the vision. Below, I review the most critical initiatives that correspond to the objectives of my research.

First, The Saudi education system recently established a project called Future Gate. This project was established in 2017 as the foundation for integrating technology more intensely in teaching and learning (Ministry of Education, 2021). Future Gate aims to support e-learning in different ways and transfer learning to a learning environment focused on engagement, as both an information and content portal. Therefore, Future Gate provides easy contact between teachers, students, and parents in one place during school hours and after school ends (Sufraan & Alhasan, 2020).

Second, the Council of Ministers in Saudi Arabia established the National e-learning Center in 2018 as an independent center (National e-learning Center, 2021). The center's vision seeks to ensure recognition of all types of e-learning that can be used in education. The center is also keen on equal access to all learners and provides e-learning opportunities related to individual learners' needs. Moreover, the center aims to improve the speed of response to e-learning that is dependent on different variables, such as the COVID-19 pandemic. Finally, the center has invested in new technologies such as artificial intelligence, data analytics, and blockchain. Thus, e-learning is a means to meet changing needs and solve complex educational problems. The National e-learning Center also established a national e-learning indicator to help measure the use of technology by students, teachers, and workers in the field of education. The gauge is still in the development stage; however, the first experimental version was launched in 2019, which targeted 26 public universities in all regions of the country. The indicator measured seven main parts: readiness, utilization, systems, courses, quality, training, and impact. Results

showed that in 35% of universities, 76- 100% of faculty members apply e-learning in teaching (The National e-learning Center, 2020).

Third, in 2019, Saudi Arabia adopted the strategies of SDAIA to achieve the goals of the Saudi Vision 2030 (SDAIA, 2021). These strategies aim to build an economy based on data, innovation, and creativity. SDAIA works with three critical bodies: The National Data Management Office, the National Information Center, and the National Center for Artificial Intelligence. This research focuses on SDAIA's efforts to develop the use of technology in education. The start of the COVID-19 pandemic occurred several months after the implementation of the SDAIA strategies, so the strategies sought to find solutions to help the education sector in Saudi Arabia. As a result, SDAIA has issued several publications (e.g., Althabit, 2020; Aldahshan, 2020; Hariri, 2021) that explain global experiences using data and artificial intelligence to confront the COVID-19 pandemic in education. Moreover, SDAIA held a competition to find technical solutions to meet educational challenges.

Fourth, the Ministry of Education in Saudi Arabia places great emphasis on using technology in its various forms in education. For example, in March 2021 and coinciding with the spread of COVID-19, the College of Education at Imam Mohammad bin Saud Islamic University held a scientific forum entitled "Applications of Artificial Intelligence in Teaching and Learning." The forum aimed to introduce artificial intelligence and its contribution to various fields in Saudi Arabia, most notably education. The participants of the conference reviewed different types of artificial intelligence applications and their

uses in education. The most prominent applications were adaptive learning, personalized learning, and distance learning.

The scientific forum for artificial intelligence reviewed many of the country's achievements in linking technology to daily life. For example, Saudi Arabia has invested 75 billion Saudi riyals in artificial intelligence (Argaam, 2023). As a result, more than 20,000 specialists in artificial intelligence have been trained. Moreover, the country has provided more than 40,000 direct and indirect jobs in this field.

Saudi Arabia is witnessing great leaps in technology and education, and my research supports of this shift in education development; however, additional research on education in Saudi Arabia is still necessary to contribute to advancement in education. Therefore, the educational system in Saudi Arabia needs to focus on improving student learning by various means, including electronic and digital educational mechanisms, and my study provides for this need.

Lack of Research on Teachers' Perspectives on Technology Use in Islamic Studies Classes

Majority of the literature on the use of technology in teaching and learning focuses on the use of technology in subjects other than Islamic Studies. While some studies focus on students' perspectives on using technology in Islamic Studies classes, limited studies examine teachers' views. Research on the perspectives of Islamic Studies teachers is necessary, especially given that Islamic Studies teachers tend to not use technology continuously and utilize technology the least in Saudi schools. (Asiri & Waza, 2011; Almufda, 2020; Khoj, 2021).

As shown in studies focused on teachers of other subjects, technology enables those teachers to present lessons in more engaging ways to students and to spend less time giving lectures. Moreover, students turn from mere listeners to participants in problem-solving, active learning, and interaction with their academic environment (Gulek & Demirtas, 2005; Devlin et al., 2013). Consequently, implications of this research suggest that technology can enhance teaching and learning in Islamic Studies classes. This corresponds with the transformation happening in the Saudi school system that aims for more use of technology if required.

Significance of Problem

The research problem aims to examine the perspectives of female Islamic Studies teachers about applying technology in elementary schools in Saudi Arabia. After researching previous studies of technology use by teachers of Islamic Studies, scholars recommend further research on this topic (Asiri & Waza, 2011; Alnajem, 2016; Almqateef, 2017; Alshyti, 2017; Alharbi, 2019; Almajed & Alsaif, 2020; Almufda, 2020; Khoj, 2021).

Of the studies listed, only one focuses on teachers' attitudes toward using technology for all Islamic Studies subjects. The rest of the studies either focus on one subject of Islamic Studies or on the extent to which Islamic Studies teachers activate learning resource centers. While related, a learning resource center is a room in the school that contains teaching tools that can be but are not necessarily, technological.

Furthermore, the reduced prevalence of technology in Saudi Arabian classes, compared to other countries, supports the need for this current study. Marcon and

Lamushy (2019) argue that the Arab world needs a significant change for 21st-century learners and that education levels in Arab countries, including the country of Saudi Arabia, are lower compared to developed countries, such as the United States. For instance, when comparing the prevalence of technology in Saudi Arabia with the prevalence of technology in the United States, there is a significant difference. In the United States, 97% of public K-12 schools report having access to technology in the classroom for educational purposes (Gray et al., 2010, as cited in Siefert et al., 2019). While not a direct comparison, in Saudi Arabia only 35% of universities showed that 76-100% of their faculty members apply e-learning in teaching (National e-learning Center, 2021). This comparison between technology use in K-12 in the United States and higher education in Saudi Arabia demonstrates a significant discrepancy in use of technology for education. The fact that technology in elementary and secondary schools in Saudi Arabia is utilized even less than in higher education demonstrates that technology is utilized significantly less in Saudi Arabia schools, as compared to use in the United States. Therefore, the educational system in Saudi Arabia needs to bridge this gap by focusing on electronic and digital educational mechanisms to improve student learning, and teachers offer invaluable perspective to implement such changes. This research will fill a gap in the field of education, especially in Islamic Studies and technology.

My study adds value to the field of Islamic Studies in that it examines Islamic Studies teachers' perspectives through the lens of Technological Pedagogical Content Knowledge (TPCK, Koehler & Mishra, 2006). In my research, I analyze how teachers' knowledge of pedagogy impacts their integration of technology. The research is not be limited to

whether Islamic Studies teachers use technology or not; instead, the research focuses on how teachers understand Islamic Studies content coupled with the possibility of integrating technology.

Study Purpose

In this research, I am interested in focusing on teachers' perspectives about the integration of technology in Islamic Studies classes for two reasons. First, I specialize in teaching curricula and methods of teaching Islamic Studies at King Saud University in Saudi Arabia. Second, unfortunately, in Saudi schools, technology is not integrated into Islamic classes as clearly and continuously as in other classes, such as science, mathematics, languages, art, and social studies. I am interested in how this discrepancy may be due to various obstacles that prevent the inclusion of technology in the learning process (Abwlatifata & Eisaa, 2013; Alshaymi & Alzebidi, 2019; Almufda, 2020), and it is one of the study objectives to reveal such obstacles.

Research Questions

The two research questions for this study are:

1. What types of technology do female Islamic Studies elementary school teachers use in their current practices?
2. What are the perspectives of female Islamic Studies elementary school teachers on applying technology in Saudi Arabian elementary schools?

Research Design and Methodology Overview

I utilize my conceptual framework to frame the study to understand the impacts of integrating technology in education. The objective of this research is to discover the

perspectives of Islamic Studies teachers in applying technology in elementary schools in Saudi Arabia. I began by discussing teachers' knowledge of pedagogy and their knowledge of the uses of technology. Then, I discussed their views on integrating technology into Islamic Studies classes.

The research sample is female teachers because I work at the College of Education at King Saud University and prepare female Islamic Studies teachers. Therefore, the results of my research will directly help the department in preparing future teachers. Also, there is a current trend for the Ministry of Education in Saudi Arabia that seeks to integrate boys and girls in elementary schools, and the teachers will be female (Ministry of Education, 2021).

In this study, I employ a phenomenological approach for my study, which helps me understand the various perspectives of Islamic Studies instructors on their use of technology in teaching and learning. I chose this method because teaching using technology is a clear phenomenon for a group of teachers in Riyadh. According to Creswell (2013), the phenomenology approach aids in understanding the broad essence of people's experiences with a specific phenomenon.

I collected data by distributing a survey to all Islamic Studies teachers in Riyadh's elementary schools, totaling 3,425 teachers. Naturally, the responses to the survey were limited, and I received 158 responses. After that, I randomly chose a sample of eight teachers for in-depth interviews. The interviews enable listening to and discussing the actual words of the research sample, all of which contributes to a better understanding of the phenomenon being examined (Creswell, 2016). I conducted the interviews in Arabic

because it was the primary language for the interviewees. I then translated their interviews into English. I conducted each interview over Zoom, and interviews lasted for approximately 60 minutes in length. Finally, I summarized the data into codes and then analyzed the data based on the significant themes (Creswell, 2013).

Supposition

To assist researchers and decision-makers in the field of education to produce reliable and exact data, this study assumes that Islamic Studies instructors have given their impressions of integrating technology in the teaching set in elementary schools honestly and unbiasedly.

Strengths of the Proposed Study

The strength of this study is that it expands on the contemporary research of technology usage in the field of education. Given the development that Saudi Arabia seeks to reach and the electronic potential in the education sector in particular, the current study is distinguished by presenting results and recommendations for interested education agencies in Saudi Arabia, including the Ministry of Education, education administration, education offices, and schools.

Furthermore, the study focuses on teachers' use of technology in light of technological pedagogical content knowledge, (TPCK; Koehler & Mishra, 2006), as the conceptual framework of the study. This allows for the disclosure of teachers' information about pedagogy and technology and how their previous educational beliefs affect their current technology uses. Researchers have studied TPCK extensively, and it is used across curriculums, but TPCK has not been applied to Islamic Studies. For this

reason, this study closes a knowledge gap in the literature. As a result, the combination of the conceptual framework with the analysis of the study's findings provides educators with relevant recommendations for effective technology integration in their classrooms. Additionally, it thoroughly highlights the barriers to implementing educational technology.

Another strength of this qualitative study is that it provides in-depth and detailed information about Islamic Studies teachers' views on technology integration. Choosing a qualitative approach to study a research problem is appropriate when the problem needs to be explored, when a complex, detailed understanding is required, and when the researcher wishes to understand the context or settings of participants (Creswell, 2013). Also, the use of the phenomenology approach helps capture the experiences of teachers using technology in education and the phenomenon's characteristics. As Creswell (2013) states, the type of problem most suited for the phenomenology approach requires understanding numerous people's common or shared experiences with a phenomenon.

Summary

Although students in Saudi Arabia's schools receive the main subjects taught around the world, they also receive—unlike much of the rest of the world—intense classes in the Islamic religion. This puts a lot of pressure on Islamic Studies teachers in Saudi Arabia. As a result, Islamic Studies departments try to qualify prospective teachers as well as present teachers by offering a wide range of pedagogy and technology courses.

My study reveals the beliefs that teachers hold towards technological integration, the difficulties they face in integrating technology in some situations, and the extent of

availability of appropriate technology for the Saudi curriculum. In Chapter Two, I evaluate previous literature on teaching Islamic Studies and merging technology. In Chapter Three, I present the research method used in this study. Then, in Chapter Four, I analyze the study data and present the results. In Chapter Five, I explain the implications, recommendations, limitations, and possibilities for future research.

Definition of Terms

Technology. “Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources”(AECT, 2008, p. 1).

Teachers’ Perspectives. I define teachers’ perspectives in this study as teachers’ beliefs, opinions, thoughts, and understanding about technology use that is generated from life experience, pedagogical practice, and other factors. These views are extracted from the teachers through specific questions set in the study survey and interview.

TPCK. Technology knowledge is knowledge of integrating technology tools in teaching and learning. Technological content knowledge is the intersection between the knowledge of technology and the knowledge of content and how they impact one another. Technological pedagogical knowledge is the change in teaching and learning when using technology in specific ways (Koehler & Mishra, 2006).

Islamic Studies Teachers. Islamic Studies teachers are teachers who have graduated from Islamic Studies pedagogy departments. Some of them have bachelor’s degrees, and others have Master’s or Ph.D.’s. The Ministry of Education appoints these teachers to teach Islamic Studies in schools. They can be qualified for teaching all or any of the five

different Islamic subjects: the Holy Quran, and its Recitation, Hadith, Jurisprudence (Fiqh), and Unification (Tawhid).

Elementary Schools in Saudi Arabia. In the education system in Saudi Arabia, students go through three different phases of schooling before college. Elementary school comes first, with six years. Then comes middle school, with three years. After that, high school comes with three years. Children can start elementary school at the age of six years old. There are schools for boys, which are run by male staff and male teachers. Also, there are schools for girls, managed by female staff and female teachers. Recently, the Ministry of Education in Saudi Arabia has begun to integrate first, second, and third grader boys with girls in girls' schools, taught by female teachers. But, girls' middle and high schools are still entirely separated from boys' schools. In my research, I focus on elementary school teachers. This phase of schooling is the first official stage for students. Therefore, it is a foundational stage for all academic subjects, especially Islamic Studies, making it essential to have well-prepared teachers for this phase of schooling.

Saudi Ministry of Education. It is the ministry that administers the official schooling system comprising preschool, kindergarten, elementary, middle, and high school. The ministry governs the curricula, school books, buildings, administration, teachers, students, and all equipment related to the educational process.

Saudi Education System. The education system is developed by the decision-makers in the Saudi Ministry of Education, based on the Saudi Education Policy document developed by the government. The education system is applied to all regions and cities of

the Kingdom through unified education goals and textbooks that are distributed at the beginning of each school year to all public elementary, middle, and high schools.

Chapter 2: Review of the Literature

Primarily, technology in education depends on the organizational policies and practices for using technology in classrooms (Calvo, 2018). Many authors of studies reviewed in this research state the importance of incorporating technology into teaching and assert that it helps in improving educational outcomes (Callow & Orlando, 2015; Alnajem, 2016; Almqateef, 2017; Prestridge, 2017; Sheffield et al., 2018; Almajed & Alsaif, 2020; Aidarbekova et al., 2021). They also claim that technology integration in classrooms makes learning easy and fun for learners (Tamim, 2013; Al-Busaidi et al., 2016; Siefert et al., 2019). Furthermore, they observe an increase in student learning and teacher satisfaction with student performance (Alnajem, 2016; Aljabir, 2021). However, a critical point is the "judicious" use of technology in classrooms (Ball & Stacey, 2005, p. 3). Many researchers focus their studies on whether teachers use technology or not. But what interests me in this research is *how* teachers introduce technology into teaching and learning and the potential barriers to using technology effectively. For example, when teachers use technology just to include it in the educational process, its use may or may not have many benefits. But, on the other hand, if technology is used because the content of the subject or the needs of the students require it, the use of technology is more likely to be of great benefit.

In this chapter, I present the conceptual framework that frames the study. Also, I demonstrate the literature review and analysis.

Conceptual Framework

According to Miles and Huberman (1994), the conceptual framework is essential to understand a phenomenon, analyze the state of variables or concepts, and organize new data into certain classifications. The conceptual framework that determines this study was established by Shulman in its initial form. Shulman (1986) introduced the concept of pedagogical content knowledge (PCK); he emphasized the significance of teachers' depth of content knowledge and teachers' abilities to adequately teach this knowledge to students. Shulman (1987) argued, "the teacher must have not only depth of understanding with respect to the particular subjects taught, but also a broad liberal education that serves as a framework for old learning and as a facilitator for new understanding" (p. 9).

From this point of view, it is believed that the teachers' awareness of the content of the subjects they offer — whether science, mathematics, art, languages, or others — is not enough for them to teach well. Instead, content knowledge must be accompanied by knowledge of pedagogy.

The conceptual framework I use in this study is Technological Pedagogical Content Knowledge (TPCK). It is an extension of PCK and a complex interaction of three areas of knowledge: pedagogy, content, and technology. I used TPCK to understand Islamic Studies teachers' use of technology and their perspectives toward it.

Pedagogical Content Knowledge (PCK)

One of the goals of education worldwide, especially in the 21st century, is to prepare qualified teachers so they are capable of the content and pedagogy. Shulman (1986) divides knowledge into categories of content and pedagogical knowledge. He describes

content knowledge (CK) as the amount of knowledge organized in teachers' minds. This includes the teachers' mastery of the material that they provide and the extent of their comprehension of it in all its details. Shulman (1986) describes pedagogical knowledge (PK) as the knowledge about subject matters that enhance teaching. The focus here is on knowing what content is teachable and how to present it to students in an effective way. Pedagogical knowledge is familiarity with general principles of classroom organization and administration (Shulman, 1986). Under this point, teachers need to be prepared to take over the management of the educational process, control students' behaviors, and organize class environments and time.

As for the idea of pedagogical content knowledge (PCK), it is defined as the teachers' knowledge of their pupils, ability to employ fundamental pedagogical approaches, and mastery of content knowledge in the teaching-learning process (Shulman, 1987). PCK considers four aspects of knowledge that teachers need to reflect upon: teacher knowledge of teaching principles, academic content, student characteristics, and the context of the learning environment (Cochran et al., 1993). These four pieces of knowledge work simultaneously, side by side, and none of them should be neglected. A very critical point that Shulman (1986) makes is about teachers' understanding of their students' educational backgrounds. Students come to school with different concepts and beliefs about certain subjects. Teachers' knowledge of that makes them choose the appropriate teaching methods to correct misconceptions and build on correct concepts.

Technological Pedagogical Content Knowledge (TPCK)

TPCK is an extension of Pedagogical Content Knowledge (PCK) extension. Many educational institutions worldwide want to increase teachers' effectiveness in implementing teaching strategies that contain technology (Adipat, 2021). Furthermore, the global COVID-19 pandemic has proven the importance of technology in education. Also, it proves that technology could provide several alternatives to face-to-face education (UNESCO, 2020). Such circumstances indicate that teachers need to increase their digital competence in using technology and know-how to choose appropriate technology tools that suit the content (Prestridge, 2017).

The use of technology in students' learning, engagement, and achievement is the focus of this study. Therefore, the focus also centers on understanding the teachers' perspectives in this study because they are responsible for planning and implementing lessons. The association between learning and technology is dependent on how the four components (teaching principles, academic content, student characteristics, and learning environment) mentioned above are integrated into the teaching context; teachers need to plan, implement, and communicate educational materials effectively (Koehler & Mishra, 2006). Using TPCK contributes to achieving pedagogical goals, and this makes learners more active and engaged during lessons.

TPCK consists of seven aspects: content knowledge (CK), pedagogical knowledge (PK), technological knowledge (TK), pedagogical content knowledge (PCK), technology content knowledge (TCK), technological pedagogical knowledge (TPK), and TPCK (Adipat, 2021; see Figure 1).

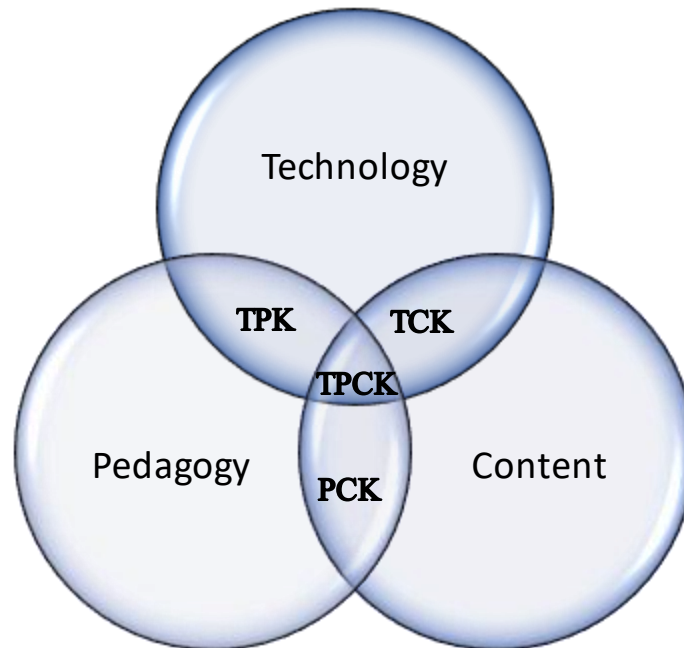


Figure1: Conceptual Framework: Technological Pedagogical Content Knowledge
(Adapted from Koehler & Mishra, 2006, p. 1025)

TPCK focuses on the knowledge teachers should have so they can use technology effectively. According to Koehler and Mishra (2006), Technology Knowledge (TK) is teachers' knowledge about technology: its types, ways of using it, and how to interact with it and benefit from it. Technological Content Knowledge (TCK) is the intersection between the knowledge of technology and the knowledge of content, which is the successful integration of technology in teaching and learning processes. When employing technology, such technology should be appropriate for the topic so that it enhances and facilitates learning. The introduction of technology itself in education is not the final goal; rather, technology should be used to achieve effective learning in a way that suits the students. Finally, Technological Pedagogical Knowledge (TPK) is the change in teaching and learning when using technology in specific ways that is suitable to students,

content, and learning environments. Therefore, if TPCK is used as an educational framework, it can cover many aspects of using technology in education.

TPCK and Islamic Studies

The content of Islamic Studies in the Saudi curriculum is considered sacred, and teachers approach it with caution (Almueajal, 2001). For example, in the case of a teacher referring students to references to provide or enrich the content, that teacher must ensure that the references are reliable and appropriate sources for the curriculum (Alshyti, 2017). Therefore, teachers need to be aware of the appropriateness of the teaching aids or technology used in teaching before applying them. When the teachers or students do not know how to find reliable sources, they risk accessing content that is not representative of the topics of Islamic Studies lessons. One of the study objectives is to explore teachers' perspectives on ways to use technology to help access appropriate and reliable electronic content that serves them in the teaching process.

In the context of TPCK, based on previous studies, some teachers of Islamic Studies face challenges when implementing technology in their classrooms. Therefore, a deeper understanding of the reality of technological integration in Islamic Studies classes is necessary. Specifically, how should teachers integrate technology with the rest of the components of the educational process, such as the age and characteristics of the students, the learning environment, and the nature of the knowledge provided?

Consequently, TPCK covers multiple aspects in teachers' practices with the use of technology (teaching methods, lesson planning, activities, aids, evaluations). One of the most important goals of teaching Islamic Studies in Saudi schools is for students to

benefit from what they learn in their daily lives. This is achieved by the teachers' knowledge of the appropriate teaching methods for Islamic Studies. Islamic Studies are associated with many essential functions in a student's life; they guide students in their worshipping of God, dealing with people, and getting to know themselves and those around them. The message of the teachers of Islamic Studies is similar to the message of the prophets: peace be upon them as all of them call to worship God alone with no partners.

The Prophet Mohammad, may God bless him and grant him peace, used teaching aids to clarify concepts for his companions. For example, when the Prophet told his companions that Islam is one straight way, he grabbed a stick and drew a straight line on the sand, then said, "This is the straight path of God" (Hanbal, 2013, p. 37, 4437). Then he drew separate lines to the right and left of the straight line, showing that these divergent lines distance a person from the right path to Islam.

One of the aspects of incorporating technology into teaching Islamic Studies is using technology tools as teaching aids. This use will help clarify the meanings of words, explain abstract concepts, and raise the efficiency of teaching and learning. Therefore, to make learning meaningful in students' lives and help them apply what they have learned, it is essential for teachers to have sufficient pedagogical knowledge for teaching the subject, as well as the ability to use technology in a way that supports the teaching process.

Technology in education is not just about incorporating technology into teaching and learning. The reality is broader; teachers need to know what technology is appropriate

and when it can be used. Knowing the overlap between TPCK and the teaching of Islamic Studies will assist in a deeper understanding of the reality of technology use in Islamic Studies classrooms in Saudi Arabia.

Literature Review Procedures

In exploring the integration of technology in education and teachers' perspectives of using technology, I completed an electronic database search of peer-reviewed literature using ERIC (ProQuest), PsychINFO, and Dar Almanzuma. The total search result yielded 2,608 articles from the search criteria. I excluded 2,472 articles on the abstract review level and identified 136 articles for a full review. Twenty articles met the inclusion criteria, and I included them in my study. The electronic databases search was set between 2010 and 2021 to include more recent literature on incorporating technology into education. In my search, I used the following search terms: ("digital learning" OR "electronic learning" OR "technology uses in education" OR "educational technology") AND (Islamic Studies) AND ("elementary school" OR "primary school"). The search was restricted to the following criteria:

1. Studies are in peer-reviewed journals, published between 2010 and 2021.
2. Studies are reported in English or Arabic.
3. Participants are teachers working in grades 1 through 12.
4. Studies focus on teachers' perspectives, performance, or adoption of technology in teaching.

Hand Search and Ancestral Review

I completed a hand search of journals that included the articles in my initial search. I searched the following journals from 2018-2021: *The Turkish Online Journal of Educational Technology*, *Reading Psychology*, *Journal of Digital Learning in Teacher Education*, *Computers in the Schools*, *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, *Journal of International Education Research*, *Journal of Early Childhood Literacy*, and *Educational Technology Research and Development*, *Journal of Educational Studies*, *Educational Journal*, *Journal of Al-Qadisiya in Arts & Educational Science*, and *Specialized International Educational Journal*. I found seven additional articles in my search of the mentioned journals, which increased the number of articles that met the inclusion criteria to 27 articles.

Literature Themes

In order to articulate the studies' themes, it is vital to define the meaning of technology in education. Technology in education, and its categories, have been explained in a variety of ways. In my research, I use the definition for technology used in education as the Association for Educational Communications, and Technology (AECT) defines it: "Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources" (AECT, 2008, p. 1).

As for the procedural definition for technology, it is a multi-source interactive educational tool that depends on the computer, the Internet, and digital systems in a way

that allows the students to interact actively with the content, their peers, and the teacher through synchronous or asynchronous learning. This technology may include intelligent education systems, computers, smartphones, tablets, smartboards, apps, simulation software, video games, etc.

The literature reviewed differs on the kind of technology included in the studies. Also, those studies examine the use of technology in different subjects such as languages, literature, and social studies. Therefore, I focus on how technology is used in these classes, then how technology is used in Islamic Studies classes.

Technology-Rich Classroom

The use of technology depends on two main aspects. First, before integrating any technology, teachers must understand the content they want to teach. The content of any subject determines how and in what ways technology might be used. Furthermore, the content influences the type of technology teachers use. Second, teachers need to know pedagogy well. Every teacher has their own knowledge of teaching. If technology tools match teachers' beliefs about teaching, teachers are better equipped to adopt the technology in their classrooms (Dickey, 2010).

Language Classes. In teaching the English language, teachers need to ensure that students receive the learning equally. For example, Siefert et al. (2019) show that it is appropriate to use multimodal technology, such as blogs, podcasts, and online folders, for teaching English. English teachers had positive experiences with the use of technology. The technology allowed students to be given equal learning, especially in reading and writing English. Furthermore, technology supported individual differences between

students because it allowed students to use their auditory and visual senses (D'Agostino et al., 2016).

On the other hand, for teaching the Arabic language there are not many electronic programs that support the educational process. As a result, enhanced teaching of Arabic to native speakers or non-native speakers requires more software and applications to facilitate learning. In several studies that dealt with using technology in Arabic language classes, teachers used different technology tools such as YouTube and Teaching Arabic Language software (TAL) in their classrooms. Learners showed a positive interaction with the content and an increase in their interest to know more. The teachers also expressed their satisfaction with the level of learning that the students had achieved. In addition, they described the facilitation of technology to introduce new words and the process of evaluating students' learning (Tamim, 2013; Al-Busaidi et al., 2016).

The most directed criticism of electronic language teaching programs is that most of them are designed for young students. These programs focus on letter recognition, acquiring a large number of words, and fluency. However, as students increase in educational level, the number of programs that support their learning of the language decreases, including programs for teaching language, literature, and rhetoric (Bippert & Harmon, 2017). Also, one of the criticisms directed to language teaching programs and other electronic educational programs in general is their limitations for working with diverse groups of students. Students from low socioeconomic backgrounds often experience restricted access to these programs. For example, low socioeconomic schools have fewer electronic resources than high socioeconomic schools. Therefore, studies in

this field seek to develop teachers' pedagogical choices and teachers' digital capabilities to ensure that learning is provided to all students in an equitable manner (Steege et al., 2013; Callow & Orlando, 2015; Sheffield et al., 2018; Siefert et al., 2019).

Literature Classes. Literature classes provide an appropriate opportunity to create a cohesive social environment between students and teachers. The content of literature classes is primarily theoretical and depends on reading and discussion. The use of technology in these classes promotes positive interactions between students. For example, the introduction of technology can help shy students participate in electronic discussions more actively (Mantegna, 2012). In addition, technology allows teachers to extend the time limits of their classes. As a result, students can interact with each other's content and discussions at a convenient time during the day and not just during class time (Mantegna, 2012). Allowing all students to participate, receive comments from their peers, and frequently integrate with each other develops strong relationships between students.

In particular, one study examines whether technology in a literature class would improve at-risk students' learning (Maninger, 2006). At-risk students were identified as students who did not progress from one grade to the next, were pregnant or a parent, homeless, or had resided in a residential placement facility. The study found that technology tools had extended the teacher's abilities, which contributed to well-developed relationships between the teacher and her students. Also, using technology created a relaxed climate that raised the students' achievement. As a result, the strong connections between the teacher and students allowed successful behavior management and developed instructional pedagogy.

Social Studies Classes. In social studies subjects, teachers are challenged with a wealth of information, especially in history and geography lessons. Many studies have suggested different ways of communicating this information to students to increase engagement (Krutka & Carpenter, 2016; von Wangenheim et al., 2017). Social studies materials often contain a lot of data, and the use of technology paired with content helps to present this data in a way that can help the teacher increase engagement by gaining the interest of students. In an era of information explosion, many young students are already firmly attached to various means of technology. In social studies classes especially, it is appropriate for teachers to consider using technology tools in their classes, especially if the content of their lessons contains many historical or abstract concepts (Mason & Metzger, 2012).

Several previous studies indicate the importance of integrating computing, specifically programming, within other subjects rather than teaching computing as a stand-alone subject (Razak, 2012; Google & Gallup, 2015). Von Wangenheim et al. (2017) examine students learning computing in a social studies class. One of the ways suggested in teaching programming in social studies classes was by introducing the lesson to students through lectures and discussions (Von Wangenheim et al., 2017). Then, the teacher showed students previous examples of electronic games. After that, students could program their games using different platforms such as Scratch (MIT, 2016). Computing integrated into social studies classes allows students to be productive in the learning process rather than simply recipients.

Furthermore, the use of technology in social studies classrooms helps encourage students to socialize. Social media provides messaging services and influences the attention of others, making students interact with each other. More so, social media helps with community participation. In this way, technology is a window to the world outside the school walls that enables teachers to expand the curriculum informally. According to Krutka and Carpenter (2016), Twitter supports teachers with the resources they need and facilitates continuous learning for teachers and students.

In my study, I focus on elementary schools, and most social media apps have age limits that prevent elementary students from using them; however, teachers can refer students to social media apps designed for their ages and ensure their use of social media happens through classroom devices and under direct supervision of the teachers.

Technology in Islamic Studies Classrooms. There are some existing electronic programs to enhance Islamic Studies teaching and learning. Many programs that help recite and memorize the Quran benefit teaching the Quran (Alshancheeti, 2009). One of the technologies that can support students' learning the Quran and hadith subjects is the Talking Pen Reader. This pen contains a recording of the whole Quran with the voices of 16 reciters. Also, it has audio interpretations of the Quran in several languages and contains most of the prophet Mohammad's— may God bless him and grant him peace — hadiths. Finally, the pen includes supplications that a Muslim needs on their day and night. The pen works when it is attached to the Quran book. When putting the pen on a particular surah, the pen reads it and interprets its meanings. This technology makes it

easier for teachers to teach students the correct pronunciation of the Quran. It also saves time because all students can practice the proper recitation of the Quran at one time.

Furthermore, there are several websites for teaching the Quran. One of these sites is nQuran for the Quran and its sciences, which won the International Organization for the Memorization of the Quran Award in 2011 (nQuran, 2021). The site helps teachers provide the correct recitation of the Quran. It is also a good reference for students in cases of asynchronous learning. The students can hear the recitation of the Quran from the site and then train themselves. Also, they can refer to nQuran for interpretations of words they do not understand.

In other Islamic Studies subjects like Fiqh (Jurisprudence), Tawhid (Monotheism), and Hadith, teachers can incorporate different kinds of hardware and software technology (Alsanidi, 2016; Aljariba, 2017; Almajed & Alsaif, 2020). For example, integrating smartboards can enhance learning by displaying the description of ablution, prayer, or tayammum and then allowing students to interact with the board by doing activities (Almqateef, 2007). Moreover, simulation programs enable students to perform what they learn from the classroom. For example, in the Fiqh subject, there are lessons on Hajj, the fifth pillar of Islam. Hajj has a specific place and time. It is held in Mecca, a city in western Saudi Arabia, and it takes place in a particular month of the year. Hajj consists of actions and words that take place in specific places and days in Mecca. To comprehend these actions and words, the students need to apply them practically after knowing them theoretically. Simulation programs help students to practice Hajj while they are in the classroom. Moreover, with Hajj lessons and any similar lessons, it is appropriate to use

programs that provide virtual experiences for students. For example, an application called "Muslim 3D" enables students to experience the details of Hajj virtually (Stanton, 2020).

According to the examination of the literature, technology is intended to be employed in Islamic Studies to assist student learning. Technology is used in Islamic Studies to assist student learning, improve learning, clarify concepts, provide education for all, consolidate what students learn, and support student learning.

Teachers' Perspectives of Integrating Technology

Teachers are a fundamental key to the success of efficiently integrating technology into education and their classrooms (Mandell et al., 2002, as cited in Siefert et al., 2019). Isman and colleagues (2012), find that teachers believe that using technology in teaching has a positive effect on students' learning.

Integrating educational technology with pedagogy allows teachers to focus on their pedagogical beliefs and practices around technology. Integrating technology in the classroom is not solely about the use of technology tools; it is about teachers' beliefs around technology and Technological Pedagogical Knowledge (TPK). Recently there has been discussion of how teachers form their beliefs around the use of technology in their classrooms (Prestridge, 2017). There is a correlation between teachers' views on technology and their actual practices in classrooms (Levin & Wadmany, 2007). In other words, teachers' beliefs about technology shape their instructional practices (Kim et al., 2013). Teachers who have positive opinions of technology tend to integrate it more. This increased use of technology comes as a direct result of teachers' realizations of the

improvement in students' learning compared to other educational tools (O'Neal et al., 2017; Prestridge, 2017).

Moreover, some literature explores teachers' perspectives and their attitudes toward technology (Tamim, 2013; Al-Busaidi et al., 2016). Researchers asked their participants about the advantages of technology integration in classrooms. Teachers who had a positive attitude toward technology employed various effective types of technology to develop students' linguistic skills and provide meaningful communication opportunities to practice the language. Teachers were more motivated to use technology and were innovative and creative in how technology tools were included in the lessons. These studies found a strong correlation between teachers' beliefs in the impact of technology and their usage of it (Tamim, 2013; Al-Busaidi et al., 2016).

In general, studies reviewed show a clear relationship between teachers' perspectives on using technology and their actions in the educational environment. Typically, teachers who are receptive to change in their teaching policies are the quickest to use and adapt to technology in their classrooms. Moreover, pre-service training on using technology helps teachers incorporate technology into their teaching because teachers gain new beliefs and opinions at the training stage of their development (Alharbi, 2019).

Islamic Studies Teachers' Perspectives. From reviewing the literature, I organize studies into three sections: 1) reluctance toward technology, 2) readiness to include technology, and 3) willingness but inability to include technology.

The first section is studies in which teachers show some reluctance toward using technology in Islamic Studies classes. According to Khoj (2021), Islamic Studies teachers

tend to use traditional methods of teaching that are far from employing modern technologies. The previous study also shows that the use of technology in teaching reduces teachers' time and effort. Abwlatifa and Eisaa's (2013) study investigates the reality of the use of technology by Islamic Studies teachers, and it emerges that they apply technology-use sparingly for a variety of reasons, including a shortage of equipment, classes that are not equipped, or a high number of learners in the classes.

However, there is a strong need for using technology in Islamic Studies classes. Teaching Islamic Studies, like other subjects, needs technology aids to assist in explaining and presenting the subject to students. But it is necessary to use technology in teaching Islamic Studies because Islamic Studies are considered basic subjects and are provided to all students in public and private schools in Saudi Arabia from K-12. In the education policy documents, the Saudi government emphasizes that Islamic Studies is essential for all students and special attention should be given to its content and methods of teaching.

Alharbi (2019) attributes the reasons for the reluctance to use technology by some teachers of Islamic Studies to teachers' beliefs about technology. Alharbi (2019) divides teachers of Islamic Studies into two groups: teachers who believe in student-centered instruction and teachers who believe in teacher-centered instruction. Teachers who say that the educational process is student-centered tend more than others to create an active learning environment. Also, they welcome technology in their classrooms and observe that it increases students' learning outcomes. Therefore, teachers' views of the educational process shape their actual practices.

The second section of the studies reveals that Islamic Studies instructors are ready to incorporate technology into their lessons and they carry positive tendencies toward it. For instance, Alnajm's (2016) study, which deals with a proposal to develop the performance of teachers of Islamic Studies to use digital technology, demonstrates a positive impact of the program on teachers and their mastery of digital technology skills.

The third section of the previous studies shows the willingness of teachers of Islamic Studies to use technology, but at the same time, an inability to do so (Almufda, 2020; Khoj, 2021). For example, Alharbi's (2019) study monitors a positive trend among teachers when using web applications, such as simulation games, social networking, Twitter, Second Life, etc., but notes a weakness in their practice due to the lack of technical equipment in the classroom. Instructors experienced obstacles in their use of technology, including a lack of competence to work with certain forms of technology, which caused them to hesitate in introducing new technology. There was also a shortage of tools in some schools and unreliable access to technology in classrooms.

Summary of Findings

These themes emphasize the importance of using technology in education around the world. While schools are no longer devoid of computers, tablets, the Internet, or other electronic learning devices, discussion still remains: how do teachers feel about using technology in their classrooms, and how do their perspectives about technology impact their practices?

Some studies agree that teachers' positive attitudes toward technology help in applying technology tools in engaging ways, help in the progress of students' learning,

and raise students' attention and focus on what they learn. Consequently, instructors' teaching performance is affected by their different understandings of the importance of technology in education. (D'Agostino et al., 2016; Bippert & Harmon, 2017).

Literature Review Conclusion

As evident in the studies reviewed, researchers, teachers, and students show interest in using technology. These studies assume that technology is an effective solution for improving the quality of education and that schools in the 21st century need to be supported by technological devices. In fact, as a former teacher, I have had an orientation toward maximizing the role of technology in teaching until recently. I have realized, through my current studies, that technology is an element of learning, but it is not the end-all-be-all of education. Its importance increases if the educational situation requires and benefits from its presence and decreases if the educational situation does not accommodate it. When teachers know that the existence of technology is to enhance student learning and facilitate teaching for the teacher, the likelihood of both students and teachers benefiting from technological integration will be significant.

Future Research and Personal Significance for Future Study

In light of the Saudi Vision 2030 to develop education and the continuous increase in integrating technology in education worldwide, there is room and necessity for more studies examining the use of different tools of technology and their impact on learning. Based on the literature review, the current study is an important addition to examine teachers' perspectives on the importance of technology in education and the occasions for its use in depth. Thus, there are increasing opportunities for further research in finding the

appropriate educational environment and providing support for the process of technological integration, and I plan to lead in this arising area of research.

Chapter 3: Methods

Introduction

Technology has become a fundamental component of everyday functioning in recent years. Children are frequently introduced to and utilize technology before beginning school. At the same time, teachers face hurdles in keeping up with technical innovations in the contemporary age. Teachers strive to achieve the necessary levels of learning for each student by balancing education and the use of technology. As a result, technology should assist both the instructor and the student at all levels of learning.

In this research, I reveal the perspectives of Islamic Studies teachers on their experienced realities of using technology in teaching and learning in public elementary schools. As the majority of students in the city of Riyadh attend public schools, I concentrated on these schools in my research. It should be mentioned that public schools across the Kingdom use the same curriculum. This chapter demonstrates the research method I use, which is the phenomenology method. In addition, survey and interview questions are developed through the conceptual framework used in this study as well as for the process of data analysis and coding.

Research Questions

The research questions for the current study are:

1. What technology do female Islamic Studies elementary school teachers use in their current practices?

2. What are the perspectives of female Islamic Studies elementary school teachers on applying technology in Saudi Arabian elementary schools?

Research Design

I employ a qualitative research design, which is a phenomenology approach. This study design aids in understanding the viewpoints of Islamic Studies teachers on the use of technology in education. According to Creswell (2013), adopting the phenomenological technique assists in comprehending the broad essence of people's experiences with a given occurrence. Although the research is primarily qualitative, I rely on two types of tools to gather data: a survey, to gain a broad understanding of the phenomenon, and interviews, which provide more comprehensive insight and depth in the interpretation of the results. According to Crowe et al. (2011) and Leavy (2017), the data acquired through diverse methods leads to related conclusions; thus, investigating the same subject from multiple angles can create a comprehensive picture of the phenomenon and individual experience.

My method of collecting, analyzing, and interpreting data is similar to the nesting design (Leavy, 2017), in that it starts with quantitative as a secondary data and then follows with qualitative as a primary data (see Figure 2). I also analyze and interpret qualitative data using quantitative data. Aside from age, academic background, and teaching experience, I gather quantitative data that allows me to present an overview of the extent to which Islamic Studies instructors utilize technology as well as the types of technology available to them, which is the major purpose of producing the survey.

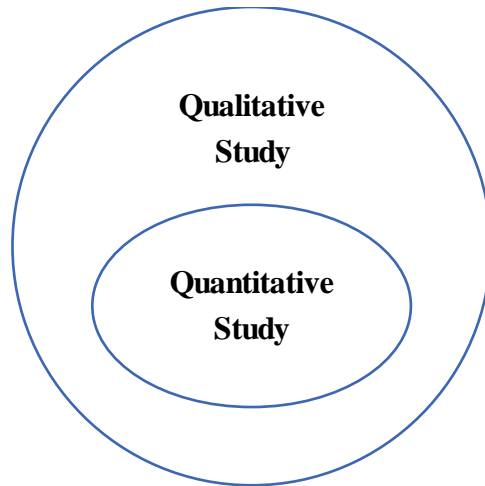


Figure 2: Quantitative Nested in Qualitative Designs (Adapted from Leavy, 2017, p. 178)

Data Collection Procedures

I started the process by obtaining approvals from the IRB at the University of Denver and King Saud University in Riyadh (Appendix A). After that, I contacted the General Administration of Education in Riyadh, and they offered me permission; this step was necessary to facilitate my task as a researcher to reach the teachers (Appendix B). The process was that the administration delivered a letter to all Riyadh elementary schools, providing them with the electronic survey code. School principals were encouraged to distribute the code to all Islamic Studies teachers in their schools.

When participants completed the survey, the first question was about the teacher's desire to participate in the survey, and the last question was about the teacher's willingness to participate in an interview. Each teacher who wanted to participate in an interview needed to complete the consent form (Appendix C). The consent form was attached to the survey and was collected through Qualtrics. The consent form included a brief description of the research and how the interview would be structured. Furthermore,

I informed the participants that all the interviews were for research purposes only. Data collection was done using the Arabic language; it was the most appropriate language by virtue of it being the main language in Saudi Arabia, and because it is my native language; this makes me more able to manage the conversation with the teachers and understand their points of view. Therefore, I wanted to ensure that the participants understand the questions and felt comfortable while answering.

Selection Procedures

In Riyadh city, there are 450 public elementary schools. The number of schools in each region is shown in Table 2. After distributing a survey to all Islamic Studies teachers in Riyadh’s elementary schools, I received the specified number of survey responses and started to prepare the interview sample using stratified samples (Fowler, 2009). The Education offices affiliated with the General Administration of Education in Riyadh are divided into nine offices, and each office services a specific area in Riyadh: North, South, West, Central, Al Rawabi, Al Nahda, Al Haras, Al Badiyah, and Al Shafa.

Table 2: Number and Proportion for the Elementary Schools in Each Region

Education Office	Number of Elementary Schools	Proportion
Al Rawabi	73	16.2%
Al Nahda	66	14.6%
Al Badiyah	66	14.6%
The South	61	13.5%
The North	52	11.5%

Al Shafa	52	11.5%
The West	36	8%
The Central	29	6.4%
Al Haras	15	3.3%
Total	450	100%

I sought to have a teacher from each region in Riyadh, so that I could speak with teachers from various parts of the city. However, investigation using the Ministry of Education's website revealed no evidence that elementary schools in Riyadh differ in terms of integrating technology based on their geographical location. I know from my experience teaching in various Riyadh schools and supervising pre-service teachers, as well as having spent part of my youth in Riyadh and studying in its schools, that schools in the city's center, north, and west tend to have better resources. These characteristics may have an impact on the number of teachers who responded to the survey, who agreed to participate in the interviews, and on the teachers' experiences with the technology.

Participants

In determining the study sample, the appropriate method of the recent qualitative study was to work from the outer boundaries of a place into its heart (Miles & Huberman, 1994). The survey meant to capture data from all teachers of Islamic Studies in elementary schools in Riyadh, then to those who participated in the survey, then those who expressed their agreement to participate in the research interview, then the teachers who were randomly selected to be interviewed.

The study participants are in-service teachers in public elementary schools in the city of Riyadh. Other schools such as private schools, special education, adult education, and foreign education are excluded. Also, schools outside Riyadh city are excluded.

Survey

Concerning the survey approach, which is a method that is widely and regularly used in research (Billups, 2021), the study survey explores the characteristics of the participating teachers, the regions to which their schools belong, the percentage of those who use technology and those who do not, and the types of technology used (Appendix D). One of the advantages of using a survey is that it enables the researcher to get information on the population's views, understandings, opinions, interests, nations, and characteristics (deMarrais & Lapan, 2003). Another advantage is to obtain a large number of responses in less time and with less effort. Also, because the survey maintains the respondents' privacy, the results tend to be more honest and less biased (deMarrais & Lapan, 2003).

However, there are several drawbacks to using a survey, one of which is that there is an increased chance that respondents may misinterpret the meaning of the questions (Leavy, 2017). Or, the questions may be unclear to them, preventing them from providing an appropriate answer. To prevent such issues, I designed the questions in a clear, non-complex manner and avoided questions with two or more requests. Another issue that may arise with the usage of a survey is that many of the individuals who receive the application for participation do not complete it for a variety of reasons (Fowler, 2009). To

alleviate this issue, I wrote a brief introduction stating the aim of the questionnaire, the target group, and the time needed to complete the survey.

I asked the General Administration of Education in Riyadh city to provide me with a statistic of the number of female Islamic Studies teachers in elementary schools and school locations. The administration did not provide me with the e-mail addresses of the teachers, and instead suggested that they distribute the survey to the nine education offices. From there, the offices sent the survey to the school principals. In the first stage of circulating the survey, the responses were very few, so I needed to contact each education office affiliated with each of the nine areas of Riyadh to have them distribute the survey again. From the first stage, I received 28 responses, followed by 130 additional responses from the second stage, for a total of 158 responses. The study sample was not as large as I had planned for because it was challenging to deliver the electronic survey to the teachers in Saudi schools due to their poor email usage.

At the time of the survey, there were 3,425 teachers teaching Islamic Studies in Riyadh elementary schools (General Administration of Education, 2022), and of the 3,425 teachers, a total of 158 teachers completed the survey (4.61%). Of the 158 respondents, 33 teachers showed a willingness to participate in the interviews. I randomly chose nine teachers from the 33 Islamic Studies teachers based on three criteria met by the teachers: a) completed the study survey; b) schools' region; and c) signed the consent form. The nine teachers were selected after I used an Excel sheet to list all the education offices' names, with the teachers' names who were willing to participate under each office. After that, I randomly picked one teacher from each area. There was one teacher

who apologetically was unable to complete the interview, and I was unable to provide a substitute. I contacted two other teachers in the same area (Al Nahda), but no one was interested in joining. So, the final interview sample of the study was comprised of eight Islamic Studies teachers.

Interviews

Interviews are an effective way to become knowledgeable about a specific phenomenon (Creswell, 2013). At the interviews, I focused on the data that appeared in the survey, but in a more in-depth way. I also discussed the teachers' views towards the introduction of technology in their classrooms and the obstacles they face. After counting the number of teachers who wanted to participate in the interviews, I chose the teachers randomly from the obtained sample using stratified samples (Fowler, 2009). After that, I contacted them to set up an appropriate time for the interviews.

One of the strengths of qualitative studies is that they provide rich descriptions of a matter or phenomenon. Qualitative data is more comprehensive than just presenting numbers and has a strong impact on the reader. Also, data collection methods for qualitative studies are flexible in data collection duration, and this gives more confidence in understanding the phenomenon well (Miles & Huberman, 1994). Another strength for using a qualitative approach is that qualitative data can contribute to identifying new issues or examining prior hypotheses. This data can be strong if it gives logical explanations to quantitative data and if it is accompanied by competence in analysis and interpretation (Miles & Huberman, 1994).

In this study, I use semi-structured interviews containing an introduction that shows the title of the study and its purpose (Appendix E). Semi-structured interviews require the researcher to prepare the topics and questions that will be covered in advance, but the researcher can also change the wording of the questions and their sequence according to the course of the interview (Billups, 2021).

Before meeting the participants, I sent them a brief introduction about the research and the interview questions. After meeting each participant, I began with a welcome, and I then explained some points, namely, the my situation, as the researcher, the aim of the study, and how and why the sample was chosen. I conducted one interview with each teacher, each lasting around 60 minutes. The interviews were recorded through Zoom. The recording was done with the teachers' consent, and each recording started at the beginning of each interview and lasted until the participants left.

The interview questions addressed topics such as types of technology used and teachers' impressions of the use of technology in education. Through the sample answers, I listened for words and phrases such as *comfortable*, *belief*, *engagement*, *develop*, *increase learning*, *like to use*, *do not like to use*, *know how to use*, and *do not know how to use*. Also, I asked follow-up questions, such as, "Can you give me examples? Can you talk more about this point?"

However, I ensured that I was not guiding the interviews based on my experience in teaching; as Creswell (2013) advises, "to fully describe how participants view the phenomenon, researchers must bracket out, as much as possible, their own experiences"

(p. 81). Furthermore, I provided the participants with my phone number and email address to add any additional information after the interviews, if necessary.

I was aware that some participants may try to give socially desirable answers when doing interviews for such research. Therefore, I informed the interviewees that the research was neutral and not for or against technology in education. I was afraid that the answers would not represent reality and that the teachers would want to inform me that they had overcome digital illiteracy, believing that this is what I would like to hear from them.

Data Analysis

The primary goal of research data analysis is to discover the main concepts and areas of interest. The use of study tools is to access data that can be described, interpreted, and linked to each other to produce representative results (Miles & Huberman, 1994). I analyze the data collected to optimize its usefulness for answering the research questions. The data analysis depends on the conceptual framework, Technological Pedagogical Content Knowledge (Koehler & Mishra, 2009). I discuss teachers' knowledge of pedagogy and their knowledge of the uses of technology. Then I discuss their perspectives of integrating technology into Islamic Studies classes.

Survey Analyses

The electronic survey questions asked about the use of technology and teachers' views about technology. Also, I asked participants for factual information and subjective information, such as their opinions and attitudes. The answers were on Likert scale: Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree. The survey focused on the

use of technology in education and the teachers' perspectives about it. Questions were centered around whether teachers use technology or not and the kinds of technology they use. Also, questions focused on whether teachers believe in the importance of technology in education or not and the reasons behind using technology. Through this short survey, I gathered a general idea about the perspectives on the uses of technology by Islamic Studies teachers in Riyadh.

After collecting the electronic survey results, I analyzed the data using descriptive statistics. I used the arithmetic mean to convert data into numbers and graphs. The aim of analyzing the survey data was to get a broad sense of the research phenomenon among many teachers. In addition, I used general descriptive statistics on Islamic Studies teachers' use and perspectives of technology to contextualize the interview data and inform the interview questions. The survey data strongly supported my research results.

Interview Analyses

After receiving permission from the participants to record the interviews, I started the conversations. During the interviews, I took notes on a recording sheet to help with tracking and analyzing the responses. After each interview, I wrote a brief summary that includes general ideas and my thoughts. To analyze the interview data, I used an “essence meaning approach” (Billups, 2021, p. 85), and I listed all the significant codes and phrases into different themes. As Creswell (2013) explains, “the researcher then analyzes the data by reducing the information to significant statements or quotes and combines the statements into themes” (p. 81).

The analysis procedures were as follows (Creswell, 2016): First, I transcribed each conversation in its entirety. I read each transcript carefully, paying attention to the participant’s voice and perspective. I considered all parts of the conversation; I focused on the teachers' answers to the main and to the follow-up questions. I also paid attention to the examples they provided. Second, I classified the data into appropriate codes using MAXQDA, which is a qualitative data analysis program that supports Arabic data. I began with *a priori* coding based on the research questions and the study's conceptual framework. I used codes such as kinds of technology used, teachers' beliefs about technology, and the effectiveness of the technology. Third, I verified my analysis using member checks; I presented the data analysis to members of the sample. The participants agreed that the data interpretation accurately reflected their thoughts and experiences. Checking the respondent validation improved the accuracy, validity, and credibility of the data. Finally, I organized the data used in the research under specific themes. I then integrated quotations to support the ideas; the quotes were written in their original language, Arabic, then translated into English.

To summarize, Table 3 represents the study questions and their related topics, including participants, design, measure, and analysis method.

Table 3: Study Questions Explanatory Table

RQ	Participants	Design	Measure	Analysis
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What technology do female Islamic elementary school teachers use in their current practices?	Islamic Studies teachers in elementary public schools	Qualitative Design Essence Meaning Approach	Survey	Percentages Codes Themes Interpretations
What are the perspectives of female Islamic elementary school teachers on applying technology in Saudi Arabian elementary schools?	Islamic Studies teachers in elementary public schools	Qualitative Design Essence Meaning Approach	Semi-Structured Interviews	Codes Themes Interpretations

Ethical Considerations

There are ethical considerations that I need to refer to in this research. First, the privacy of the participants is taken into account by the following procedures. Before starting to collect data from the study sample, I informed participants at the start of the survey that collecting data is only for the research purposes. I notified the teachers who were willing to participate in the interview that their identifiable data will not be shared with the Ministry of Education, the sponsor of the public schools' teachers in Saudi Arabia. The survey does not ask for participants' names; however, one question does ask for the participant's information if they are interested in participating in the interview.

In terms of recording and storing research data, I substitute real names with pseudonyms and store the key list of pseudonyms matching with real names as well as

the interview recordings on my computer using secure programs. I know how important it is to keep identifiable data safe. I conducted the interviews through Zoom with my university account. Each Zoom meeting was password-protected to ensure the confidentiality of the discussions. For the teachers privacy protection, the interview questions were limited to the teachers' academic background, and there were no questions about their personal or social lives.

Second, participation in this study, whether through the distributed survey or the interviews, was completely voluntary. I made the voluntary nature of this study clear to the teachers of Islamic Studies through a written description at the beginning of the electronic survey. Also before starting any interview, I reminded the teachers orally that their participation is voluntary and that they could withdraw from participation at any time and for any reason.

Researcher Positionality

I have been a teacher at the Curriculum and Instruction department at King Saud University from 2009 until present. During the same period, I worked on preparing Islamic Studies teachers in Saudi education. Also, I have experience teaching Islamic Studies in a public school in Riyadh. The teaching experience I have and my belief in the importance of using technology in education might impact the research results in suggesting intensified teacher training on using technology or better teacher preparation in teacher preparation departments or similar. Therefore, I exclude my own experiences to better comprehend those of the participants.

Summary

In the first chapter of this study, I identify the problem of the study, the motives for conducting the research, and the study questions. In the second chapter, I discuss the conceptual framework of the research and how it frames the research topic. I also address several previous studies that relate to the current research from different aspects. Finally, the third chapter explains the research method and details the data collection tools and analysis.

The research sample is in Saudi Arabia, so I traveled there to complete the data collection after receiving approval for that. (Appendix F). The data was collected through Zoom, but being in Saudi Arabia allowed me to avoid the time difference between the United States and Saudi Arabia. I started with the survey then conducted interviews. The next chapters include my analysis and interpretation of the research results and provide suggestions, recommendations, and study limitations.

Chapter 4: Findings

This study looks at how female Islamic Studies instructors in Riyadh, Saudi Arabia feel about using technology in primary classrooms. Using the lens of Technological Pedagogical Content Knowledge (TPCK; Koehler & Mishra, 2009), I investigate Islamic Studies teachers' attitudes about using technology in the classroom. I also investigate the types of technology used and how they affect the instructors' teaching and learning processes. Mainly, I discover a variety of significant themes through an examination and investigation of the gathered quantitative and qualitative data. I analyze the quantitative data to uncover Islamic Studies elementary school teachers' background, teaching experience, and types of technology used in their classes. I analyze the qualitative data to determine the teachers' opinion on using technology in classes and how much importance they give to technology.

With the global knowledge explosion, educators strive to continuously improve instructional practices of seeking knowledge and achieving suitable teaching techniques for students. Studying how Islamic Studies teachers in Riyadh elementary schools utilize technology can help teachers have a greater understanding of the realities of educational technology.

Synopsis of Saudi education

The Saudi educational system was developed by the Saudi Ministry of Education policymakers, based on the government's Saudi Education Policy Document (Education Policy Document, 1970). Using standard education goals and curriculum, the education system applies to all areas and cities across the Kingdom. At the start of each school year, the Ministry issues and distributes textbooks to all public elementary, middle, and high schools. Elementary school is six years of learning, and girls and boys attend separate schools. Female teachers manage the schools for girls, and the male teachers manage the schools for boys. Recently, the Saudi Ministry of Education began integrating first, second, and third-grade boys and girls in girls' schools, taught by female teachers.

In addition, K-12 classes get Islamic Studies courses regularly, and elementary school students receive roughly two hours each day of Islamic Studies. The Holy Quran, Jurisprudence (Fiqh), Monotheism (Tawhid), and Hadith are the four courses taught in schools. For Islamic Studies, one instructor usually teaches the Quran, while another instructor teaches the rest of the Islamic Studies subjects, or one teacher may provide all of the subjects.

The Ministry of Education in Saudi Arabia collaborates with international agencies and centers in the field of creative transformation in educational technologies and the development of innovative teaching methods, in addition to preparing male and female teachers to use blended, electronic, and distance education systems. Therefore, all teachers in public schools in Saudi Arabia are subjected to continuous performance evaluation by the supervisors of the Ministry. During separate periods of the year, the

supervisors visit schools, attend classes, and evaluate the teaching performance of teachers, depending on specific themes set by the Ministry of Education (2022). Therefore, I asked the participants in the study survey if they integrate technology into their teaching because they believe in its importance or because they are asked to do so by their schools and the Ministry of Education. More than half of the participants in the study (102; 64.6%) see the necessity of utilizing technology and have been requested to include it in their teaching, while 56 (35.4%) teachers use technology because it is mandated by Ministry of Education supervisors.

Sampling Procedure

The study sample is scattered across all nine regions of Riyadh city. Female Islamic Studies teachers from different elementary schools participated in the survey and interviews, as illustrated in Table 3. The Riyadh educational regions that I include in the research survey are: North, South, West, Central, Al Rawabi, Al Nahda, Al Haras, Al Badiyah, and Al Shafa. In the survey, I asked the teachers to identify in which region their schools are located. Based on the latest statistics on the number of the Islamic Studies teachers, there are 3,425 teachers teaching in Riyadh elementary schools (Ministry of Education, 2022). Of the 3,425 Islamic Studies teachers, a total of 158 teachers completed the survey (4.61%) (see table 4). This is a small proportion, but Wu and colleagues (2022) consider this an acceptable sample size.

By recruiting teachers from each region of Riyadh city, I sought to gain an understanding of the participants' viewpoints on employing technology in classrooms across all locations. Overall, 115 of 158 surveyed teachers answered the question and

located their schools' regions. From the data, the largest number of responses is from the North region of Riyadh city (28 teachers; 17.7%). From the West region, there are 25 responses (15.8%), 15 teachers work in the Al Shafa region (9.4%), 13 teachers work in the Al Rawabi region (8.2%), and 10 teachers from the Al Badiyah region (6.3%). Furthermore, nine teachers work in the Central region (5.6%), seven teachers from the Al Nahda region (4.4%), four teachers from the South region (2.5%), and one teacher from Al Haras Region (0.6%). Finally, there are 43 teachers (27.2%) of the total responses who did not clarify to what educational office their schools belong.

Table 4:Elementary School Region for Islamic Studies Teachers Who Participate/Did Not Participate in the Study Survey

School Region	Number of Teachers	Proportion	Number of Teachers Participating	Proportion of Sample
The North Region	347	10.1%	28	17.7%
The West Region	242	7%	25	15.8%
Al Shafa Region	405	11.8%	15	9.4%
Al Rawabi Region	597	17.4%	13	8.2%
Al Badiyah Region	558	16.2%	10	6.3%
The Central Region	157	4.5%	9	5.6%
Al Nahda Region	548	16%	7	4.4%
The South Region	479	13.9%	4	2.5%
Al Haras Region	92	2.6%	1	0.6%

Unknown Region	0	0%	43	27.2%
Total	3425	100%	158	100%

Next, of the 158 Islamic teachers in the survey sample, 33 teachers were willing to participate in the study interviews (22.1%); 108 teachers indicated an unwillingness to participate in the interviews (72.5%). After determining who would like to participate in an interview, I selected nine Islamic teachers — one from each region of Riyadh — randomly for the research interviews. I completed eight interviews with eight Islamic teachers after the ninth teacher, from the Al Nahda region cancelled.

Participant Characteristics

The survey data indicates the age, educational background, and teaching experience of the Islamic elementary teachers, as shown in Table 5. The goal in providing such data is to give detailed information on the participants to clarify to whom the study findings relate and to make transparent the findings' generalizability and potential limits. Also, demographic information will assist those who conduct comparable, future studies.

Table 5: Demographics of the Study Sample by Age, Educational Background, and Teaching Experience

Category		Number of teachers	Percentage
Age	20- 30 years	14	8.9%
	31- 40 years	47	29.7%
	41- 50 years	74	46.8%

	51- 60 years	23	14.6%
Educational Background	High school	3	1.9%
	Educational Diploma	31	19.6%
	Bachelor	101	63.9%
	Masters	20	12.7%
	PhD	3	1.9%
Years of Experience	5 years or less	25	15.8%
	6- 10 years	25	15.8%
	11- 20 years	29	18.4%
	Over 20 years	79	50%

Note: Educational diploma is a certified educational program in Saudi Arabia, and it is a year and a half long. Graduates are qualified to practice teaching.

A teacher's age may have an impact on their belief in the importance of technology in education. Namely, technology use is often associated with younger people, who have grown up using electronic devices. As a result, significant differences in teachers' technology use may exist, based on their age. Therefore, the question about the age group was included in the survey. Given that the majority of individuals who report using technology (74; 46.8%) and (23; 14.6%) are 41-50 and 51-60 years old, respectively, this age is deemed high in relation to the age of technology development and inclusion in education.

Educational background may also influence the instructors' opinions toward the use of educational technology. Teachers of Islamic Studies graduate from different colleges

and universities, giving them broad educational and teaching backgrounds. The data represents educational background in the study survey and shows that 3 (1.9%) teachers have high school diplomas, 31 (19.6%) have an educational diploma, 101 (63.9%) have bachelor's degrees, 20 (12.7%) have master's degrees, and 3 (1.9%) have Ph.Ds.

Currently, to work as a teacher in Saudi Arabia's public schools, candidates must be Saudi, meet professional teaching requirements, and have at least a bachelor's degree. Teachers whose educational background are high school or an educational diploma obtained their teaching positions many years ago, before bachelor's degrees were required.

In this study, I refer to the teachers' educational experience to help determine the participants' understandings of teaching principles, academic content, student characteristics, and the context of the learning environments, which are included in Pedagogical Content Knowledge (PCK). In fact, the survey results show the teachers' years of experience: half of the study sample (n=79; 50%) have a long teaching experience, over 20 years. Other participants were divided into three sections: 29 (18.4%) teachers have between 11–20 years of teaching experience, 25 (15.8%) have between 6–10 years, and 25 (15.8%) have five years or less. Because teaching is one of the oldest female vocations in Saudi Arabia, most instructors have extensive expertise in their area.

Interview Sample

A question at the end of the survey asks about teachers' willingness to participate in an interview. Each teacher who wanted to participate needed to complete a consent form. There are 33 Islamic teachers who showed their willingness to participate in the research

interviews (22.1%). I selected eight teachers randomly from the 33 Islamic teachers, based on three criteria: a) completed the study survey; b) determined by schools' region; and c) signed the consent form. Table 6 shows the particular features of interviewees; note that the names are pseudonyms.

Table 6: Background Information about Interviewees

No.	Teacher Name	Educational Degree	Teaching Experience	School Region
1	Tamadur	Bachelor	21 years	North Region
2	Aishah	Bachelor	19 years	South Region
3	Norah	Bachelor	8 years	West Region
4	Dunia	Bachelor	12 years	Central Region
5	Hsnaa	Bachelor	28 years	Al Rawabi Region
6	-----			Al Nahda Region
7	Fuloah	Bachelor	26 years	Al Haras Region
8	Budor	Bachelor	27 years	Al Badiyah Region
9	Maram	Bachelor	10 years	Al Shafa Region

Note. The teacher from Al Nahda cancelled at the last minute. I contacted two additional teachers from the same region, but no one was prepared to join.

Findings

I investigate two research questions to better understand the study participants' perspectives on the usage of technology in their classes:

1. What technology do female Islamic Studies elementary school teachers use in their current practices?
2. What are the perspectives of female Islamic Studies elementary school teachers on applying technology in Saudi Arabian elementary schools?

The first question concerns the types of technology used by elementary school Islamic Studies educators. The second question focuses on instructors' attitudes toward using technology and how it affects their teaching processes. I purposefully choose the generic term, “technology,” for the study questions to observe instructors’ interpretation of the term. The survey findings reveal that teachers identify more than one type of technology, giving a sense that different teachers define the term in a range of ways.

Research Question 1: What technology do female Islamic Studies elementary school teachers use in their current practices?

Through this question, I sought to know the types of technology that Islamic Studies teachers use and how often they use it in their educational practices. My goal was to have a clear picture of the participating teachers’ perspectives of the use of technology in education. Specifically, I sought to answer: do teachers diversify the types of technology they use in teaching, and do they have robust knowledge of all the technology that they can use in the classroom? All of these questions were addressed in the study survey and the interviews.

Schools in Saudi Arabia are equipped with different types of technology, such as digital projectors, smart boards, and resource rooms (Ministry of Education, 2023). However, some schools do not have all of this technology, so teachers need to provide it.

Khoj (2021) argues that the lack of electronic infrastructure in schools is a major factor in the low level of technology that Islamic Studies teachers use. The first study question determines the types of technology Islamic Studies teachers use in their classes and if such technology is available in the schools where the research sample works.

Types of Technology Used

Most participants have a positive attitude toward introducing technology in the classroom, which is consistent with previous findings (Isman et al., 2012; Alsuhaymi & Alzebidi, 2019). Also, they tend to incorporate various types of technology in their lessons, with differences in the most and least used types. To analyze the data, I divide the technology mentioned by the study sample into hardware and software.

Hardware Technology

The study survey included an open question about the types of technology used in Islamic Studies classes. I categorized the types, then calculated the numbers and percentages, as in Table 7.

Table 7: Hardware Technology Islamic Studies Teachers Use in their Current Practices

Technology Tool	Number of Teachers	Percentage
Digital Projector	98	62.03%
Computer	44	27.85%
Mobile Phone	25	15.82%
Smart Board	16	10.13%
iPad	10	6.33%

Teachers report using digital projectors, computers, iPads, mobile phones, and smart boards. The percentages of use vary, with 98 teachers using digital projectors (62.03%). The high use of digital projectors may suggest that teachers rely on teacher-centered teaching methods as opposed to other student-centered devices. As evidenced by survey findings and conversations, teachers most commonly use digital projectors as technology in their classrooms. This agrees with the results of Alshyti's (2017) study, which is that teachers may use different types of technology, but they often feel comfortable using only one or two types of technology.

Digital Projectors

In the survey, most teachers reported using digital projectors. Indeed, all of the interviewed teachers described using the digital projector for the purpose of displaying content. For instance, a number of interviewees explained that they use the projector to display the content of students' books. Instead of each student opening their own book to view the content, the teacher presents the content of the book through the projector to the whole class. Moreover, teachers noted using the projector with summaries of lessons on PowerPoint or displaying video clips to illustrate an idea or clarify a point. In a few cases, the teachers indicated that they use the projector to display a game at the end of a lesson for the purpose of evaluating the students' learning, such as the Kahoot game.

Fuloah, one of the Islamic Studies teachers, shared:

The projector has served us in all fields, through which we can present lessons, work papers, pictures, verses of the Holy Quran, and hadiths of the Messenger Mohammad, may God bless him and grant him peace. Instead of writing the lesson on the board or

asking the students to open their books, I can use the projector. If the students open the books, they get distracted from what the teacher is saying. I prefer the students to hear from me first then open the books later. Also, sometimes I ask the students to search for certain information in the search engines on my computer which is connected with the projector, and then everyone can see the results of the search.

Aishah, with 10 years teaching experience, brought up the following point:

For me, the use of technology is beautiful, but the problem is the large number of students in the class and the slow Internet in the school. I find that using PowerPoint to present the lesson through the projector is easy and appropriate. It does not cost the teacher whether to press a button, and the presentation is in front of the students clear and interesting. Using a projector saves your time and effort because it replaces writing the book content on the board. But it is important for the teacher to ensure the clarity of the presentation in terms of writing, colors, and sounds.

The interview results show that teachers use specific types of technology frequently, with a lack of diversity, such as mostly relying on the projector to display content. This could affect the fulfillment of different learners' needs, as students differ in the way they learn using their senses. According to Asiri and Waza (2011), students in elementary school achieve good learning through experience and participation in the education process. Teachers should use technology to create an atmosphere of interaction in the educational process, rather than just presenting data, as this can lead to a lack of understanding and engagement among students. Therefore, digital projectors are not enough to provide students with the opportunity to participate in learning.

iPads

Less frequently, teachers reported using more interactive technology, such as smart boards and iPads. Ten teachers in the survey — and two interviewed teacher — use smart boards and iPads. They mentioned using the iPad for assignments or to assist students with reading and memorizing. The iPad allows students to share the responsibility of learning, which is especially important given that 21st-century kids are already familiar with the language of technology outside of school.

Tamadur, an instructor with 21 years of teaching experience who integrates iPads in teaching and learning, described her iPad use:

I ask the students to use the iPad with listening to the reader of the Holy Quran. Then I ask each student to record her own recitation voice. After that, each student listens to her recording and tries to compare her reading with what is written in the Holy Quran and try to point out the differences. This way of reciting the Quran helps a lot in pronouncing the words correctly and memorizing the Quran's verses. More important, the student can focus on the learning process in a way that meets her needs.

This teacher gives her students the opportunity to be self-directed and considers individual differences, which may not be available when educating in traditional ways. I see parallels between this conclusion and that of Steeg and colleagues (2013), who show that using iPads enables students to engage in learning in an environment that adapts to

their individual needs. It also fosters an eager and cooperative environment for students to educate one another.

Software Technology

As indicated in Table 8, the most common type of software that teachers utilize (11.39%) is educational applications. Some examples of educational applications used by teachers are the school Quran application, Forms, Kahoot, and Canva. On occasion, a small percentage of instructors use YouTube, electronic and simulation games, and social media. There is a significant decrease in the use of software by the study sample. This may be due, as indicated by Alharbi's study (2012), to the growing necessity for teachers to be educated in the use of educational technology.

Table 8: Software Technology Islamic Studies Elementary School Teachers Use in Their Current Practices

Technology Tool	Number of Teachers	Percentage
Educational Applications	18	11.39%
YouTube	9	5.7%
Electronic Games	8	5.06%
Social Media	3	1.9%
Simulation Games	2	1.27%

To summarize, teachers should consider the content of the subject, as well as the needs of the students and the educational environment when selecting a technology to integrate into the lesson. Some teachers reported the use of technology to enhance students learning or to help students achieve self-learning. In addition, some Islamic

Studies teachers believe that projecting material on a screen is a useful pedagogical method. However, simply presenting information using technology is not enough because it is similar to presenting information from a book. Teachers should center their classroom around students' needs and then consider how to best incorporate technology to enhance students' learning.

Research Question 2: What are the perspectives of female Islamic Studies elementary school teachers on applying technology in Saudi Arabian elementary schools?

The second research question asks teachers how they feel about using technology in the classroom. Specifically, this question gauges the advantages and disadvantages of using educational technology, the challenges teachers face, and the opportunities presented by incorporating technology into education. To analyze the interviewees' answers, I code the data into five categories: technology tools, teaching experience, teacher's point of view, availability of appropriate technology, and learners' interactions. Based on the Technological Pedagogical Content Knowledge framework (Koehler & Mishra, 2009), I insert the codes under the following themes: Technology Content Knowledge (TCK), Technological Knowledge (TK), and Technological Pedagogical Content Knowledge (TPCK).

First: Technology Content Knowledge (TCK)

This section focuses on understanding the reciprocal link between technology and Islamic Studies content. Also, I consider how technology might be used in various situations. Following that, I discuss the themes from the data.

Difficulty Finding Digital Religious Educational Content. The school curriculum in Islamic Studies books in Saudi Arabia are taken from the Holy Quran and the Sunnah of the Prophet Mohammad peace be upon him. These Islamic curricula are considered sacred by the members of Saudi society, including parents, teachers, and students. During the research interview, teachers expressed that they face challenges when searching for digital content appropriate to the curriculum. The difficulty mostly lies when searching for a short video, picture, quizzes, or games. For example, if teachers want to incorporate videos in their courses, they must search the Internet and study the options until they find material relevant to the lessons they will deliver. In general, when teachers seek to use software technology, the process of researching and then finding digital content that fits the lessons is not easy.

In addition, teachers explained that there are statements on the Internet that are attributed to Islam, but at the same time, they are from unidentified sources. Instructors indicated that they use the critical research skills they learned at university to revise online content. For instance, there are a number of sources that seem to talk about the specific teachings of Islam, but they are from unknown sources, which does not give teachers confidence to use them. In this situation, instructors refuse to utilize what they have found because they believe it is their responsibility to transfer the right knowledge to students. As an example, Hasnaa briefly shared her perspective:

Some Islamic Studies teachers use unreliable technology. I saw one of the teachers with me at the same school, using a movie as a technology tool to explain the story of Prophet Yusuf peace be upon him. I have already seen this film and found that it

contains information from an unknown source, and we cannot fully rely on it to introduce new information to students. This teacher used the source to present the whole story of the prophet. Teachers are supposed to use the textbook and well-known books of interpretation of the Quran in this situation, since the story of the prophet exists in the Quran. Such a knowledge will continue with students throughout their lives, so we must make sure that all our references are reliable and correct.

Also, teachers find digital content that contradicts, in part, the objectives of Islamic education. For instance, when downloading some content from the Internet, they find contrary information to what is in the textbook. Here a problem arises, and teachers begin to limit their use of technology because it conflicts with the objectives of Islamic Studies.

Offering another perspective, Tamadur expressed her view:

I think Islamic Studies teachers do not easily find technical content for Islamic Studies classes. Teachers who teach other subjects are more willing to find contents that help them in teaching more than we do. As for my personal experience, I find it difficult to find ready-made content for Islamic Studies lessons on the Internet. For example, when searching for short quizzes for students' evaluation, I need to review these questions well. Because sometimes I found several questions that include beliefs that contradict what is stated in Islam. Also, at other times, I find short videos that contain a recitation of the Quran that is not perfect.

Furthermore, teachers face difficulty in finding ready and appropriate technical content. The Ministry of Education's efforts to provide relevant technical material are still in their early stages. The focus on providing digital content, by launching an Ien channel,

officially started after the military operations of the Arab coalition against the Houthis. The Ien is a channel and application that provides educational alternatives and provides distance education and digital content to those who need it (Ministry of Education 2023). The ministry wants to provide online lessons for students residing in the southern region of the country instead of having students go to schools with unsafe conditions. Since the beginning of the war, this channel provides electronic textbooks, examples of various working papers, examples of assessments, explanations, short movies, and other resources.

Reliance on the channel has increased, especially during the COVID-19 pandemic. The digital content in Ien is significant, but the majority of it is dedicated to science, mathematics, Arabic language, and social studies, with a minor portion allocated to Islamic Studies classes.

Finally, all the teachers agreed that they are exposed to multiple situations when planning to use digital resources as a technology tool. Some of the teachers complained that it is difficult for them to find trusted sources that can provide them with videos, pictures, quizzes, and games that are appropriate for their curriculum. With this lack of resources, Islamic Studies teachers take three approaches:

- 1- Teachers use the existing digital content they find on the internet with or without editing, so they end up using technology that sometimes contradicts what the curriculum contains.
- 2- Teachers reduce the use of technology tools due to the lack of appropriate availability.

3- Teachers repeat two or three technology tools throughout the school year, to avoid any effort to modify digital content.

Overall, two of the sample teachers modify ready-made digital content before presenting it to the students, while three prefer not to integrate technology if they do not find appropriate tools. These results are compatible with Asiri and Wazas's (2011) study that some Saudi curricula need digital content support to assist teachers in the teaching process.

On the other hand, the teachers show a good understanding of educational technology and seem to be able to choose the most appropriate technology for the content of Islamic Studies in the Saudi curriculum. This shows that they are aware of the technology content knowledge.

Difference in the Use of Technology According to the Subject. Some interviewees explained that it is more difficult to integrate technology while teaching Islamic Studies courses than when teaching other subjects. In certain cases, Islamic Studies teachers believe that it is hard to introduce technology tools. Fuloah stated:

I don't benefit much from technology in Islamic Studies lessons. It is hard to find appropriate technological means. There are some lessons we can use technology with and others we cannot. For example, I can use a video that helps contemplate God's creatures, such as meditation on the seas. Some advisors from the Ministry of Education direct us not to use inappropriate aids for the religious content, especially when teaching Monotheism (Tawhid). Unlike when teaching Jurisprudence (Fiqh), teachers can have more opportunities with using technology tools.

Fuloah and two other teachers note that even among the different subjects of Islamic Studies, there are lessons in which it is possible to use technology and lessons in which it is difficult to do so. For example, teachers think that using technology in Tawhid lessons is more difficult than using technology in Fiqh lessons. They justify this by the fact that the subject of Tawhid contains the doctrine of the belief in God, His angels, His books, His messengers, the last day of judgment, and destiny, all of which are difficult to represent with images or tangible things.

In fact, this result is identical to the study of Almueajal (2001), which touches on the reasons for teachers' reluctance to use educational aids and technology when teaching the subject of Tawhid. This indicates that Islamic Studies teachers' reluctance to integrate technology is not new but rather an extended problem of the current era. Almueajal interprets this as a misconception—prevailing among teachers of Islamic Studies in general, and teachers of monotheism in particular—of understanding the link between technology and Islamic Studies content.

Also, in the same study by Almueajal (2001), teachers believe that teaching the rest of the subjects of Islamic Studies is more enjoyable and manageable than teaching the subject of Tawhid. He comments on this by saying that the subjects of Islamic Studies are related to the reality of the student, which makes them easier to explain than the subject of monotheism, which contains more abstract topics. For example, Fiqh's subjects are based on clarifying the method of worship, such as ablution, tayammum, prayer, and pilgrimage, all lessons that allow the use of multiple types of technology without confusion.

In addition, when teachers feel it is difficult to diversify the teaching methods and the means used, they return to the traditional method (lecture). Almueajal (2002) finds that teachers of the Tawhid subject are less satisfied with their performance due to their beliefs that they do not teach the subject well. This leads to some interviewees returning to traditional teaching when it is not possible to integrate technology with the content.

Second: Technological Knowledge (TK)

Teachers use instructional technology and software to develop, implement, and assess instruction. In this section, I discuss the obstacles teachers of Islamic Studies face when applying technology to the teaching and learning process, and the results are as follows:

The Start of Using Technology. With relation to when teachers of Islamic Studies began integrating technology in their classrooms, the majority of teachers who participated in the survey said that they began using technology in their teaching prior to the COVID-19 pandemic (70.2%). In contrast, 39 Islamic teachers just started using technology in their teaching, after the COVID-19 pandemic (24.7%), and eight teachers did not give an answer (5.1%). There is a clear increase in the number of teachers who introduced technology into their educational practices after the pandemic. This concurs with Adipat's (2021) study, in which she mentions that following the COVID-19 pandemic, technology incorporation is rising in education.

Teachers' Feeling on employing technology. Of the total respondents to the survey, 151 (95.5%) of the teachers who integrate technology into teaching feel comfortable and confident using it, and (7; 4.4%) teachers feel neutral or unconfident with using technology in teaching. According to Almqateef's (2017) study, Islamic

Studies instructors want to utilize technology in schools to a considerable level, and the reason for this is that teachers are conscious of their responsibilities to achieve educational goals in general and the aims of employing technology in particular. This high sense of comfort in using technology may not necessarily mean feeling confident in dealing with multiple types of technology or being able to include it in different circumstances. For this reason, it was appropriate to conduct interviews with the study sample to give the teachers an opportunity to express their perspective in more depth.

Lack of Technical Skills. From the answers to the survey and from the interviews, the most used technological tool by teachers is the projector, with 62.03% of the answers. The teachers spoke about the reasons why they prefer certain types of technology. Teachers use technology they are familiar with and know how to use. Most of the teachers in Riyadh — including Islamic Studies teachers — receive training workshops on the uses of PowerPoint and digital projectors. This general training was conducted while the Ministry of Education integrated digital projectors into a large number of Riyadh's schools. Such largescale integration of projectors in classrooms required teachers at that time to attend workshops on how to use digital projectors in education, and putting this device in most schools directly contributed to raising teachers' use of this educational technology.

In contrast, few teachers receive training on using the interactive whiteboard, although this board is now in some schools. This lack of training contributes to the lack of teachers' use of this technological method. Across eight interviews, two Islamic Studies teachers describe using interactive whiteboards in their classes. The survey

results show that only 10.13% of participants use the interactive whiteboard. Teachers often depend on workshops established by the Ministry of Education on technology use.

Through the interviews with the sample, I find that teachers need technical qualifications to integrate technology into their teaching. Norah contended the following:

When I first started teaching, I was not using any technology. After a couple of years, I started using PowerPoint and the projector. We have a projector in class, and teachers received training on it. Nonetheless, I want to refer to an important point: I postponed the use of the whiteboard because I was not able to receive training for it. My school was going to send me to a workshop on how to use the interactive whiteboard, but that didn't happen, and I don't know why! So right now, I am continuing to use the technology I know until the workshop is set again.

Not all teachers are trained to use technology in the teaching and learning process. With the present digital acceleration of teaching and learning, instructors face a shortage of technical expertise for successful technology integration. This finding is compatible with the conclusions of Isman et al. (2012) and Almqateef's (2017) investigations, which find that certain Saudi teachers encounter challenges in dealing with current technological tools, owing to a lack of pre-qualification and which requires urgent and advanced development.

Another reason for teachers lack of technical skills and knowledge is that they continue using the technology they used in college or used at the beginning of their teaching careers. Not all Islamic Studies teachers have professional development

experiences. Some of the participants are limited to types of technology for all their years of teaching service. Fuloah provided the following comments:

At the beginning of my teaching 26 years ago, I was in a school that had technology equipment before all schools in its time. For example, they had an overhead projector that we used to display the Holy Quran and hadiths. In addition, we had a circular device (I forgot its name) with tiny pictures to show to students, an instrument I had never seen before. After several years, when I moved to another school, I used the projector we know, and I still use it. In addition, in my class, I have an interactive whiteboard, but I never used it.

Professional development opportunities are not available to all Islamic Studies teachers. This might be due to the restricted number of workshops available in the field, the high number of class sessions each week for instructors, lack of material, or incentives.

Lack of Technical Equipment in Schools. In addition, the teachers explained that they determine the types of technology to use according to what is available in the classroom or school. This means that teachers are mostly restricted to using what is available in the schools at which they teach. For example, the vast majority of the interview sample argue that the Internet is not always available in schools, or the available Internet does not cover the use of all classrooms due to the weak network. In this situation, teachers end up not using

the Internet, or in the best case scenario, provide internet connection from their phones. Aishah made this statement:

The technology I use in my lessons is what is provided at school. For example, every classroom in my school has a projector; we can display the task and some activities previously saved on flash memory. But, if the lesson I want to give is held on my laptop, I need to bring my computer to school.

Also, if I want to use the Internet for searching or viewing videos, most of the time, I need to have my Internet. The school has access to the Internet, but it has become so slow with many teachers using it.

Also, Maram mentioned the following:

I often use the projector and do not need to bring anything from home. In my school, there is a projector in every classroom. There is also a computer for the teacher's use. But if I want to use the smart board, I need to move the students to the resources room in the school, which is equipped with some technology tools that are not in the classroom. However, the resources room is not always available.

Not all schools have the essential tools and equipment. Therefore, teachers face difficulty integrating technology into the teaching process.

Unreliable Access to Technology. The teachers also clarified that there are times they prefer to use the technology and times they prefer not to rely on it. Some teachers avoid using technology daily because of the problems that may arise with using technology, especially if there are no technical specialists in schools who teachers can

request for help. If teachers experience malfunctions while using technology, they have two choices: either complete the lesson using traditional learning methods or repair what went wrong without assistance, which will cost class time. Teachers are keen to make use of every minute of class time, leading many teachers to believe that technological challenges can spoil lessons and hinder students' learning. Some teachers can develop alternative plans in case of technical problems, while others prefer not to risk using technology and continue using traditional teaching methods.

Third: Technological Pedagogical Content Knowledge (TPCK)

Several educational institutions across the world strive to increase teachers' effectiveness in using technology-based teaching approaches. TPCK focuses on the knowledge that instructors should have to use technology effectively. I use this factor to evaluate the study data, and the following emerge:

The Influence of Teachers' Beliefs About Technology on Their Use of It.

Teachers in Saudi Arabia graduate from different institutes, colleges, and universities for teachers' preparation. Each of these teachers forms, directly or indirectly, certain beliefs about teaching in general and using technology in particular. In addition, there are educational beliefs that were formed when these teachers were students and at different stages of their lives.

Additionally, teachers use technology in their classrooms in different ways depending on their educational beliefs. These beliefs are the most influential in formulating their perspectives on the use of technology in classrooms, as each teacher has their own beliefs about technology integration practices. Teachers decide which tools to use and how to

apply them mostly depending on their understandings (Dickey, 2010; Asiri & Waza, 2011; Kim et al., 2013; Prestridge, 2017; Alharbi's, 2019; Alsuhaymi & Alzebidi, 2019).

The following quotations are examples of what Islamic Studies teachers perceive about technology: "technology does not serve me much in Islamic Studies subjects" (Dunia), "Islamic Studies are easy to explain and do not need the use of technology" (Nurah), "because of the great reliance on technology after the COVID-19 pandemic, students began to use it in unpleasant ways" (Tamadur) and "technology has replaced reading and writing by using pencil and paper, and this has affected students' dictation and calligraphy" (Dunia).

Because teachers' thoughts influence how they integrate technology into education, Adipat (2021) suggests that instructors must be digitally competent in order to comprehend information and communication technologies and adapt them to their teaching processes.

Belief that You Cannot Represent Content by Cartoons (Moving Pictures).

There is a disagreement in Saudi Arabia regarding the ruling on using pictures in education, and the basis of this disagreement is religious. People are divided into groups that believe it is possible to deal with pictures, and groups that believe that pictures are forbidden.

From the interview data, two teachers hesitate to use technological tools that contain pictures of living creatures (human and animal). They believe that it is not appropriate to represent Islamic Studies content in pictures. Dunia states the following:

I do not use images of humans or animals in my teaching because it will lead to a contradiction between the information I provide and what I am doing. I teach students that these pictures are forbidden, so I don't like to use them. Instead, I can find ready-made presentations and clips of religious fatwas on YouTube, run competitions using some applications, and use the Ministry of Education's Madrasati platform.

Additionally, Fuloah shared the following comment:

When technology is used as a means of presenting information, there is no objection to it. It serves me well if I use it as a display tool. But when using it as a way to deliver information, I will be very careful. I have to make sure whether this technology is suitable for religious material or not. Not all teaching aids can be used in classes; there are religious prohibitions on some of the technology, such as moving pictures (cartoons). Also, I am not comfortable with the use of dolls in teaching. I saw Islamic Studies teachers using them, and I alerted them because religion has its sanctity.

Briefly, two of the eight Islamic Studies instructors avoid using moving images or puppets in their teaching and learning, unlike the other teachers, who have no hesitation about doing so. The reason may be that some teachers of Islamic Studies believe that they are role models for their students, so they are more careful in what they say and do (Rida, 1989). Therefore, it is critical to give the right technological tools in accordance with the Saudi curriculum's aims and content while also taking teachers' beliefs into account.

Opportunities to Enhance the Use of Technology in Islamic Studies

Curriculum. The result of this study indicates that teachers of Islamic Studies increased

their use of technology during the period of distance education. This increase in the level of technology in education allowed them to get acquainted with new technological means that they had not used before, such as Madrasti, the distance education platform. Madrasti is an online education platform that includes hundreds of virtual classrooms for all school grades. This supports Hariri's study (2021), which indicates the radical change taking place in the use of technology in education in the world, in general, and in Saudi Arabia, in particular, which in turn affects teachers and students. Budor offered this perspective:

I find that using technology had helped me a lot. I would say it had served me in teaching up to 70%. I started to expand technology use when schools transformed to distance learning during the Covid-19 pandemic. I also have learned about many programs that can be used in teaching and learning. But after the education became in person, my use of technology decreased and my focus became on using PowerPoint presentations and concept maps. But in general, the introduction of technology in lessons attracts students' attention and improves their educational performance.

The use of technology during Covid-19 pandemic has become compulsory in Saudi schools. From March 9, 2020, through January 23, 2022, schools switched to completely online education, and all students attended their lessons through digital educational platforms. In addition, instructional materials — including assignments, projects, and tests — were created, given to teachers, and evaluated using technology. The communication between students and teachers was through technological devices until the schools were in person again.

Finally, schools must not turn a blind eye to technological tools at a time when technology is rapidly spreading in many nations. The Saudi Ministry of Education places high value on incorporating technology into education. The Ministry of Education pushes instructors to use technology into their courses and offers training sessions to eradicate technological illiteracy.

Summary

This chapter focuses on the data analysis and outlines the study's findings. This qualitative research demonstrates Islamic Studies instructors' viewpoints on the usage of technology in classroom settings. I discussed two research questions and came to the following results:

Teachers, in general, showed an interest in technology and its applications, and the figures used in the current study indicated a high number of teachers who include technology in classrooms. As a result, there is a renewed demand for increased assistance for teachers in developing technical skills and providing schools with the required resources. Also, teachers had shown the ability to choose the appropriate technology for the educational content. However, this chosen technology primarily focuses on the teacher as the center of the educational process rather than the student, and this upsets the required balance in student learning.

The results showed that there are some obstacles that teachers face when using technology in Islamic studies classes. For instance, there is a shortage of technology that suits Saudi curriculum content that teachers can use in teaching Islamic Studies; the Ministry's efforts are modest in this field, especially with the curricula of Islamic Studies.

Ultimately, teachers attempted to integrate technology differently in their classrooms based on their own beliefs formed through various experiences. Some Islamic studies teachers still think it is challenging to employ technology for particular Islamic subjects or lessons. This belief has been common for a long time, and it still continues. From the lens of the theoretical framework, instructors must receive education in techniques of teaching Islamic studies in particular because each Islamic subject has its own method of teaching, and this will help teachers a lot.

Chapter 5: Discussion

Introduction

This final chapter focuses on presenting a summary of the results of the research in light of the theoretical framework and previous literature. The current qualitative study displays the perspectives of Islamic Studies educators who use technology in their educational settings. Educators' opinions of how they use technology are important and will continue to be important in guiding and directing future technological initiatives (Nicholson, 2018). The participants responded to 11 interview questions about their views on technology integration in their classrooms. The Technological Pedagogical Content Knowledge (TPCK) is the framework used in this study to represent the successful integration of technology into the teaching and learning process (Adipat, 2021). Several pieces of literature discuss the use of technology in education and the teachers' perceptions regarding various aspects that serve the current research. The study applies to eight elementary schools that are located in different areas of Riyadh city. Finally, chapter five ends with the implications of the research, recommendations, and a brief discussion of future research.

Implications for the Literature

The previous literature demonstrates how teachers care about teaching and are committed to great educational outcomes. While technology can effectively scaffold learning, early research demonstrates that classroom teachers' skills and knowledge are

largely responsible for the impact of technology on learning. Previous studies used in this research focus on literature that examines multiple types of technology and which discusses teachers' perspectives on integrating technology into the teaching and learning process. Most findings of this study are in line with those of previous investigations into educational technology.

The study findings are consistent with those of previous studies on teachers' attitudes toward technology use. For example, Alnajem's (2016) work indicates that because of the growing importance of digital technology in the educational settings, teachers of Islamic Studies need to be able to use and activate this technology in their classrooms. According to the findings, some participants in this study display active work to improve their technology skills and look to use technology to engage their students in a functional way that produces a change in the learning process. Also, this result is supported by previous studies, such as Almajed and Alsaif (2020) and Almqateef (2017). The current study shows that most teachers want to use technology in teaching. Finally, the current study is an addition to the existing literature, as it confirms the findings of previous studies in similar fields.

Implications for the Teachers

In both daily life and in the teaching and learning process, technology is gaining significance. In terms of developing education, technology usage is frequently regarded as a tool for ensuring the effectiveness of the educational process and for its potential to be an effective instrument for enhancing procedures in educational establishments (Aidarbekova et al., 2021). However, the mere availability of technology tools is not

sufficient to achieve teaching effectiveness. Rather, integrating technology effectively requires teachers who can plan and appropriately include technology in the lessons (Asiri & Waza, 2011).

The implications of this study encourage teachers of Islamic Studies to pay attention when integrating technology into education for the management of educational processes, attention to students' needs, and organization of the class environments. Since Pedagogical Content Knowledge (PCK) is the teacher's knowledge of their students, ability to employ fundamental pedagogical approaches, and mastery of content knowledge in the teaching-learning process (Shulman, 1986), teachers in my study had a significant understanding of the Islamic curriculum content, but many lack a good grounding in technological pedagogical content because they have been focusing on technology that supports teacher-centered teaching strategies, not student-centered learning.

Through the interviews conducted with teachers of Islamic Studies in this study, it became apparent that when applying technical tools, teachers deal with the students uniformly without elaborating on the needs or interests of each student. In addition, the current study monitors a result that illustrates the specific use of technology by teachers of Islamic Studies. The reliance is high on tools such as projectors and PowerPoint, and they are used frequently in most Islamic Studies classes. Most teachers have introduced technology into their teaching to shorten the time and save effort in presenting a quantity of data. This makes the integration of technology not as valuable as required. In addition,

some students “become bored” - in the words of one of the teachers - from the regularly used technology, and those students have decreased engagement and learning.

I use the Technological Pedagogical Content Knowledge (TPCK) framework to highlight the teachers' understanding of four main elements: content, pedagogy, technology, and the learning environment (Koehler & Mishra, 2009). The association between learning and technology in this study is dependent on how these components are integrated into the teaching Islamic context; teachers need to plan, implement, and communicate educational materials in a way that fits the goals of Saudi education. The TPCK model contributes to achieving pedagogical goals and balances the four elements of the teaching and learning process, which makes learners more active during the lessons and leads to greater engagement in their classes. Also, applying the TPCK as the conceptual framework for this study serves as a directory for educators who want to understand the conditions of integrating technology with Islamic Studies lessons in Riyadh elementary schools.

Implications for the Curriculum Developer

Another significant implication of this study's findings is that it concludes that there is a shortage of suitable digital content for the curricula of Islamic Studies, which leads to the reluctance of some teachers to integrate technology and education. This reveals the need for curriculum developers at the Ministry of Education in Saudi Arabia to work with the General Commission for Audiovisual Media to help provide educational digital contents that are appropriate to the objectives of the Saudi curriculum. It is also helpful to

urge teachers who are distinguished in creating digital content to enrich the digital curricula and help their colleagues who are less experienced with technology.

The results of the second research question show that teachers frequently want to employ technology in teaching and learning, but they often struggle due to limited or non-existent technical resources. For example, if teachers rely on the Internet to search for religious information, there is potential for exposure to several unknown sources and inaccurate information. Not all teachers are aware of digital knowledge resources or are able to revise what they find on the Internet before using it. Additionally, databases in the Saudi educational applications are primitive and need to be enriched. As a result, there is an urgent need to provide electronic content that is suitable for religious content and matches the standards of the Saudi curriculum.

Furthermore, the introduction of technology needs to be controlled in a way that takes into account the sanctity of religious texts and serves students by enhancing their understandings and preserving the identity of Islamic education. As recommended by the previous studies (Asiri & Waza, 2011; Almufda, 2020; Aljabir, 2021), the current study also recommends that digital scientific materials be provided that are commensurate with the Islamic Studies courses to facilitate the teachers' use of technology in their lessons.

Finally, parts of the Islamic Studies curriculum focus on spiritual knowledge, which could create difficulty in the way of introducing technology. To handle this case, curriculum designers should offer suggestions in the teacher's books on how to introduce technology in the lessons.

Implications for the Ministry of Education

The Ministry of Education regarding seeks high-quality education for all students, necessitating technological development in Saudi education. However, teachers face obstacles when using technology, such as unreliable access to the internet, a lack of technical support, and a large number of students. O'Neal and colleagues (2017) explain that the lack of technology resources may affect teachers' beliefs and efficiency in using it. Participants in the current study supported this assertion, as they did not see the importance of using some types of technology because it was not available to them at school. To ensure quality education is available to all students, it is necessary to examine classrooms, prepare them for the use of technological teaching aids, and provide technical assistance teams at schools and online.

Workshops and training courses in Saudi Arabia also focus on how to use technology and not on teachers' beliefs about technology. As a result, there is lack of understanding of the purpose of technological tools and how to use them to achieve educational objectives. The trainings are given to teachers with the expectation that they all share the same beliefs about technology. Kim et al.'s (2013) research reveals the relationship between technology integration practices and teachers' beliefs. The study sought to discover teachers' beliefs about the nature of learning and practices of integrating technology with teaching strategies. In their research, they applied a professional development project for four years and found that teachers' beliefs have a prominent role in technological integration with education. Therefore, professional development for teachers should be provided to them based on their beliefs.

Furthermore, one of the benefits from technology developments and integrating them into education is the ability to determine a specific number of instructional hours for the technological professional development of teachers. Teachers maintaining these hours of professional development on an ongoing basis are more efficient when dealing with technology and knowledgeable about updates for the most recent technological trends and approaches. To motivate teachers, the Ministry should give some incentives.

Implications for the Teacher Preparation Programs

Teachers' knowledge of teaching practices begins at an early stage in the Teachers' Preparation College. Teachers study the principles of teaching while studying their various disciplines, such as science, mathematics, Islamic Studies, and others. Some teachers believe that these two pieces of knowledge are sufficient to prepare a successful teacher, but this is not true. Empowered teachers are those who understand the characteristics of their students, the appropriate learning methods for them, and any factors that can affect the teaching and learning environment.

Because educational technology is a specialized field, it needs support from all educational parties involved. Based on the study results, some teachers do not have clear background knowledge of teaching methods, learning environments, and outcomes of the use of technology. Additionally, there is a shortage of suitable and ongoing professional development for educators who want to integrate technology effectively in their classrooms. Therefore, teacher training institutions should focus on pre-service as well as in-service teachers acquiring the necessary educational knowledge. Practical application of teaching should be available in classrooms similar to real-life classrooms, and teachers

should be trained to teach by bringing knowledge of content, teaching methods, and technological knowledge.

Among the other findings, the study reveals that some teachers believe that the content of Islamic Studies is not suitable for some technology tools or do not see the full benefits of including technology in the teaching of Islamic Studies. As a result, these teachers limit their use of technology and only use tools that display information or help students memorize it. The most significant way to overcome this barrier is to train teachers on how to teach Islamic Studies; this includes how to benefit from technology in every subject of Islamic Studies: the Holy Quran, Monotheism, Hadith, Fiqh. Showing how technology can benefit teaching and learning from an early stage will help teachers and provide them with the necessary knowledge on how to use technology more effectively in teaching Islamic Studies lessons. For example, how can a teacher use technology with a Zakat lesson? The Zakat in Islam is taking out a portion of the money you own annually, if it reaches a certain limit, and giving it to the poor. In this lesson, there is great opportunity for students to practice high-level skills, such as interpretation and prediction, and it is possible to apply mathematical skills. Instead of using technology traditionally, such as PowerPoint, teachers can provide learning through the use of engaging students with the smart board, simulation games, or the iPad.

Additionally, there is a requirement to increase collaboration between universities and schools in establishing technology-based research and teaching techniques to produce joint educational activities between the two sides: the university as a research body and the school as an application body.

Finally, the findings of this study add to the frame of knowledge regarding teachers' perceptions of integrating curriculum with instructional technology.

Limitations and Future Research

This study has limitations which provide several suggestions for additional research. First, TPCK is considered new to Saudi education, which might produce a unique experience in the Saudi context that TPCK in another country did not adequately capture. Education in Saudi Arabia focuses on instilling the Islamic faith in the hearts of students, as stated in the Education Policy Document (Education Policy Document, 1970). Also, in teacher preparation departments, instructors receive training on teaching Islam and advancing the right faith in the schools where they serve. Therefore, in order to apply the conceptual framework in this study to teachers of Islamic studies, the framework has to be modified to fit Saudi Arabia's Islamic studies curricula, teachers, and students.

Second, my current studies are limited to the schools of the capital, Riyadh, which is an urban center, and its schools have more advantages than other schools in other regions of Saudi Arabia. Frequently, schools, teachers, and students in large cities are more prepared to use technology and have good access to it. Therefore, it is necessary to investigate the views of teachers of Islamic Studies in rural areas, where educational capabilities may be different.

Third, the study sample is female Islamic Studies teachers, which excludes male teachers from the study results. It is essential to investigate Islamic Studies teachers' perspectives of using technology in middle and high school from both male and female

teachers. It is also useful to repeat the current study using male teachers in primary schools in Saudi Arabia.

Fourth, teachers who responded to take part in the interviews may not fully represent the population of Islamic Studies teachers because of the small sample. Also, the interviewees all have bachelor's degrees; no one with graduate education was part of the sample, and all had higher than average experience and tended to be older in age. For future research, it will be useful to conduct research that includes larger samples with intentional different characteristics than the sample of the recent study. Additional studies could also focus on samples that do not prefer to use technology to find out their opinions.

Fifth, this study may have been affected by the COVID-19 pandemic, as it occurred right after schools opened. Some teachers might be more comfortable with technology now than they were before. In contrast, other teachers might be less satisfied with using technology because they were forced to use it because of the pandemic.

Finally, the study found that more research is necessary to investigate teachers' understandings of the teaching and learning process, including educational content, teaching methods, learning environment, and use of technology. Additionally, extensive studies can be conducted to understand how to use technology based on each Islamic Studies subject.

Study Summary

In this chapter, the conclusions of the study are presented concurrently with the implications. Also, necessary recommendations are provided for the educational policymakers in Saudi Arabia with useful suggestions.

The study has two research questions. The first question focuses on the types of technology used by Islamic Studies educators in elementary schools. The second question addresses the teachers' perspectives on integrating technology in their educational settings. Participants in the study indicated a variety of technology tools they used regularly and as well as items they used infrequently. While certain technological tools were available in classrooms, others had to be brought to the school by the teacher. Some teachers choose to stick with the technology they were already familiar with. The findings showed a small number of teachers who kept including elements of technology in their lessons that they had not previously utilized. As for the results of the second question of the study, the teachers showed positive views on the use of technology in Islamic Studies classes. And it became clear that the Saudi curriculum needed more digital content that supported and matched its goals.

The results of the current study have strong implications for literatures, teachers, curriculum developers, the Saudi Ministry of Education, and teacher preparation programs. The Ministry can find the teachers' need for specialized courses and work with them for further development in the field of benefiting from educational technology. Also, teachers will benefit from ready-made digital content that is suitable for the curriculum, which will save them the trouble of research and scrutiny. Everyone in the

educational system can work side by side to fill the existing deficit and facilitate the educational process.

Finally, the importance of this study lies in the fact that it clarifies the teachers' viewpoints towards the integration of technology in education and the obstacles they face, which enables officials in the Saudi education system to have a better understanding of the reality teachers experience integrating technology into their Islamic Studies classes.

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Appendix A: King Saud University Approval

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عمادة البحث العلمي

Ref No: KSU-HE-22-019

حفظها الله

سعادة الباحثة/ أمل عبد المحسن السيف

السلام عليكم ورحمة الله وبركاته

إشارة إلى توصية اللجنة الفرعية لأخلاقيات البحوث الإنسانية والاجتماعية في جلستها العشرين بتاريخ ١٤٤٣/٠٦/٢٢هـ، الموافق ٢٠٢٢/٠١/٢٥م.

نفيد سعادتكم بموافقة اللجنة الدائمة لأخلاقيات البحث العلمي على إجراء البحث الموضح بالجدول الآتي:

م	الاسم	عنوان البحث	الأداة	الحالة
١	أمل عبد المحسن السيف	تصورات معلمات الدراسات الإسلامية عن استخدام التكنولوجيا في المرحلة الابتدائية	استبانة مقابلة	الموافقة

وعليه نأمل من الجهات المعنية بالجامعة تسهيل مهمة الباحثة.

وتفضلوا بقبول وافر الاحترام

عميد البحث العلمي

نائب رئيس اللجنة الدائمة لأخلاقيات البحث العلمي

أ.د محمد بن إبراهيم الوابل



صورة إلى سكرتير اللجنة الدائمة لأخلاقيات البحث العلمي

٤/٦٧/١٨٨٢٧٥

١٤٤٣/٠٧/١٣

Appendix C: Consent Form



Consent to Participate in Research

You are being asked to participate in a research study.
Your participation in this research study is voluntary, and you will not be penalized or lose benefits if you refuse to participate or decide to stop.

Before you agree, I must tell you about me and the research. I am Amal Alsaif a student in the Morgridge College of Education at the University of Denver. I am working on completing my doctoral research titled Islamic studies teachers' perceptions of applying technology in elementary schools. My study aims to answer the two following questions: What technology do female Islamic elementary school teachers use in their current practices? What are the perceptions of female Islamic elementary school teachers on applying technology in Saudi Arabian elementary schools?

You will be doing a Zoom interview that lasts for 45-60 minutes. The interview will be recorded for the research purposes only. After the interview ends, I will need to relisten to the conversation and be able to analyze it. Only the researcher will see the interview recording. Also, all data will be kept strictly confidential, and after the search is completed, I will destroy it.

To the best of my knowledge, your participation in this study does not bring any risk or threat to you. But in the event of unexpected hazards due to the researcher's negligence, she will undertake the treatment and compensation.

I will give you a signed copy of this document and a written summary of the research.
You may contact me at amal.alsaif@du.edu any time you have questions about the research.

You may contact the Institutional Review Board at the University of Denver Institutional Review Board at 303-871-2121 if you have questions about your rights as a research subject.

Consent has been documented and witnessed, indicating approval or disapproval by another means and method (blinking of eyes, raising arm, etc.) as noted below, and that the research study has been described to you orally, and that you voluntarily agree to participate.

Name of Participant Date Method used for indicating approval

Signature of Witness Date

Appendix D: Electronic Survey

The researcher Amal Alsaif seeks to collect information about the perceptions of Islamic Studies teachers in elementary schools about the use of technology. This survey is one of the requirements for doctoral research in curriculum and instruction. The targets of this survey are Islamic Studies teachers at elementary schools in the city of Riyadh. The identity of the participants will be anonymous, and your answers will not affect your performance evaluation. Your participation in answering the survey is voluntary and will help me collect study data. To answer the questions it will take you three minutes. All data will be used for research purposes only. I appreciate your cooperation.

Kindly answer the following questions by choosing the option that represents your answer:

Questions:

1. I want to participate in the survey:

Yes

No

2. Age: 20-30 31-40 41-50 51-60

3. Educational Background:

a) High school

b) Bachelor

c) Educational Diploma

d) Masters

e) PhD

4. Years of Experience:

a) 5 years or less

b) 6- 10 years

c) 11- 20 years

d) Over 20 years

5. Do you use technology in your teaching?

Yes

No

6. What kind of technology do you use?

7. I feel confident using technology.

Agree Strongly Agree Neutral Disagree Strongly disagree

8. I believe in the importance of technology in education.

Agree Strongly Agree Neutral Disagree Strongly disagree

9. I use technology because it is helpful.

Agree Strongly Agree Neutral Disagree Strongly disagree

10. I use technology because I am required to do so.

Agree Strongly Agree Neutral Disagree Strongly disagree

11. I started using technology in teaching and learning after the COVID-19 pandemic.

Agree Strongly Agree Neutral Disagree Strongly disagree

In addition to completing collecting data for the study, there will be an interview. If you are interested in participating, please write your name and contact information. _____

Appendix E: Semi-Structured Interview

Interviewer: _____ Interviewee: _____

Date: _____ Time: _____

Research purpose: This study aims to discover the perspectives of female Islamic teachers on applying technology in elementary schools in Riyadh, Saudi Arabia. Our deepening understanding of the importance of and how to benefit from technology in education will help teachers and students to harmonize with national development ideas.

Interview questions:

1. How many years of experience have you had as an elementary school Islamic Studies teacher?
 - a) Was it all in one school?
 - b) Did you try teaching other subjects beside Islamic studies?
2. Why do you use technology?
3. How often do you use technology?
 - a) Do you use technology in other activities at school beside teaching?
4. What are your impressions of the use of technology in education in general?
 - a) What are the differences among using technology with different subject?
5. What types of technology do you use?
 - a) What type do you rely on most?
 - b) Why?
6. From where do you get the technology tools?
 - a) If the classroom was not equipment with technology, what do you do?
7. Do you face any difficulty finding the appropriate technology for the lesson?
 - a) What is the availability to find an appropriate digital content for Islamic studies?
8. Has your opinion of technology changed after the COVID-19 pandemic? And how?
9. From your point of view, what are the strengths and weaknesses that technology brings to education?
 - a) What are the needs of teachers in order to be able to use technology easily?
 - b) How can you limit the emergence of such obstacles?
 - c) What is the role of the Ministry of Education in facilitating the process of teaching and learning using technology?
10. How do you describe students' learning with a lesson that uses technology and a lesson that does not use technology?
 - a) Who are the students that get engaged with learning when integrating technology?
 - b) Who are the students that do not get engaged with learning when integrating technology?

11. How does technology support teaching and learning?

- a) Describe the differences between your teaching process when using technology and without.
- b) Describe the differences in students learning between learning using technology and without.

12. How does technology help the teacher?

13. How does technology affect teaching and learning process?

Finally, I enjoyed your conversation and would like to ask you what would you like to add?

Thank you for your participation in this interview. I will contact you in the coming days to offer you my interpretation of the interview data and give you the opportunity to amend or add to it.

Appendix F: Travel Approval



January 25, 2022

To whom it may concern:

I am writing to request that Amal Alsaif be allowed to travel from the US to Saudi Arabia to collect data for her dissertation in Curriculum & Instruction at the Morgridge College of Education at the University of Denver.

Amal is studying Islamic Studies teachers' perceptions of educational technology. To collect data, she will need to travel to Saudi Arabia this spring (around April 2022) for approximately three months. She will then need to return to the US (around June 2022) to complete her data analysis and defend her dissertation.

If you require any further documentation or clarification, do not hesitate to reach out via email.

Best regards,



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