

Understanding Digital Responsiveness of Madrasa Teachers

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INTRODUCTION

The digital responsiveness in this study is the ability of teachers to incorporate digital tools in teaching, react to technological shifts and to make good use of digital materials to facilitate learning without losing sight of pedagogical and institutional objectives. In this context, madrasa teachers mean the teachers who impart Arabic Language and Islamic Values Education and other related education as part of national education. These educators are critical in ensuring that the students develop in both academic, moral and cultural aspects within the context of technological integration in learning.

Nowadays, technological innovations have made a major impact on educational activities. Digital technologies have revolutionized the manner in which instruction is being taught, and students are interacting with the content. Digital tools can be used in education to make the learning process more accessible, flexible, and interactive. Technology can be used to enhance active teaching and promote more meaningful learning experiences (Green, 2025). The educators are supposed to support the learning process, using the strategies that will correspond to technological progress and requirements of modern education (Tuazon, 2019).

Digital integration brings both opportunities and challenges in Madrasa education where the education focuses on Islamic values, Arabic language, and religious education in addition to academic education. Although digital tools may improve access to instructional content, facilitate multimedia learning, and improve student engagement, there are multiple factors that constrain their successful utilization. These are accessibility to devices, unreliable internet access, inadequate infrastructure and training sustainability. These struggles may influence the capacity of Madrasa teachers to use digital tools in their work.

Educational administration will be very helpful in solving these challenges. The factors that affect the level at which teachers incorporate technology in teaching are institutional support, access to resources, professional development and policy implementation. Unless there are proper school leadership and education authorities' validation, digital responsiveness among teachers might not go further even after its role has been acknowledged.

Even though digital responsiveness is becoming an acknowledged necessity in contemporary education, little research has been done specifically on Madrasa teachers. Much of the literature has been about a larger educational context, or has not made much use of qualitative methods, giving little insight into the lived experiences of teachers. The study is based on a qualitative phenomenological research methodology and examines the experiences, challenges, and practices of teachers in Madrasa to incorporate digital technologies in their instruction. It is hoped that policy development, professional development initiatives and educational leadership will be informed through the findings of this study to facilitate the effective and culturally responsive integration of digital integration in Madrasa education.

Framework of the study

This study was chiefly based on the Technological Pedagogical Content Knowledge (TPACK) model developed by Mishra and Koehler (2006), which described the manner in which educators successfully incorporated technology in teaching through the interplay of technological, pedagogical, and content knowledge. TPACK highlighted the importance of teachers being aware of the potential of technology beyond solely understanding

the technology itself and how it aligned with teaching philosophy and content. In the context of Madrasa education, TPACK offered a framework for examining how teachers balanced digital tools with Islamic content and pedagogical practices.

National educational policies that promoted the integration of digital technology in education facilitated the improvement of the quality of teaching and learning. According to the Philippine Professional Standards for Teachers (PPST) under Department of Education Order No. 42, s. 2017, teachers were expected to become digitally competent and integrate ICT into the teaching process to keep pace with technological changes and improve student learning. These standards emphasized the need for teacher responsiveness to digital innovation as part of quality education delivery. This policy direction was particularly emphasized in Madrasa education, where teachers not only provided Islamic instruction but also taught general education subjects. The challenge of integrating digital tools was expected to support learning while preserving cultural and religious values. These policies provided the institutional framework for analyzing the digital responsiveness of Madrasa teachers, particularly in relation to how they aligned their instructional practices with national expectations on ICT integration.

In addition, the Department of Education implemented policies that encouraged the use of digital technologies in the learning process. For example, DepEd Order No. 78, s. 2010, or the DepEd Computerization Program, aimed to provide schools with ICT packages to improve teaching and learning. Moreover, DepEd Order No. 35, s. 2020, or the Basic Education Learning Continuity Plan, emphasized the significance of digital and flexible learning modalities in ensuring the continuity of education during disruptions. These policies reiterated the necessity for teachers to become digitally competent and responsive to technological changes in education.

Traditional Madrasa education focused on Islamic subjects such as the Qur'an, Arabic language, Islamic jurisprudence, character development, and general academic instruction. With the transition of educational systems into the digital era, the integration of technology into Madrasa instruction created opportunities to increase access to information, improve instructional delivery, and strengthen communication with learners. However, the implementation of digital technology in Madrasa contexts needed to remain aligned with cultural, religious, and instructional considerations. This created a unique learning environment where digital innovation was integrated alongside values-based education.

To further explain the factors affecting teachers' digital responsiveness, supporting theories were incorporated alongside TPACK. The Unified Theory of Acceptance and Use of Technology (UTAUT), which explained the influence of behavioral intention, performance expectancy, effort expectancy, social influence, and facilitating conditions on technology adoption, also informed this study. In this study, UTAUT helped explain the extent to which Madrasa teachers adopted digital tools based on their perceived usefulness, ease of use, social support, and available resources.

The Technology Acceptance Model (TAM) also supported this study by emphasizing that perceived usefulness and perceived ease of use influenced teachers' adoption of digital technologies. This model helped explain why some teachers readily embraced digital tools while others showed reluctance because of perceived complexity or lack of relevance. In this study, TAM provided insights into how teachers' perceptions of usefulness and ease of use influenced their intention to integrate digital technologies into instruction.

Lastly, Social Constructivist Theory emphasized the significance of interaction and collaborative learning in the learning process. This theory supported the idea that digital tools could facilitate learning through collaboration, peer support, and guided interaction, which were important in Madrasa classrooms where learning commonly occurred within a community-based setting. In this study, the theory helped explain how digital tools supported collaborative and interactive learning in Madrasa classrooms.

In summary, the combination of these theories provided a holistic framework for explaining the digital responsiveness of Madrasa teachers. TPACK served as the central theoretical framework, while UTAUT, TAM, and Social Constructivism functioned as complementary theories that explained the behavioral, contextual, and social factors influencing digital technology adoption. Collectively, these theories helped explain how digital

tools were utilized in Madrasa education and how teachers balanced pedagogical, cultural, and technological factors in their instructional practices.

Statement of the Problem

This study sought to determine the digital responsiveness of Madrasa teachers. Specifically, it sought to answer the following questions:

1. What is the digital responsiveness of Madrasa teachers?
2. What training plan may be proposed to enhance the digital responsiveness of Madrasa teachers?

Significance of the Study

The findings of the study may provide insights into the digital responsiveness of Madrasa teachers as they integrate digital technologies into teaching and learning while maintaining cultural and pedagogical values. The findings of this study may provide valuable insights to various stakeholders in the field of education.

Madrasa Teachers. The findings of this study may help Madrasa teachers identify areas for professional development and strengthen their skills and competencies in the use of digital technologies. The study may also help them assess their level of digital competence and responsiveness in teaching.

Students. The findings of this study may contribute to the development of strategies that support students' learning experiences and academic achievement through improved digital integration in instruction.

Ministry of Basic, Higher and Technical Education – Directorate General of Madrasa Education. The results of the study may serve as a basis for developing training programs, workshops, and other professional development activities for Madrasa teachers.

School Administrators. The findings may help school leaders design programs, policies, and support systems that strengthen digital integration and improve instructional practices among teachers.

Policymakers. The findings may guide policymakers in developing policies and programs that support digital integration, infrastructure development, and professional development in Madrasa education.

Future Researchers. This study may serve as a reference for future studies related to digital responsiveness, technology integration, and Madrasa education.

Delimitation of the Study

This study was delimited to exploring the digital responsiveness of Madrasa teachers in Marawi City. The study was conducted in 2026 using a qualitative transcendental phenomenological design anchored on the framework of Clark Moustakas (1994). Specifically, the study focused on selected Madrasa teachers in Marawi City as the participants of the study.

The scope of digital responsiveness was limited to the participants' access to digital tools, skills in utilizing digital resources, and attitudes toward integrating technology into their teaching practices. Data were gathered through semi-structured interviews and were interpreted using the phenomenological analysis of Moustakas, supported by thematic analysis.

The study did not include students, school administrators, parents, or teachers outside the identified Madrasa institutions in Marawi City. It also did not measure the effectiveness of specific digital tools or compare the digital responsiveness of Madrasa teachers with teachers from other educational settings. By narrowing the focus, the study aimed to provide a deeper understanding of how Madrasa teachers adapt to and engage with digital technologies within their educational context.

Definition of Terms

To provide a clearer understanding of the study, the following terms are defined theoretically and operationally. **Digital Responsiveness.** Theoretically, digital responsiveness refers to the capacity of an individual to adjust to, internalize, and effectively apply digital technologies in professional practice. It is closely associated with digital competence, which involves the knowledge, skills, and attitudes necessary to use digital technologies effectively and responsibly in educational settings (Diaz, 2025). It also includes the ability to align digital tools with pedagogical goals, adapt to technological changes, and respond appropriately to the demands of digital learning environments.

Operationally, digital responsiveness referred to the ability of Madrasa teachers to integrate digital resources into the teaching process, adapt to technological changes, and effectively utilize digital tools to support learning while maintaining pedagogical and institutional goals.

Madrasa Teachers. Theoretically, Madrasa teachers are educators in Islamic educational institutions who demonstrate professional competence through teaching, continuous self-development, integration of Islamic values, and the utilization of technology to support learning and instructional practices (Tambak & Sukenti, 2024).

Operationally, Madrasa teachers referred to the teachers employed in selected Madrasa schools who participated in this study regarding their digital responsiveness.

Digital Integration. Theoretically, digital integration refers to the deliberate and purposeful use of digital tools, platforms, and resources to facilitate and improve teaching and learning (Green, 2025). It involves integrating technology into instructional processes to enhance interaction, access to information, and overall learning experiences.

Operationally, digital integration referred to the actual use of digital tools by Madrasa teachers, such as multimedia resources, online platforms, and instructional technologies, to support classroom instruction and improve student learning.

Digital Competence. Theoretically, digital competence refers to the knowledge, skills, and attitudes necessary to use digital technologies effectively, critically, and responsibly in professional and academic settings (Mbandje et al., 2023).

Operationally, digital competence referred to the capability of Madrasa teachers to confidently and effectively use digital tools, platforms, and resources in facilitating teaching and learning processes.

METHODOLOGY

This chapter deals with the methodology of the study. It will describe the research design. Research locale, respondents of the study, research instrument, Ethical and data gathering procedure, scoring procedure, and treatment of data. By clearly describing these methodological components, this chapter aims to provide a transparent framework that ensures the reliability and validity of the findings. The chosen methods are aligned with the study's objectives to effectively address the research questions and contribute meaningful insights to the field.

Epoche

In qualitative phenomenological research, particularly in the framework of Clark Moustakas (1994), the process of epoche or bracketing requires the researcher to set aside personal experiences, assumptions, and biases related to the phenomenon being studied. This process helps ensure that the data gathered reflect the genuine lived experiences of the participants rather than the researcher's prior beliefs or expectations.

In this study, the researcher acknowledged having prior knowledge and general awareness regarding the use of digital technologies in education, including perceptions about their advantages and challenges. To maintain

objectivity, these personal views and experiences were consciously bracketed during the data collection and analysis process. The researcher maintained a neutral stance by focusing on the participants' perspectives and allowing their experiences to emerge naturally during the interviews. This process helped ensure that the findings remained grounded in the actual lived experiences of Madrasa teachers regarding digital responsiveness.

Research Design

This study employed a qualitative research design based on Moustakas (1994) transcendental phenomenological approach to understand the lived experiences of Madrasa teachers in relation to digital responsiveness. The design fits well in examining the experiences that individuals go through in order to gain knowledge about how they make meaning out of their experiences. The phenomenological method can be used to conduct a comprehensive study of what digital responsiveness entails in the lives of Madrasa educators in their learning environment.

The key aspect of this design is the application of epoché, whereby the researcher consciously holds back her own assumptions, prejudices, and beliefs about digital technology and Madrasa education. This enabled the phenomenon to be looked at through the eyes of the participants so that the findings were a true depiction of the lived experiences of the participants and not what the researcher expected.

The research adhered to the organized phenomenological steps introduced by Moustakas, which involve phenomenological reduction to discover meaningful statements of the data, imaginative variation to consider the potential meaning and perspective, and synthesis of meanings and essences to represent the essence of the lived experience. The study created a rich and contextualized meaning of digital responsiveness based on the real-life experiences of Madrasa teachers through this design.

Research Locale

A Madrasa is an Islamic educational institution that provides both religious and academic instruction. Its curriculum traditionally includes the study of the Quran, Hadith, Fiqh (Islamic jurisprudence), Aqeedah (Islamic creed), Arabic language, and Islamic values. In the Philippine context, some Madrasas adopt an integrated curriculum that combines Islamic education with the basic education competencies prescribed by the national education system. Through programs such as the Arabic Language and Islamic Values Education (ALIVE) Program, Madrasas aim to balance religious formation with academic development with the support of the Department of Education.

The study was conducted in a selected Madrasa located in the Marawi City. The area is predominantly Muslim, where Islamic culture, language, and traditions strongly influence educational practices and community life. The Madrasa caters to learners from different socio-economic backgrounds and provides both academic instruction and Islamic religious education. It operates within a learning environment that emphasizes moral development, Arabic language proficiency, and adherence to Islamic values and practices.

The Madrasa also reflects efforts to integrate modern educational practices while preserving traditional pedagogical approaches. These efforts include participation in training programs supported by educational agencies, involvement in Department of Education initiatives related to Madrasah education, and attempts to improve instructional delivery through the use of limited technological resources. This setting provides an appropriate context for examining the digital responsiveness of Madrasa teachers, particularly in relation to balancing traditional Islamic education with emerging digital technologies.

Participants of the study

This study explored the digital responsiveness of Madrasa teachers in Marawi City, particularly their experiences in integrating digital technologies into teaching, their perceptions regarding the effectiveness of these practices, and the challenges they encountered in the process. The participants consisted of fifteen (15) Madrasa teachers

selected from one identified Madrasa institution in Marawi City. To ensure confidentiality and anonymity, the participants were assigned identification codes (P1, P2, P3, and so on) throughout the study.

The participants represented varying lengths of teaching experience, ranging from less than five (5) years to more than fifteen (15) years in Madrasa education. This variation in teaching experience provided diverse perspectives regarding digital responsiveness and allowed the study to capture insights from both relatively new and more experienced educators. All participants had prior experience in using digital tools within their teaching practices, enabling them to provide relevant and meaningful information related to the focus of the study.

Sampling Procedure

The study employed purposive sampling to identify participants who were most appropriate for the objectives of the research. Fifteen (15) Madrasa teachers were intentionally selected to provide in-depth insights into digital responsiveness within the context of Madrasa education. The selection of participants was guided by specific inclusion and exclusion criteria to ensure that they possessed sufficient experience and familiarity with the phenomenon being explored.

The inclusion criteria were as follows: (1) currently teaching in the selected Madrasa institution, (2) having at least five (5) years of teaching experience, and (3) possessing prior experience or exposure to the use of digital tools in teaching. These criteria were established to ensure that the participants had adequate teaching experience and relevant exposure to digital integration, allowing them to provide informed and meaningful responses related to the study.

The exclusion criteria included teachers with less than five (5) years of teaching experience and those without experience or exposure to digital teaching practices. These criteria were applied to ensure that the data gathered were grounded in substantial and relevant experiences concerning digital responsiveness in Madrasa education.

Research Tool

In this study, the primary research instrument was a semi-structured interview guide aligned with the qualitative phenomenological design. The interview guide consisted of ten (10) open-ended questions intended to explore the digital responsiveness of Madrasa teachers. These questions were designed to gather detailed information regarding the participants' experiences, perceptions, and practices related to the integration of digital technologies in teaching.

The interview questions focused on several key areas: (1) teachers' perceptions of digital responsiveness, (2) experiences in using digital tools in classroom instruction, (3) perceived benefits of digital integration, (4) challenges encountered in implementing digital tools, (5) access to technological resources, (6) institutional support and infrastructure, (7) alignment of digital tools with Islamic values and pedagogy, and (8) professional development needs. These areas ensured that the instrument addressed the objectives of the study comprehensively.

The semi-structured format allowed the researcher to ask follow-up questions based on the participants' responses to further explore significant experiences and meanings. This flexibility made it possible to gather rich and detailed narratives while maintaining consistency across interviews. The instrument was administered to fifteen (15) Madrasa teachers with at least five (5) years of teaching experience to ensure that the data gathered reflected substantial and meaningful insights into digital responsiveness within the Madrasa setting.

Data Gathering Procedures

The data gathering process to support this study was done in three phases, namely: prior, data collection, and follow-up. Before the data was collected, the researcher obtained ethical clearance from the University Research Ethics Committee (REC) to guard against breach of ethical standards in research involving human subjects. Once

REC approval was received, the researcher was able to get a Dean Certification at the Graduate School, and then, the madrasa administration received formal permission letters, requesting the researcher to conduct the study in the organization he chose.

After the school administration gave the researcher the green light, the researcher selected the eligible individuals according to the inclusion criteria and approached them personally to clarify the aim of the study, the nature of the participation, and the confidentiality level guaranteed. Each participant was informed and gave their informed consent before data collection. They were made aware of their right to withdraw freely and without any penalty at any time. This was to make sure that the participation was voluntary, informed, and not coerced.

The researcher also carried out semi-structured interviews with the subjects during data collection at a time and a place that the subjects found convenient to ensure that they were not distracted by their teaching duties. To allow cultural and religious norms to be upheld in the Madrasa community, a gender-sensitive data collection strategy was applied. The male participants answered on written means, whereas the female participants were interviewed in a face-to-face fashion and appropriately culturally. This would allow honoring the Islamic standards of modesty and appropriate relations between the genders, at the same time preserving the credibility and authenticity of the data.

Once the data were collected, the responses were transcribed and anonymized to preserve the identity of participants. The data were carefully stored in digital files, which were password-protected and could only be accessed by the researcher. The researcher made sure that all the data handling, storage, and reporting were conducted in an ethical manner towards confidentiality and data protection. In the course of the research, the researcher adhered to the ethical principles of respect for persons, beneficence, and confidentiality, which guaranteed the safety, dignity, and welfare of all the participants.

Data Analysis

This study followed the transcendental phenomenological approach of Clark Moustakas (1994) in exploring the lived experiences of Madrasa teachers regarding digital responsiveness. Central to this approach is the process of epoche or bracketing, which required the researcher to consciously set aside personal assumptions, biases, and prior experiences related to digital technology and Madrasa education. Through this process, the researcher approached the participants' experiences with openness and neutrality, allowing their perspectives to emerge without the influence of preconceived beliefs.

Following the process of epoche, the study proceeded with the systematic stages of phenomenological analysis proposed by Moustakas. The first stage involved phenomenological reduction, where the researcher identified and extracted significant statements from the participants' narratives related to their experiences of digital responsiveness. These statements were then grouped into units of meaning that represented the essence of the participants' experiences. During this stage, emphasis was placed on describing the participants' experiences as they were expressed rather than interpreting them based on the researcher's personal views.

The next stage involved imaginative variation, in which the researcher explored the possible meanings and perspectives underlying the experiences shared by the participants. This process provided deeper insight into how Madrasa teachers experienced digital responsiveness within the context of instruction, institutional conditions, and cultural and religious values. The final stage was the synthesis of meanings and essences, where the identified themes and clustered meanings were integrated to describe the fundamental structure of the phenomenon being studied.

Thematic analysis was used as a complementary analytical strategy to support the organization and presentation of the data. This process included familiarization with the transcripts, coding of significant statements, identification of patterns, and development of themes aligned with the phenomenological findings. While

thematic analysis provided a structured means of organizing the data, the analysis remained grounded in the essence-oriented focus of phenomenology.

To ensure trustworthiness, the study observed the criteria of credibility, transferability, dependability, and confirmability. Credibility was strengthened through prolonged engagement with the data and repeated review of interview transcripts. Transferability was supported through detailed descriptions of the research setting and participants. Dependability and confirmability were established through the maintenance of an audit trail, systematic documentation of analytical decisions, and clear reporting of the research procedures followed throughout the study.

Ethical Consideration

This study has been done in high regard to the accepted standards of ethics, such as respect for persons, beneficence, non-maleficence, and justice. Ethical permission was obtained before data collection from the University Research Ethics Committee in order to observe institutional research standards and protect the rights and welfare of the participants.

All participants were informed and gave their consent before participating in the study. The purpose of the study, the voluntary nature of the study, the right to withdraw at any point without being penalized and the use of their data was clearly explained to the participants. The presentation of findings was conducted using pseudonyms and codes to ensure confidentiality and anonymity, and any identifying information was eliminated in transcripts and reports.

The data gathered was stored in secure, password-protected equipment, with only the researcher having access to the data to ensure confidentiality. The research also noted the cultural and religious background of the Madrasa community because it took into account the culturally relevant data collection methods, such as gender sensitivity, sensitivity when dealing with the participants, and respecting the culture of the Madrasa community.

The researcher also ensured that no harm or discomfort would be caused by participation by ensuring respectful communication, privacy of the participants, and ensuring the researcher offered safe, non-judgmental environment during the interviews. These were the ethical considerations that were implemented to support the integrity of the research study and the dignity of all subjects.

Presentation, Analysis, and Interpretation of Data

This chapter presents the analysis and interpretation of data gathered through semi-structured interviews using thematic analysis. The study explored the digital responsiveness of Madrasa teachers and examined how they experienced the integration of digital technologies in teaching and learning within the context of Madrasa education.

The findings revealed four major themes that described the participants' experiences regarding digital responsiveness: (1) Digital Tools as Catalysts for Enhanced Engagement, (2) Digital Access and Infrastructure Constraints, (3) Balanced and Guided Digital Integration, and (4) Digital Training Gaps and Capacity Development. These themes reflected the participants' experiences in using digital technologies, the challenges they encountered, the ways they balanced technology with Islamic educational values, and the professional support needed to strengthen digital integration in Madrasa education.

Digital Responsiveness of Madrasa Teachers

The participants described digital responsiveness as the ability to adapt to the growing demands of technology integration while remaining grounded in the cultural, moral, and pedagogical foundations of Madrasa education. Their experiences showed that digital responsiveness was not limited to technical knowledge or the use of

devices in instruction. Instead, it involved thoughtful and purposeful integration of digital tools to support learning while preserving the religious identity and traditional instructional practices of Islamic education.

The participants also viewed digital tools as instructional supports that enhanced student engagement, participation, understanding, and independent learning. At the same time, their experiences revealed that digital responsiveness was shaped by several factors, including technological resources, institutional support, professional development opportunities, and the need to ensure that digital integration remained aligned with Islamic values and educational goals. Analysis of the participants' narratives led to the emergence of four major themes that collectively described the realities, challenges, and practices associated with digital responsiveness in Madrasa education.

Theme 1: Digital Tools as Catalyst for Enhanced Engagement

Digital tools served as transformative supports in the classroom rather than mere supplementary materials. Videos, audio resources, and visual aids encouraged students to move from passive listening to active participation in classroom activities. The participants described how students' excitement and interest increased their focus and helped them understand complex subjects such as Arabic language and Qur'anic lessons more effectively.

The findings showed that digital tools facilitated student engagement, participation, understanding, and independent learning in Madrasa education. According to the participants' observations, digital learning materials such as videos, audio resources, and online platforms helped motivate students, improve understanding, and increase classroom participation. These findings aligned with the Technological Pedagogical Content Knowledge (TPACK) framework, which emphasizes the integration of technology and pedagogy to enhance learning outcomes, and the Technology Acceptance Model, which highlights the influence of perceived usefulness on technology adoption and integration.

As shared by Participants 1, 2, 4, 7, and 9, students "show more interest in lessons" and "became participative, excited, and responsive" during the integration of digital tools in classroom instruction. These responses suggested that digital integration created positive emotional engagement among learners, which increased motivation and encouraged active participation in the learning process.

The findings indicated that student engagement, motivation, and involvement in Madrasa classrooms were enhanced through the use of digital tools. Students became more attentive and interested when digital elements were incorporated into instruction, resulting in a more interactive and dynamic learning environment. The availability of multimedia resources such as videos, audio recitations, and visual presentations also helped simplify complex concepts, particularly in Arabic language and Islamic studies, making lessons easier to understand and more meaningful for learners.

In addition, the use of digital tools stimulated multiple senses by allowing students to both see and hear instructional content, which improved understanding and retention of lessons. This contributed to greater responsiveness during classroom discussions, more active participation in activities, and increased enthusiasm toward learning tasks. The findings suggested that digital tools functioned not merely as supplementary materials but as effective instructional supports that enhanced student engagement and the overall learning process. Participants expressed that the use of multimedia resources made classroom instruction more interactive and meaningful for learners.

Participant 3 shared that integrating digital tools in classroom instruction made lessons "easier for them to understand." Participants 5, 6, and 11 also explained that digital tools "could explain lessons clearly" and "improve pronunciation," while Participant 13 stated that digital tools "make visuals and lessons clearer." These responses indicated that multimedia resources such as audio and visual materials helped simplify complex

concepts, particularly in language instruction and Islamic studies, which contributed to improved learner comprehension.

The findings further suggested that digital responsiveness supported a shift from traditional teacher-centered instruction toward a more learner-centered approach. Students were given opportunities to interact with learning materials more actively, participate in lessons, and engage in independent learning activities. Digital tools also provided varied ways of presenting information, allowing teachers to address different learning styles and helping students process lessons more effectively.

Within the context of Madrasa education, subjects such as Qur'anic recitation and Arabic language instruction require repetition, accuracy, and guided practice. The use of audio-visual materials supported these learning processes by improving comprehension and strengthening skill development. Exposure to online platforms also encouraged independent and self-directed learning, as students were able to access lessons, review materials, and continue learning beyond the classroom setting. These experiences reflected a more active learning process in which students assumed a more meaningful role in constructing their own understanding.

Diaz et al. (2024) supported these findings by explaining that digital tools can increase student engagement and participation when properly integrated into instructional activities. Mukti Ali et al. (2024) also emphasized that technology use in Madrasa education facilitates more interactive and meaningful learning experiences by making lessons more relevant and accessible to students. These studies reinforced the participants' experiences that digital tools contributed to greater learner involvement and improved classroom interaction.

The findings also aligned with Social Constructivist Theory, which emphasizes that learning takes place through interaction, collaboration, and active participation. In this context, digital tools created opportunities for students to interact more actively with instructional content and become more involved in the learning process. The Unified Theory of Acceptance and Use of Technology (UTAUT) also supports these findings by explaining that individuals are more likely to adopt and use technology when they perceive it as useful and easy to use. In this study, the teachers positive perceptions of digital tools encouraged their continued use in improving instruction.

Studies by Diaz et al. (2025) and Momani et al. (2023) further supported the idea that digital technologies encourage self-directed learning and improve academic and subject-specific performance. These studies complemented the present findings, which showed that digital responsiveness enhanced learner engagement, understanding, and independent learning within the context of Madrasa education.

The findings suggested that digital tools played a significant role in improving engagement, understanding, and overall learning outcomes in Madrasa education. From an educational administration perspective, these findings indicated the importance of school support in strengthening the integration of digital technologies in instruction. To improve instructional delivery, school administrators needed to ensure that teachers had access to appropriate multimedia resources such as projectors, audio-visual materials, and online learning platforms.

Participants 8 and 10 shared that "advanced learning via YouTube can accelerate learning," while Participant 12 noted that digital tools helped improve retention. Participants 14 and 15 also expressed those digital technologies helped learners "complete tasks faster" and "perform better inside the classroom." These responses suggested that the use of digital technologies in classroom instruction contributed to faster task completion, improved retention, and better academic performance among learners.

The findings also indicated the need for schools to support innovative and learner-centered instructional practices that encourage student participation and self-directed learning. This included providing opportunities for students to use digital resources for research, practice, and lesson reinforcement. At the same time, administrators were expected to guide and support teachers in integrating digital tools in ways that remained consistent with Islamic values and traditional pedagogical practices observed in Madrasa education.

The findings also revealed that the success of digital responsiveness was closely connected to the availability of resources and institutional support. The benefits of digital integration were difficult to maximize in the absence of adequate infrastructure, access to devices, and stable internet connectivity. These conditions pointed to the importance of strengthening technological infrastructure, providing continuous professional development, and creating support systems that could assist teachers in integrating digital tools more effectively in instruction.

It also showed that digital responsiveness involved more than the technical use of technology in teaching. Within Madrasa education, it reflected an instructional approach that aimed to improve the quality of teaching and learning while remaining aligned with the educational, cultural, and religious foundations of Islamic education.

Theme 2: Digital Access and Infrastructure Constraints

The second theme focused on the digital access and infrastructure limitations experienced by Madrasa teachers in integrating technology into instruction. Although the participants recognized the value of digital tools in improving teaching and learning, their experiences showed that technology integration was often affected by limited internet connectivity, insufficient digital devices, unstable electricity, and inadequate technological facilities. These conditions created challenges in sustaining digital learning activities within the Madrasa setting.

Several participants described persistent connectivity problems during classroom instruction. Participants 1, 2, 3, 7, 11, 12, and 13 referred to experiences involving “slow internet connection,” “unstable internet,” “poor signal,” “weak internet,” and recurring “WiFi issues.” These accounts reflected how unreliable internet access interrupted online activities, delayed lessons, and limited opportunities for continuous digital engagement inside the classroom. In some instances, teachers experienced difficulty accessing online resources, showing multimedia materials, or conducting technology-supported activities because of unstable connectivity.

The participants also explained that digital responsiveness was influenced by the availability of technological resources and school facilities. Despite their willingness to integrate technology into instruction, some teachers encountered difficulties because of limited access to gadgets, lack of computer laboratories, and insufficient digital infrastructure within the school environment. These experiences affected the consistency of technology integration and reduced opportunities for learners to maximize digital learning resources during classroom instruction.

These constraints created disruptions in the continuity of instruction, affected the timing of learning activities, and limited the consistent integration of digital tools in classroom teaching. In situations where internet connectivity and technological resources were unstable, teachers experienced difficulty sustaining technology-supported instruction and maintaining continuous learner engagement.

Participants 1, 4, 7, 10, 14, and 15 also described experiences involving “limited devices,” “lack of gadgets,” “few tablets,” “one projector,” and the absence of a “computer laboratory.” These accounts reflected how inadequate technological equipment and limited institutional facilities restricted the effective implementation of digital instruction in Madrasa education. The shortage of digital devices and the lack of computer laboratories reduced learners’ opportunities to participate fully in technology-based classroom activities.

The participants’ narratives further suggested that digital responsiveness in Madrasa education was influenced not only by teachers’ competence and willingness to integrate technology, but also by external and systemic conditions within the school environment. Although teachers showed motivation to use digital tools in instruction, limited infrastructure and insufficient technological resources made consistent implementation difficult. These experiences pointed to digital integration as a structural and institutional concern rather than merely an individual challenge among teachers.

The participants also described inequalities in learners’ access to technology. Some students had access to gadgets and internet connectivity that allowed them to participate more actively in digital learning activities,

while others had limited opportunities because of insufficient access to devices and online resources. These conditions affected students' participation and created unequal learning opportunities within the classroom.

Power-related concerns were also identified as barriers to digital instruction. Participants 2, 9, and 12 mentioned experiencing "brownouts" and "power interruptions" during instructional activities. These experiences showed how unstable electricity supply disrupted technology-dependent instruction, interrupted presentations, and prevented the continuous use of digital learning devices. As a result, classroom activities were delayed and instructional delivery became inconsistent.

These experiences are supported by Diaz et al. (2024), who identified poor infrastructure and limited access to ICT tools as major barriers affecting digital integration in education. Subade (2024) also emphasized the importance of stable technological infrastructure, including reliable internet connectivity and sufficient digital facilities, in supporting effective digital transformation in schools.

The Unified Theory of Acceptance and Use of Technology (UTAUT) further supports these findings by explaining that facilitating conditions, such as infrastructure and institutional support, are important factors influencing technology adoption and use. In situations where these conditions are limited or unavailable, the integration of digital tools becomes difficult even when teachers demonstrate willingness and interest in using technology for instruction.

Sezgin and Firat (2024) also discussed the effects of the digital divide on educational inequality, emphasizing that unequal access to digital resources contributes to differences in student participation and learning outcomes. This supports the present findings, which showed that limitations in infrastructure and technological access affected students' opportunities to participate fully in digital learning activities within the Madrasa setting.

The participants' experiences highlighted the importance of strengthening technological infrastructure in supporting digital responsiveness in Madrasa education. Stable internet connectivity, reliable electricity supply, and sufficient digital equipment such as computers, tablets, and projectors were described as necessary conditions for sustaining technology-supported instruction. In the absence of these resources, teachers experienced difficulty implementing digital learning activities consistently and effectively.

The narratives also pointed to the need for schools to reduce digital inequalities among learners by improving access to shared devices and institutional learning resources. School administrators were viewed as having an important role in coordinating with government agencies, stakeholders, and community partners to obtain financial and technical support for ICT development in Madrasa institutions. These efforts could help strengthen access to digital learning opportunities among both teachers and learners.

The participants' accounts further suggested that digital integration should not be treated solely as an individual responsibility of teachers. Even teachers who were motivated and capable of using digital tools encountered difficulties when institutional support and technological infrastructure were limited. These experiences reflected the importance of system-wide support, including infrastructure development, resource allocation, and policy support, in sustaining inclusive and effective digital responsiveness in Madrasa education.

Theme 3: Balanced and Guided Digital Integration

The third theme highlighted the participants' experiences of balancing technology integration with the religious, cultural, and pedagogical foundations of Madrasa education. The participants described digital responsiveness as a careful and guided process in which technology was used to support instruction without compromising Islamic values, moral formation, and traditional teaching practices. Rather than viewing digital tools as replacements for conventional instruction, teachers treated technology as a supplementary resource that could enhance learning while preserving the spiritual and ethical goals of Islamic education.

The participants' narratives revealed that the integration of digital technologies in Madrasa education was approached with caution and clear moral consideration. Teachers emphasized the importance of ensuring that digital tools remained aligned with the cultural and religious identity of the Madrasa learning environment. In this context, technology integration was not solely based on innovation or convenience, but also on its appropriateness within Islamic educational practices and values.

Participants 7, 11, 14, and 15 emphasized the importance of using technology "without sacrificing manners and morals," "respecting Islamic values," and "without losing religious focus." These statements reflected the participants' belief that digital tools could serve as meaningful instructional resources when used in ways that preserved Islamic teachings and ethical principles. The participants explained that technology integration should support learning while ensuring that students remained guided by the moral and spiritual foundations of Madrasa education.

The participants also described deliberate and thoughtful efforts in integrating digital technologies into classroom instruction. Rather than replacing traditional teaching approaches, teachers used digital tools to strengthen instructional delivery while still maintaining practices rooted in Islamic pedagogy. Their experiences showed that the use of technology in Madrasa education involved continuous consideration of moral development, cultural identity, and religious values alongside the demands of modern instruction.

The participants also described the importance of flexibility and adaptability in sustaining digital instruction within resource-limited environments. In many instances, teachers relied on available and accessible technologies such as mobile phones, basic applications, and online materials to continue supporting student learning. These experiences reflected how digital integration in Madrasa education was shaped not only by instructional goals but also by contextual limitations and the need to preserve the integrity of Islamic education.

Participants 12 and 13 described being "flexible and creative in using technology," "using phones, basic applications, and online materials," and adapting instruction despite limited digital resources. These accounts showed how Madrasa teachers maximized available technological tools to maintain instructional continuity and support student learning even in low-resource settings. The participants' experiences reflected creativity and adaptability in responding to technological limitations while continuing to facilitate learning activities.

The narratives further suggested that digital responsiveness in Madrasa education involved a balanced and guided process of technology integration. Teachers acted as mediators who carefully considered when and how digital tools could support instruction without weakening religious and moral foundations. In this process, technology use was approached not only as a technical concern but also as a pedagogical and ethical responsibility within Islamic education.

The participants also emphasized that traditional instructional approaches such as recitation, memorization, and direct teaching remained central in Madrasa education. Digital resources were used primarily as supplementary tools intended to strengthen instruction rather than replace established teaching practices. These experiences reflected a value-sensitive approach to technology integration in which innovation was accepted when it remained aligned with the objectives and principles of Islamic education.

Participants 5, 10, and 15 further emphasized the importance of "supporting Islamic learning," "staying true to Islamic values," and "adapting teaching methods" in the integration of technology. These responses suggested that digital tools were selected and used not simply for modernization, but for their capacity to support instruction while preserving the spiritual, cultural, and educational mission of Madrasa institutions. The participants viewed technology as appropriate only when it contributed positively to learning without weakening the moral and religious foundations of Islamic education.

These experiences support the study of Abubakari (2021), which explained that the acceptance of ICT in Madrasa education depends on its compatibility with Islamic values. Hastutik (2024) also emphasized that the use of digital tools in Madrasas should strengthen, rather than contradict, the moral and religious development of learners. The present findings reflected similar experiences, where teachers carefully evaluated how technology could be integrated without compromising the values and traditions embedded in Madrasa education.

The findings also aligned with Social Constructivist Theory, which emphasizes the importance of teacher guidance and meaningful interaction in the learning process. In this context, Madrasa teachers used digital tools as forms of instructional support that guided learners toward appropriate and meaningful use of technology. The Technological Pedagogical Content Knowledge (TPACK) framework also reinforced the importance of balancing content, pedagogy, and technology in effective instruction. Within Madrasa education, this balance extended beyond instructional effectiveness and included cultural and religious appropriateness in the use of digital technologies.

The participants' narratives suggested that digital integration in Madrasa education should remain culturally responsive and grounded in Islamic educational principles. These experiences pointed to the importance of school policies and instructional practices that support technology integration while preserving traditional pedagogical approaches and religious values. Teachers also emphasized the need for guidance in the proper use of digital tools and for professional development programs that focus on value-based technology integration within Islamic education.

The participants further described the importance of flexibility and contextual responsiveness in technology integration, particularly in situations where resources and technological access varied across schools and classrooms. Their experiences showed that effective digital integration required not only innovation, but also institutional guidance, appropriate resources, and sustained support systems that would help teachers balance modern instructional practices with the traditions of Madrasa education.

The experiences of the participants showed that digital responsiveness in Madrasa education was grounded in a balanced and guided approach to technology integration. Teachers viewed digital tools as instructional supports that could enhance teaching and learning while remaining consistent with the moral, cultural, and religious foundations of Islamic education. Rather than replacing traditional pedagogical practices, technology was carefully integrated to complement established methods such as recitation, memorization, and direct instruction.

The participants' narratives further revealed that effective digital integration in Madrasa education depended not only on innovation and access to technology, but also on the ability of teachers and institutions to preserve Islamic values, provide appropriate guidance, and maintain the educational identity of the Madrasa learning environment.

Theme 4: Digital Training Gaps and Capacity Development

The fourth theme focused on the digital training gaps and capacity-building needs experienced by Madrasa teachers in relation to digital responsiveness. The participants described limited opportunities for sustained professional development, insufficient technical support, and inadequate institutional assistance in strengthening their digital competencies. Although teachers recognized the importance of digital tools in supporting the teaching-learning process, many expressed that their current level of training was not enough to support continuous and effective technology integration in classroom instruction.

The participants also described how limited training opportunities affected their confidence and competence in using digital technologies for instruction. Their experiences revealed that most training activities focused only on introductory or basic digital skills, with limited opportunities for long-term mentoring, guided practice, and technical assistance. In addition, inadequate institutional support and limited access to technological resources

reduced teachers' ability to continuously develop and apply digital skills within the context of Madrasa education.

Participants 2, 11, 12, and 13 described training opportunities as "too short," "short seminars," "short workshops," and conducted only "twice." These accounts reflected the participants' perception that existing professional development activities were insufficient and limited in scope. Teachers viewed one-time training sessions as inadequate for developing long-term competence and mastery in integrating digital tools into classroom instruction.

The participants' narratives further suggested that Madrasa teachers were not regularly exposed to systematic and comprehensive training programs related to digital technology integration. Most professional development activities focused primarily on basic introductory skills, which were insufficient to sustain long-term digital integration practices in teaching. The lack of continuous mentoring and technical support also emerged as an important concern, as teachers considered these forms of assistance necessary in strengthening confidence and competence in the use of digital tools for instruction.

The participants also explained that, because of limited formal training opportunities, many teachers relied on self-directed learning and personal experience to develop their digital skills. These experiences resulted in differences in digital competence among teachers. Some participants were able to adapt to new applications and technological tools independently, while others continued to experience difficulty even with basic technological functions. The participants further described a mismatch between training opportunities and the actual resources available in schools, as some teachers received training but were unable to apply what they learned because of the absence of devices, internet access, and instructional materials within the school environment.

Participants 1, 5, 10, and 11 expressed that they had received only "basic training" and "basic software training," while also emphasizing the need for "more contextualized training focused on Madrasa education." Participant 4 additionally mentioned "exploring applications such as AI," which reflected teachers' interest in expanding their digital competencies beyond introductory computer literacy. These responses suggested that teachers had already moved beyond basic awareness of technology and were seeking more specialized, practical, and context-responsive professional development programs related to digital integration in Madrasa education.

The participants' narratives further showed that digital responsiveness involved more than teachers' willingness to use technology in instruction. Their experiences highlighted the importance of the quality, continuity, and relevance of professional development opportunities in strengthening digital integration practices. Short-term and limited training sessions provided few opportunities for teachers to develop practical technological skills and apply digital tools effectively within actual classroom instruction.

Participants 3, 14, and 15 further emphasized the need for "workshops, mentoring, and technical support" as well as "continuous mentoring" in strengthening their digital competencies. These accounts reflected the participants' preference for sustained guidance and professional assistance rather than isolated seminar-based training activities. The participants explained that continuous mentoring helped improve confidence, strengthen technological competence, and support the actual implementation of digital tools within classroom instruction.

The participants' experiences also showed that sustainable digital integration depended greatly on long-term institutional support and collaborative professional learning opportunities. Continuous mentoring provided teachers with opportunities to receive technical assistance, share instructional experiences, address classroom challenges, and gradually improve their teaching practices through guided support. These narratives highlighted the importance of mentoring and coaching systems as significant components of digital capacity development within Madrasa education.

Participants 8 and 4 also revealed that they relied on "personal experience" and "self-exploration of applications such as AI" because of the absence of formal institutional training opportunities. These accounts reflected how teachers compensated for limited professional support through independent learning and personal exploration of

digital resources. The participants demonstrated initiative and adaptability in trying to strengthen their digital competencies despite limited institutional opportunities for professional development.

At the same time, the participants' experiences showed that reliance on self-directed learning contributed to differences in digital competence among teachers. Some individuals were able to expand their technological skills independently, while others continued to experience difficulty with basic technological applications. The absence of structured and sustained institutional training therefore contributed to unequal levels of digital preparedness among Madrasa teachers.

These experiences support the study of Akram et al. (2021), which emphasized that Technological Pedagogical Content Knowledge (TPACK) is essential for effective technology integration and cannot be fully developed through short-term training alone. Hamzah et al. (2021) also highlighted the importance of continuous professional development and digital leadership in strengthening teachers' confidence and competence in using digital tools.

Diaz et al. (2024) further explained that meaningful digital competence develops through sustained and continuous training rather than isolated workshops. The Unified Theory of Acceptance and Use of Technology (UTAUT) likewise emphasizes that facilitating conditions, such as training opportunities and institutional support, significantly influence the adoption and effective use of technology.

The participants' narratives further highlighted the need for continuous, hands-on, and context-responsive professional development programs in Madrasa education. Teachers emphasized the importance of sustained mentoring, technical assistance, and training opportunities that addressed both technological skills and actual classroom realities. Their experiences also pointed to the importance of creating mentoring and support networks that could provide ongoing guidance and help teachers bridge the gap between theoretical knowledge and practical application of digital skills.

The participants also stressed that training opportunities would remain limited in impact without adequate technological resources and institutional support. Access to devices, internet connectivity, instructional materials, and technical assistance remained necessary in helping teachers apply what they learned during professional development activities. The narratives further pointed to the importance of collaboration among schools, government agencies, and stakeholders in strengthening digital capacity development through financial, material, and policy support.

In general, the participants' experiences showed that professional development was viewed as a continuing process necessary for sustaining digital responsiveness in Madrasa education. Digital integration was not perceived as dependent solely on teachers' willingness to use technology, but also on the availability of sustained institutional support, contextualized training opportunities, mentoring systems, and adequate technological resources. The narratives further revealed that meaningful digital responsiveness in Madrasa education required long-term capacity development that strengthened teachers' confidence, instructional competence, and ability to integrate technology in ways that remained responsive to the realities and values of Islamic education.

Proposed Training Plan for the Enhancement of Digital Responsiveness Among Madrasa Teachers

Objective

The main objective of the training plan is to improve the digital responsiveness of Madrasa teachers by developing their technological, pedagogical, and contextual skills in using digital tools while maintaining Islamic values and traditional teaching methods.

The proposed training program should be implemented in stages, beginning with Digital Literacy, followed by Pedagogical Digital Literacy, and culminating in Contextual Application within the context of Madrasa Education. Ongoing mentoring and coaching should also be provided to promote continuous professional development and strengthen the application of digital skills in teaching. Active partnerships with educational

institutions and relevant government agencies are likewise crucial in providing resources, infrastructure, and sustainability for the program.

Table 1

Proposed Training Plan for the Enhancement of Digital Responsiveness Among Madrasa Teachers

Training Component	Objectives	Activities	Participants	Duration	Expected Output
Basic Digital Literacy Enhancement	To strengthen teachers' foundational ICT skills	Hands-on workshops on basic tools (PowerPoint, video use, online platforms)	Madrasa Teachers	1 day	Improved basic ICT skills
TPACK-Based Digital Integration Training	To integrate technology with pedagogy and content	Demonstration teaching, lesson planning with digital tools	Madrasa Teachers	1 day	Digitally integrated lesson plans
Contextualized Madrasa Digital Teaching	To align digital tools with Islamic values	Workshops on value-based digital integration	Madrasa Teachers	1 day	Culturally aligned digital lessons
Hands-on Application and Coaching	To provide practical experience	Practice teaching, peer coaching, mentoring sessions	Madrasa Teachers	Continuous (monthly)	Improved teaching performance
Infrastructure and Resource Utilization Training	To maximize available resources	Training on using limited tools (phones, offline apps)	Madrasa Teachers	1 day	Efficient use of available tools
Monitoring and Evaluation	To assess effectiveness of training	Classroom observation, feedback sessions	School Heads / Admin	Quarterly	Improved digital responsiveness

Through the implementation of this training program, the digital competence of Madrasa teachers is expected to improve further, strengthen the use of digital tools in teaching, enhance student engagement and learning outcomes, and reinforce the alignment of digital practices with Islamic values. Ultimately, this may pave the way for more sustainable, context-responsive, and effective digital teaching practices within the Madrasa sector.

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