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Digital Technology Integration in Islamic Religious Education

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ABSTRACT: *This study aims to examine the implementation of digital technology integration in the Islamic Religious Education learning process at the junior high school level. The method used is descriptive qualitative with a case study approach. Data were collected through structured interviews with two Islamic Religious Education teachers and six students in grades VII–IX, passive participant observation, and learning documentation. Data analysis was carried out through the stages of data reduction, data presentation, and conclusion. Data validity was strengthened through the use of triangulation techniques. The results show that digital technology integration is implemented systematically from the planning stage to the evaluation of learning. The learning process utilises various digital platforms, including Microsoft Word for assignment management, Google Classroom as a learning management system, e-modules or digital books as learning resources, and evaluative and interactive applications such as Wayground or Quizizz, Google Forms, and Computer-Based Test (CBT). The process of integrating technology and appropriate pedagogical strategies improves the quality of Islamic religious education. The technology-integrated learning has received a positive response from students. This is evident in their enthusiasm, active involvement, and ease in understanding the learning material. However, the implementation of digital technology integration still faces several obstacles, including teachers' limited time in developing digital learning content and students' misuse of technology during the learning process. Theoretically, this research contributes to strengthening the understanding of the practice of integrating digital technology into Islamic Religious Education learning in the junior high school context. Practically, the findings imply the need for more structured digital content planning and effective digital classroom management to ensure that technology utilisation aligns with learning objectives*.

Penelitian ini bertujuan mengkaji implementasi integrasi teknologi digital dalam proses pembelajaran Pendidikan Agama Islam pada jenjang sekolah menengah pertama. Metode yang digunakan adalah kualitatif deskriptif dengan pendekatan studi kasus. Data dikumpulkan melalui wawancara terstruktur dengan dua guru Pendidikan Agama Islam dan enam siswa kelas VII–IX, observasi partisipasi pasif, serta dokumentasi pembelajaran. Analisis data dilakukan melalui tahapan reduksi data, penyajian data, dan penarikan kesimpulan. Keabsahan data diperkuat melalui penggunaan teknik triangulasi. Hasil penelitian menunjukkan bahwa integrasi teknologi digital diterapkan secara sistematis mulai dari tahap perencanaan hingga evaluasi pembelajaran. Proses pembelajaran memanfaatkan berbagai platform digital, antara lain *Microsoft Word* untuk pengelolaan tugas, *Google Classroom* sebagai sistem manajemen pembelajaran, e-modul atau buku digital sebagai sumber belajar, serta aplikasi evaluatif dan interaktif seperti *Wayground/Quizizz, Google Forms,* dan *Computer-Based Test* (CBT). Proses

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integrasi teknologi dan strategi pedagogis yang tepat memberikan peningkatan pada kualitas pendidikan agama Islam. Adanya pembelajaran terintegrasi teknologi mendapat respons positif dari peserta didik. Hal tersebut terlihat dari antusiasme, keterlibatan aktif, dan kemudahan siswa dalam memahami materi pembelajaran. Namun demikian, implementasi integrasi teknologi digital masih menghadapi beberapa kendala, antara lain keterbatasan waktu guru dalam mengembangkan konten pembelajaran digital serta penyalahgunaan teknologi oleh peserta didik selama proses pembelajaran. Secara teoretis, penelitian ini berkontribusi dalam memperkuat pemahaman mengenai praktik integrasi teknologi digital dalam pembelajaran Pendidikan Agama Islam pada konteks sekolah menengah pertama. Secara praktis, temuan penelitian ini mengimplikasikan perlunya perencanaan konten digital yang lebih terstruktur serta pengelolaan kelas digital yang efektif agar pemanfaatan teknologi dapat berjalan selaras dengan tujuan pembelajaran.

Keywords: *Integration, Digital Technology, Islamic Religious Education, SAMR, TPACK.*

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I. INTRODUCTION

The utilisation of digital technology today has become an integral part of modern life and has influenced the practice of education (Mintasih et al., 2024). Education plays an important role in increasing the quality of life because, through the learning process, individuals can develop their potential and capacity. The presence of various digital-based learning platforms shows that technology has become part of the educational activity. This provides participants with greater access to information and allows teachers to design more effective learning strategies aligned with the learning objectives they aim to achieve.

Central Statistics Agency (*Badan Pusat Statistik*) data show an increasing trend in internet usage in Indonesia over the last two years. The proportion of the population using the internet was recorded at 69.21% in 2023 and increased to 72.78% in 2024 (BPS, 2025). In terms of age, 39.71% of early childhood have used mobile phones and 35.57% have accessed the internet. In comparison, 18.98% of digital technology users in Indonesia were born between 1980 and 2022 (Komdigi, 2025). This data shows that Indonesians have been using and utilising digital technology from an early age. This condition emphasises that the current generation of Indonesians is growing up in a digitally embedded environment, thereby changing their learning patterns, information-seeking practices, and social interactions.

The utilisation of digital technology has pushed for change in fundamental practice education in Indonesia, including in learning Islamic education (Hirzulloh & Annadhif, 2024). This change is realised through the integration of digital technology as part of the learning methods and media in Islamic religious activities during the teaching process (Hakim & Al-Masumah, 2020). This change also marks a shift in how teachers use media and learning strategies from a conventional pattern to a more adaptive approach to developing technology.

The traditional learning approach that still positions teachers as the centre of delivering information is considered not sufficient in accordance with the needs of the learning moment, especially when digital technology is still not utilised optimally in teaching and

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learning activities (Imamuddin et al., 2022). Several studies show that Islamic education, which is of a stiff and repetitive nature, tends to limit the participation of active students (Munadirin et al., 2023). Learning patterns are in line with the demands of the digital era, emphasising the ability for virtual collaboration and processing information quickly in the context of Society 4.0 (Hakim & Al-Masumah, 2020). On the other hand, the application of participant-oriented learning educates, increases involvement in learning, and helps participants understand concepts, as well as the ability to internalise religious values in daily life (Putri et al., 2025).

The integration of technology in learning has a direct impact on student motivation. This is important because one of the main factors that influences student engagement and success in the learning process is student motivation. Studies show that the learning media used by teachers play a role in motivating students during the learning process (Widiani & Istiqomah, 2021). The use of conventional learning media in Islamic education tends to be less engaging. It fails to educate students, contributing to their limited understanding of the material, mainly due to the lack of variety in the media used (Walid et al., 2022). Students who grow up in a digital environment with high visual and auditory exposure tend to be less interested in conventional learning (Pasaribu et al., 2025). As a result, learning objectives are not fully achieved due to a lack of motivation, engagement, and active participation in education.

Islamic Education plays an important role in the national education system, particularly in shaping participants' character and personality by strengthening moral values and spiritual understanding (Sholeh et al., 2024). Along with rapid development in digital technology, education demands not only the formation of character but also the development of 21st-century abilities, such as literacy, numeracy, critical thinking, communication, and collaboration. Education is expected to produce creative, independent, and adaptive graduates to the dynamic development of the times (Zainuddin et al., 2025). Therefore, it is necessary to innovate integration technology in Islamic education learning so that participants can educate themselves on global competitiveness while still adhering to the values of religion and moral glory.

Various studies show that the integration of digital technology in Islamic Religious Education learning has received serious attention, but still leaves significant conceptual and empirical gaps. Research conducted by Suraijiah et al. (2023) on the impact of using media technology in Islamic Religious Education learning in the context of an independent curriculum in Islamic universities, with a focus on the perceptions of students and lecturers. This study stopped at the level of the general impact of technology as a learning support medium, without examining in depth how this integration affects pedagogical transformation in the classroom (Suraijiah et al., 2023). Furthermore, research conducted by Hidayah et al. (2026) using the TPACK framework identified the obstacles that teachers in the Greater Solo area face in integrating technology into Indonesian language learning. Although the analysis of teacher competence was carried out systematically, this study did not address the Islamic Religious Education context, did not involve students, and did not link technological competence to changes in learning level (Hidayah et al., 2026).

Research conducted by Hirzulloh & Annadhif (2024) conducted a study that conceptualised Islamic education in the context of the Industrial Revolution 4.0, emphasising the urgency of adapting to digital technology. However, their study is normative-theoretical, lacking empirical data, a clear research subject, and an operational pedagogical analysis framework (Hirzulloh & Annadhif, 2024). Research conducted by Mintasih et al. (2024) examined the use of digital technology, the digital competence of

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Islamic Education teachers, and its impact on learning effectiveness using the TPACK and TAM frameworks. Nevertheless, this research primarily addresses technology at the level of acceptance and use, without evaluating the depth of technology integration in transforming teaching and learning processes, nor examining micro-level classroom practices (Mintasih et al., 2024). Given these gaps, there is a lack of empirical research investigating the integration of digital technology in Islamic education learning by combining teacher competence analysis (TPACK) with the level of pedagogical transformation (SAMR), particularly at the junior high school level and involving both teachers and students directly. Therefore, this study focuses on analysing the integration of digital technology in Islamic Religious Education learning through the TPACK and SAMR frameworks to reveal not only teachers' ability to integrate technology but also the extent to which technology transforms actual classroom practices.

The novelty of this research lies in its analytical approach, which simultaneously integrates the TPACK and SAMR frameworks to examine the integration of digital technology in Islamic Religious Education instruction at the junior high school level. Unlike previous studies that typically focus on mapping teacher competencies, technology acceptance levels, or the general impact of digital media use, this research empirically investigates the relationship between teachers' technological-pedagogical competencies and the degree of pedagogical transformation occurring in classroom practice. By involving both teachers and students as research subjects, this study not only assesses teachers' ability in using technology but also examines whether integration occurs at the substitution and augmentation levels or has reached the modification and redefinition stages of learning. Furthermore, the research examines students' cognitive and affective responses during technology-integrated learning processes. The focus on the micro-context of Islamic Religious Education instruction in junior high schools provides a contextually and practically relevant contribution, addressing a research gap that has predominantly centred on senior high schools, higher education, or literature review. Thus, this study offers a new perspective on digital technology integration that is competency-based and oriented toward the quality of actual transformation in Islamic Religious Education learning.

Studies on the integration of digital technology into Islamic Religious Education must be grounded in a robust theoretical framework, ensuring the resulting analysis has a clear scientific basis and is academically accountable. Theoretically, the integration of digital technology can be explained through the Technological Pedagogical Content Knowledge (TPACK) theory developed by Mishra and Koehler, which asserts that the success of technology-based learning is greatly influenced by the teacher's ability to integrate technological knowledge, pedagogy, and learning content comprehensively (Sofwan et al., 2024). In addition, the level of technology application in learning can be analysed using the substitution, augmentation, modification, and redefinition (SAMR) model developed by Puentedura, which outlines the stages of technology utilisation, ranging from the substitution function of conventional media to the transformation of learning through the creation of new activities that cannot be done without the support of digital technology (Aziroh et al., 2025). Thus, the application of the TPACK theory and the SAMR model in this study provides a structured and focused conceptual foundation for examining the integration of digital technology in Islamic Religious Education learning to align with the demands of education in the digital era.

Conceptually, integrating digital technology into Islamic education learning is expected to foster transformative learning by applying the TPACK framework and the SAMR model's stages of development (Aziroh et al., 2025). Through TPACK, teachers are expected to integrate technological knowledge, pedagogy, and Islamic content holistically. At the same

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time, the SAMR model emphasises that technology does not merely serve as a substitute for conventional media but can create new learning activities that improve the quality of students' learning experiences (Sofwan et al., 2024). However, research indicates that the implementation of technology in Islamic Religious Education remains dominated by online learning platforms and digital presentation media that are substitutionary in nature, thereby not fully encouraging pedagogical and substantive transformations in Islamic material. This condition shows a gap between the demands for conceptual technology integration and implementation practices in the field.

Based on these conditions, this study aims to examine in depth the implementation of digital technology integration in Islamic Religious Education learning at SMP Muhammadiyah Al-Kautsar Program Khusus Kartasura. This research is important for understanding how teachers integrate technology, pedagogy, and Islamic learning content into learning practices, as well as for identifying the extent of learning technology use across the stages of the SAMR model. Thus, the results of this study are expected to provide an empirical description of the practice of digital technology integration in Islamic Religious Education learning and to serve as a basis for developing Islamic Religious Education learning that is relevant to the demands of the digital era.

II. METHOD

This study was designed using a descriptive qualitative method with a case study approach. The case study approach was chosen for its ability to provide an in-depth understanding of a phenomenon in a specific context, such as an educational program, institution, or social group, thereby yielding rich, contextually relevant data (Creswell, 2023). Through this approach, the study sought to examine in detail the dynamics of program implementation in an institutional environment. The study focused on the implementation of a digital technology integration program at SMP Muhammadiyah Al-Kautsar Program Khusus Kartasura. This school consistently utilises developments in information and communication technology in its learning activities.

The research was conducted at SMP Muhammadiyah Al-Kautsar Program Khusus Kartasura, using three data collection techniques: structured interviews, passive participatory observation, and documentation. Structured interviews were used to gather in-depth information about the practice of digital technology integration in Islamic Religious Education. The research informants consisted of two Islamic Religious Education teachers and six students from grades VII to IX. Before the interview process, the researcher compiled interview guidelines in the form of a list of advance-designed questions. These questions were presented uniformly to all informants, taking into account their relevance to the research data requirements (Sugiyono, 2021).

Passive participatory observation was conducted from September 22 to December 12, 2025, at the research location. The observation activities focused on the use of integrated digital technology in Islamic Religious Education learning. In addition to observation, the researcher also analysed various supporting documents related to the learning process. These documents included syllabi/learning objectives, lesson plans/teaching modules, academic calendars, annual and semester programs, learning journals, student attendance lists, grade lists, student assignment portfolios, evaluation instruments, reflection notes, and photos and videos of the learning process. All of these documents were used as supporting evidence to confirm and reinforce the findings from interviews and observations (Sugiyono, 2021).

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After the data was successfully collected, the researchers conducted data analysis. At this stage, the data was first reduced and then presented in a structured form. The researchers then concluded with a final step (Sahir, 2022). The researchers assessed the validity of the data using triangulation techniques. Through source triangulation, the researchers assessed the validity of the data by comparing findings from multiple sources, namely interviews and observations. In addition, technique triangulation and time triangulation were used in this study to test the validity of the data (Sugiyono, 2021).

III. RESULT AND DISCUSSION

SAMR Model in Technology-Integrated Learning Processes

Digital technological advancements have progressively reshaped educational environments, extending their influence to the implementation of Islamic Religious Education. These technological developments have driven a shift in the media and learning methods educators use to deliver learning materials. With this shift in media and learning techniques, there is a need to integrate current digital technologies into Islamic Religious Education. For this reason, the process of integrating digital technology demands a structured approach that serves as a reference framework for implementing technology within Islamic Religious Education.

The SAMR model is a framework for integrating digital technology into the learning process proposed by Dr. Ruben Puentedura. The SAMR model comprises four stages: Substitution, Augmentation, Modification, and Redefinition (Puentedura, 2020). Dr Ruben Puentedura proposes the SAMR model as a hierarchical framework for measuring and reflecting on the use of technology in the learning process (Blundell et al., 2022). In this context, the SAMR model serves as a framework for implementing digital technology integration programs, outlining how technology is utilised in the learning process.

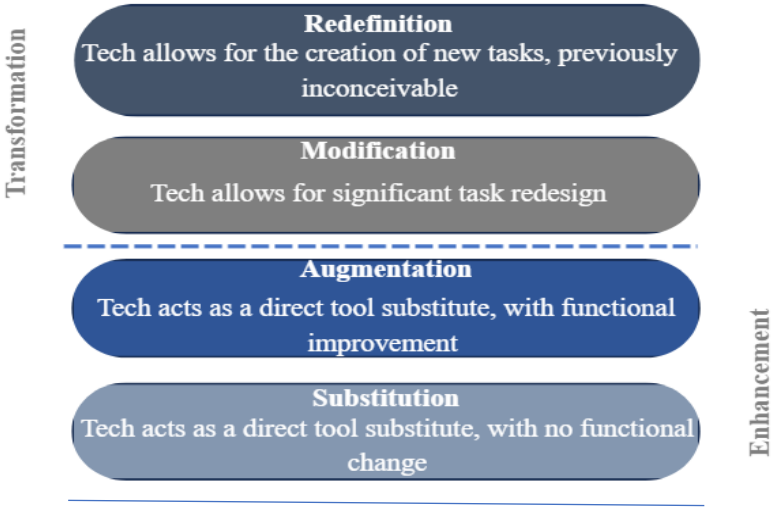

Figure 1. *SAMR hierarchy*
(Source: Puentedura, 2020)

The first stage of the SAMR model is the substitution stage. Substitution is the replacement of conventional teaching media with learning media that use technological devices, without altering the function of the existing learning media (Alfiana et al., 2022). In this stage, students use Microsoft Word to take notes and create digital summaries of the *Qada* and *Qadar* material. Additionally, the use of Microsoft Word replaces books as a medium in the learning process. The use of Microsoft Word aligns with the substitution stage in the

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SAMR technology integration model. At the substitution stage, the use of technology is limited to replacing conventional learning tools with modern ones, so that previously used tools are converted to digital form without any fundamental changes to the learning process (Setiyawati et al., 2023).

The augmentation stage is the second stage in the series of integrating digital technology into the learning process. This stage involves replacing conventional learning media with those that use technological devices, thereby enhancing the functions of the previous media (Alfiana et al., 2022). At this stage, digital books or ebooks have become one of the media used in the Islamic Religious Education learning process. These modules or digital books not only present text-based teaching materials but also include videos, quizzes, and exercises that students can access online. In addition, these modules/digital books include practical assignments, such as making a video of a prayer practice, which students complete. In this case, the ebook/digital book learning media replaces conventional learning media with learning media that utilise (Sunarti et al., 2024).

Furthermore, the modification stage is the third stage in the SAMR framework, used to integrate digital technology into the learning process. At this stage of modification, the role of technology is no longer merely a substitute for media. Technology serves to transform the form of tasks and learning functions that were previously conventional (Alfiana et al., 2022). The presence of technology at this stage enables significant changes in the design and implementation of learning tasks, both in the process and in the expected results. In practice, Google Classroom serves as a Learning Management System (LMS) that provides students with access to teaching materials. Students then use the Canva application as a collaborative platform to compile concept maps on one of the Islamic Religious Education materials: elements of Islamic cultural history. Through collaboratively working on online documents, students can provide each other with direct feedback (Sulaiman et al., 2025). In this context, the use of digital applications is a major component of the modification process, as technology fundamentally changes the design of tasks, interaction patterns, and learning experiences within the SAMR model of digital technology integration.

The redefinition stage is the fourth stage in the SAMR framework for integrating digital technology into the learning process. This stage involves the creation of new tasks that did not exist before, utilising technology devices (Blundell et al., 2022). In this case, students use the YouTube platform to collect assignments from teachers, namely, videos on how to pray. This demonstrates how technology can reshape learning experiences by expanding students' access to knowledge and supporting the development of digital competencies, self-learning abilities, and media literacy skills.

Table 1. Analysis of the SAMR Model in Islamic Religious Education

Level	Function	Technology Utilisation
Substitution	Improvement/ Enhancement	Students use Microsoft Word to summarise assignments given by Islamic Religious Education teachers.
Augmentation	Improvement/ Enhancement	E-modules/digital books containing materials, videos, and quizzes as a replacement for conventional books.
Modification	Transformation	Google Classroom as a Learning Management System. Canva is a collaborative medium for completing assignments.

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Redefinition	Transformation	YouTube is a medium for collecting group assignments that can be accessed and viewed by all parties.

At the substitution and augmentation stages, the use of technology in the learning process falls into the enhancement or performance improvement category (Blundell et al., 2022). Thus, the substitution and augmentation stages emphasise replacing conventional learning media with technology-based media, either to replace them or to strengthen their functions. Consistent with previous studies, enhancing the functionality of learning media through interactive digital technology can increase students' motivation to learn and persistence in completing tasks (Widiani & Istiqomah, 2021). In this case, these two stages are the first steps toward realising learning integrated with digital technology.

The modification and redefinition stages in the SAMR model are included in the dimension of technological transformation in learning (Aziroh et al., 2025). The modification stage in the process of technological transformation in learning is seen as one of the strategies for realising sustainable and adaptive education (Putra et al., 2025). At this stage, learning activities are redesigned through technology in ways that allow flexibility, learner autonomy, and contextual adaptation, which are key characteristics of adaptive learning. This aligns with previous research, which indicates that adaptive learning can encourage students to develop learning independence, increase active involvement in the learning process, and flexibly adjust their learning strategies to their individual needs, characteristics, and learning pace (Suraijiah et al., 2023). Furthermore, research by Setiyawati et al. (2023) shows that using the SAMR model enhances skills and improves students' critical thinking.

TPACK Model in Technology-Integrated Learning Processes

As learning facilitators, teachers have a professional responsibility to design, manage, and facilitate learning activities that enable students to engage in the learning process actively. In the context of learning integrated with digital technology, the TPACK concept provides a theoretical foundation for understanding teachers' knowledge in effectively and purposefully implementing technology-based teaching and learning processes (Ciptaningrum et al., 2021). The TPACK concept was developed as an extension of the previously known Pedagogical Content Knowledge, placing technology as an integral part of pedagogical practice. Technology is not placed as a separate, additional element. (Aziroh et al., 2025) emphasise that mastery of technology, pedagogy, and content alone is insufficient to produce effective learning, as all three must be understood and applied in an integrated manner.

Therefore, learning that optimally utilises technology can be realised only when the elements of technology, pedagogy, and content intersect and support each other in both planning and implementation. On this basis, the TPACK concept consists of three core components: content knowledge, pedagogical knowledge, and technological knowledge. These three components then interact to form four derivative components: pedagogical content knowledge, technological content knowledge, technological pedagogical knowledge, and technological pedagogical content knowledge (Sofwan et al., 2024).

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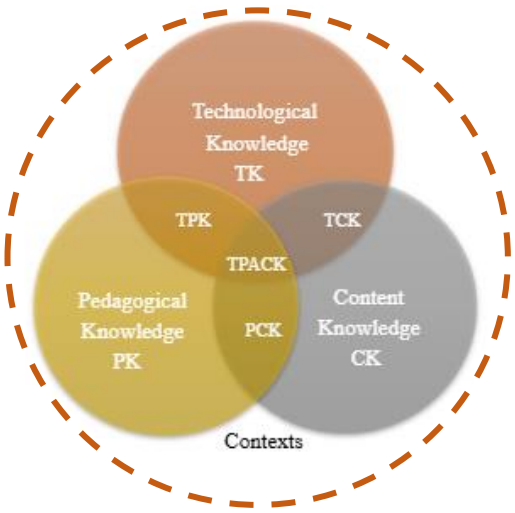

Figure 2. *TPACK framework*
(Source: Mishra & Koehler, 2006)

The relationship between teachers' ability to master the teaching material to be delivered as a form of Content Knowledge, teachers' knowledge of strategies and ways to convey understanding to students effectively as a form of Pedagogical Knowledge, and teachers' ability to operate and utilise learning technology as Technological Knowledge, is the main foundation that forms the TPACK concept (Saad et al., 2013). These three forms of knowledge do not stand alone. They interact and reinforce each other through learning practices integrated with technology. This interaction then gives rise to new areas of operational overlap, namely Pedagogical Content Knowledge, Technological Content Knowledge, and Technological Pedagogical Knowledge (Sofwan et al., 2024).

In the learning system, three main process standards are the teachers' responsibility: planning, implementation, and assessment. The learning planning process involves formulating learning achievement targets, strategies to achieve them, and methods for evaluating learning achievement (Permendikbudristek, 2022). The preparation of learning plans emphasises the principles of flexibility, clarity, and simplicity outlined in a document. The results of the author's interviews with Islamic Religious Education teachers show that, at the planning stage, teachers prepare digital learning planning documents in Microsoft Word. These documents are designed as comprehensive learning implementation plans and include interactive e-modules, learning videos, and the use of digital platforms such as YouTube and Quizizz. This aligns with previous research, which found that Quizizz and Kahoot are examples of technology applications that support learning in interactive learning (Cahya Pratama et al., 2025). In addition, all teaching materials, including e-modules, digital books, assignments, and evaluations, are compiled in Google Classroom.

After planning, the next standard in the learning process is implementation. During the implementation stage, teachers do not merely act as conveyors of information; they also serve as role models, providing guidance, assistance, encouragement, and support to students. Teachers play a role in facilitating an interactive, inspiring, and enjoyable learning process, so that students feel valued, involved, and motivated to learn and develop their potential to the fullest (Permendikbudristek, 2022). Interactive learning can be achieved through media that suit students' needs (Syahfitri & Muntahanah, 2024). In the context of the discussion, the author will describe the implementation of digital learning integration in Islamic Religious Education at SMP Muhammadiyah Program Khusus

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Kartasura, encompassing *Akidah, Akhlak, Al-Qur'an Hadist,* History of Islamic Culture, and Fiqh.

1. Faith

   The implementation of digital technology integration in Islamic Religious Education, particularly in the element of creed, can be demonstrated through the use of digital e-modules and books. The e-module on *Akidah* (Faith) in the SMP Muhammadiyah Al-Kaustar Program Khusus Kartasura serves as a digital learning medium that replaces printed books containing material on *Qada* and *Qadar*. These e-modules contain material on *Qada* and *Qadar*, which teachers use as one of the instructional media. The digital books are integrated into Google Classroom, which serves as the learning management system throughout the learning process. Using Google Classroom can increase students' interest in learning (Susanti & Kristin, 2021). In its implementation, Google Classroom is used by Islamic Religious Education teachers as a platform to support the learning process.

   In the process of teaching religious beliefs, teachers display the e-module using a projector as the medium. The use of interactive learning media in the learning process is considered effective in providing understanding and stimulating critical thinking skills in students (Syahfitri & Muntahanah, 2024). In practice, the use of conventional printed books as a learning medium has been replaced by digital books or e-modules. The digital textbooks used not only include teaching materials in the form of text, but also videos, quizzes, and exercises that can be accessed online by students.

   Based on interviews conducted by researchers with Islamic Religious Education teachers, after students listened to material presented via a projector about faith in *Qada* and *Qadar*, they were asked to discuss in groups the cases presented by the teacher. The use of group discussion in teaching improved students' critical thinking skills. After the group discussions, each group member was asked to present the results. This aligns with previous studies, which have shown that a well-run discussion process can hone students' communication skills (Sari & Kasduri, 2025).

   The findings in Aqidah learning indicate that the application of digital learning not only serves as a substitute for printed textbooks but also strengthens the process of internalising the concept of faith. The integration of digital e-modules with Google Classroom enables teachers to present *Qada* and *Qadar* material in a more contextually relevant way, combining text, video, and interactive exercises. In line with previous studies, the use of interactive digital media combined with group discussions encourages students' cognitive engagement and facilitates the development of critical thinking and communication (Syahfitri & Muntahanah, 2024). Thus, the results of this study confirm that digital learning in Aqidah supports more active and reflective learning and strengthens students' conceptual understanding of faith material, rather than merely increasing the efficiency of material delivery.

2. Moral

   The integration of digital technology into moral education is evident in the use of short YouTube videos on environmental conservation and climate action. The use of YouTube demonstrates the teacher's ability to integrate technology into the learning process. The teacher's ability to present technology and understand the material presented is a manifestation of the concept of Technology Content Knowledge (Sudiarti et al., 2025). Based on an interview conducted with an Islamic Religious Education

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teacher, the author found that after watching the video, students were asked to identify why environmental conservation is necessary.

Students were given the task of creating a poster on the Canva platform outlining the definition, the basic principles of environmental conservation and climate control, the benefits, and strategies for environmental conservation. After completing the poster, students were asked to present the results, which were then uploaded to social media. In this case, the teacher used the project-based learning method. Project-Based Learning is a learning model that uses real projects implemented by students to solve learning problems (Yusri et al., 2024). The teacher's ability to deliver a project-based learning process embodies pedagogical content knowledge (Sudiarti et al., 2025).

Findings from the *Akhlak* (Morals) learning process indicate that digital learning not only serves as a medium for conveying moral messages but also as a means of fostering students' awareness and concrete actions. The integration of YouTube videos, Canva-based project assignments, and the publication of work through social media demonstrates that teachers can meaningfully combine mastery of environmental values with pedagogical and technological strategies (Sudiarti et al., 2025). Consistent with previous studies, project-based learning supported by digital technology has proven effective in fostering students' moral awareness, social responsibility, and critical thinking skills regarding contextual issues (Yusri et al., 2024).

3. Fiqh

Teachers' ability to organise and conduct effective, high-quality learning processes is a core competency required of professional educators. Pedagogical competence is closely related to and mutually influences the learning methods used. The selection and application of learning methods that are appropriate to the characteristics of the students, the teaching material, and the learning objectives to be achieved is a synergy between the methods and the pedagogical competence of the teacher (Syahfitri & Muntahanah, 2024).

The implementation of digital technology integration applied in Islamic Religious Education, particularly in the element of Fiqh, can be seen through the use of YouTube media that displays animated videos about the subject of sujud. Based on the researchers' findings, during the fiqh learning process on the subject of sujud, teachers used the demonstration method by directly exemplifying the recitation and movements of sujud. The use of the demonstration method in learning makes it easier for students to understand the concepts of the material being conveyed (Syahfitri & Muntahanah, 2024). The ability of teachers to choose learning methods that are appropriate to the teaching material and the conditions of the students is a form of the concept of pedagogical knowledge (Herwanto et al., 2024). In their teaching, teachers must first understand the material about the various types of sujud and the procedures for performing sujud as a form of the teacher's understanding of the teaching material/content knowledge. Thus, students can directly observe and try to practice the movements and recitations of sujud demonstrated by the teacher. Pedagogical Content Knowledge is the knowledge of the ability to manage and deliver an effective learning process by combining specific content or teaching materials mastered by the teacher (Sudiarti et al., 2025).

Based on the interviews, it was found that Islamic Religious Education teachers use Google Classroom to collect assignments. The assignments consist of videos of students performing prayers as a means of psychomotor domain assessment. On this

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platform, each student is asked to submit their assignments and provide feedback by highlighting each prayer movement performed by other students. Thus, the implementation of the modified assignments given by teachers is not just a practice but has become an analysis, documentation, and reflection task on the suitability of movements and recitations (Lumbantoruan & Ditasona, 2024). In addition, teachers use the YouTube platform to collect group assignments in the form of videos of practice performing the burial of the deceased.

Findings from *Fikih* (Fiqh) learning indicate that the application of digital learning not only supports material demonstrations but also contributes to expanding learning design and assessment. The integration of YouTube media, demonstration methods, and Google Classroom for collecting and providing feedback on practical assignments demonstrates that teachers can effectively combine material mastery, pedagogical strategies, and technology (Sofwan et al., 2024). In line with the TPACK framework, the use of videos of prostration practices and funeral arrangements encourages students not only to imitate movements but also to analyse, document, and reflect on the accuracy of readings and worship movements. Previous research has shown that video-based assessment and peer feedback are effective in improving students' critical thinking abilities (Aprilianti & Widyantoro, 2024). Thus, the results of this study confirm that digital learning in *Fi*qh supports more authentic, participatory learning and is oriented towards mastering meaningful worship practices rather than merely mechanical practice.

4. History of Islamic Culture

After observing the Islamic Cultural History learning *(Sejarah Kebudayaan Islam)* process, discussing the Safavid Dynasty, the researcher found that teachers applied the Project-Based Learning model. Project-Based Learning is a learning model designed through the implementation of real projects by students as a means to solve learning problems (Yusri et al., 2024). During the delivery of the material, the teacher played a YouTube video about the history of the Safavid dynasty on a projector. Teachers' ability to utilise digital technology, such as YouTube and projectors, falls within the realm of Technological Knowledge (Sudiarti et al., 2025).

Next, after watching the video, students were given a group assignment to create a concept map using the Canva platform about the core of the learning video. Apart from that, students were given individual assignments to explain several pictures of historical buildings from the Safavid dynasty using Microsoft Word. This assignment falls under the domain of pedagogical knowledge or the ability of teachers to manage and deliver the learning process. The integration between the Technological Knowledge domain and the pedagogical knowledge domain produces a new intersection in the form of Technological Pedagogical Knowledge (Sudiarti et al., 2025).

The findings from History of Islamic Culture (*Sejarah Kebudayaan Islam*) learning show that the application of digital learning has gone beyond delivering information and is moving towards transforming learning design. The integration of digital books, Google Maps, YouTube videos, and Canva-based assignments within the Project-Based Learning framework confirms that teachers not only master historical content but also can effectively integrate technology with pedagogical strategies. In line with the TPACK framework, the combination of Technological Knowledge, Content Knowledge, and Pedagogical Knowledge enables students to build a visual, collaborative, and analytical understanding of history, rather than simply memorising historical facts (Sofwan et al., 2024). Previous research shows that the use of interactive

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digital media in history learning can increase high-level cognitive engagement, information synthesis skills, and understanding of spatial and temporal contexts (Syahfitri & Muntahanah, 2024). Thus, the results of this study reinforce empirical findings that digital learning in History of Islamic Culture (*Sejarah Kebudayaan Islam*) is effective in transforming learning from teacher-centred to student-centred, while supporting the development of critical and collaborative thinking skills in students.

5. Al-Qur'an and Hadist

After observing the Al-Qur'an Hadith learning process that discussed the tajwid mim sukun material in QS Al-Hujurat/49:13, the researcher observed that the teacher used digital technology by displaying e-module material on a projector screen. Teachers' ability to use and operate digital technology during the learning process falls within the realm of technological knowledge (Sofwan et al., 2024). After displaying the material through the projector, the teacher recited QS. AlHujurat/49:13 in accordance with makharijul huruf and explained the reading rules contained in the verse. Teachers' mastery of the material presented to students in the learning process reflects the domain of content knowledge (Sudiarti et al., 2025).

In practice, teachers utilise the Quizizz website, which contains quizzes in the form of riddles about the rules of reading mim mati in QS. Al-Hujurat/49:13, which is used as one of the media in learning evaluation. Utilisation of digital applications that are adjusted to instructional and assessment needs. The use of e-modules via projectors confirms that teachers can use digital technology to deliver material. At the same time, their ability to recite verses according to the rules of makharijul huruf and to explain the rules of reading demonstrates a strong mastery of religious material. In addition, the use of digital applications as a medium for learning evaluation indicates that technology is not only used for delivering material but also for assessing learning. This shows that integrating technology into Al-Qur'an Hadith learning has been implemented effectively to enhance learning effectiveness, increase student engagement, and adapt the evaluation process to the characteristics of learning in the digital age.

These findings confirm the TPACK framework, which posits that effective technology integration occurs when technological knowledge aligns with content knowledge and pedagogical strategies (Sofwan et al., 2024). The use of e-modules via projectors and the Quizizz application in Al-Qur'an Hadith learning shows that technology is not used separately, but is integrated to support material delivery, strengthen tajwid understanding, and evaluate learning interactively. In line with previous studies, the use of quiz-based digital media has been proven to increase learning engagement and provide immediate feedback that strengthens students' conceptual understanding (Cahya Pratama et al., 2025). Thus, the results of this study reinforce empirical findings that integrating technology into Al-Qur'an Hadith learning not only increases the effectiveness of material delivery but also transforms the evaluation process to be more adaptive to the characteristics of learning in the digital era.

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Pedagogical Knowledge	Demonstration method used in teaching the material on prostration
Content Knowledge	Understanding material about the various types of prostration and the procedures for performing prostration
Technological Knowledge	Showing videos about the Safavid dynasty using the YouTube platform
Pedagogical Content Knowledge	Use of group discussion methods on the subject of faith in Qada and Qadar with a real-life case approach
Technological Content Knowledge	Using the Google Maps application to show the territory ruled by the Safavid dynasty
Technological Pedagogical Knowledge	Using the Quizizz platform, which contains quizzes in the form of riddles containing material on tajwid mim sukun in QS. Al-Hujurat/49:13, which is used as learning evaluation material
Technological Pedagogical Content Knowledge	YouTube application to show videos about the Safavid dynasty and display its territory using Google Maps. Use the projectbased learning method in the form of group assignments to create concept maps using the Canva application

Figure 3. *Analysis of TPACK components*

Affective and Cognitive Responses in Digital Learning

Technology-integrated learning changes the patterns of interaction among students, teaching materials, teachers, and the learning environment as a whole. These changes are clearly reflected in students' increased enthusiasm during the learning process (Sahayu et al., 2026). Technology integration allows students to be more actively involved because the material is presented in a more varied and interactive way. This encourages simultaneous cognitive and affective engagement. Based on interviews conducted by the author with Islamic Religious Education teachers, the teachers reported that students showed greater interest and enthusiasm when participating in learning that used digital technology. The enthusiasm that arises during the learning process is an indicator of students' internal motivation to participate in learning activities. Thus, enthusiasm for learning reflects students' motivation to participate in the learning process and to develop their understanding of the material being studied (Nugraha et al., 2024).

The increase in students' learning experiences gained through accessing, processing, and developing knowledge directly reflects the application of technology-integrated learning

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(Syahfitri & Muntahanah, 2024). Based on interviews with students, it was found that they felt an improvement in the quality of their learning experiences. Based on the constructivist theory developed by Jean Piaget (Lathifah et al., 2024), it shows that individuals actively construct their knowledge through interaction with their environment. Improvements in the learning experiences of students contribute to the formation of new knowledge that is in line with the learning objectives to be achieved (Dendodi et al., 2025).

The creation of an interactive learning environment through digital technology has a positive impact on students, especially by helping them understand learning materials more comprehensively and in a more structured manner (Syahfitri & Muntahanah, 2024). The integration of technology allows for a more varied presentation of material so that students can relate new information to their previous learning experiences. Based on interviews conducted by the author with students, the students reported that the learning process became more enjoyable and easier to understand when teachers used digital learning media, such as Quizizz, Kahoot, films, Google Classroom, and Google Maps. The use of various media helped students receive information through multiple learning channels. These findings are in line with the Multimedia Learning Theory proposed by Richard E. Mayer, which explains that learning will be more effective when information is delivered through a combination of text, images, and audio in an integrated manner (Mayer, 2009). A pleasant learning atmosphere is closely related to students' ability to understand the learning material. A strong understanding of the material through an enjoyable learning process further increases learning motivation and overall learning outcomes for students (Walid et al., 2022).

The following table shows the types of learning media and the experiences of students and teachers in participating in technology-integrated learning processes, obtained through interviews with students.

Table 2. Types of Learning Media and Experiences of Students after Participating in Islamic Religious Education Integrated with Technology

Informants	Types of digital learning media	Experience
S	Google Classroom Quizizz	Enjoyable learning
R	Google Classroom Google Forms	Enjoyable learning Easy-to-understand learning
S	Google Classroom Quizizz	Easy to understand
Z	Google Classroom Quizizz	Lots of learning experiences
A	Google Classroom Quizizz Movies Google Maps	Enjoyable learning Understands how to use interactive games
G	Google Classroom Emodul Quizizz Google Maps	Enjoyable learning

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Student Evaluation in Technology-Integrated Learning

Assessment is a crucial component in education. This study defines evaluation as a systematic process that determines the extent to which learning objectives set prior to instruction are achieved (Ariefky & Inayati, 2023). As evaluators, teachers have full control over the selection of instruments for the evaluation process. These instruments can be tests or nontests. The instruments used by teachers to conduct summative assessments include multiple-choice questions and computer-based essay questions in the CBT platform. In practice, test results are not the main focus of learning evaluation indicators. There are also three main areas in the evaluation process: cognitive, affective, and psychomotor. In the cognitive area, the main indicators focus on the intellectual aspects and students' understanding of the learning material (Chanaa & El Faddouli, 2024). Bloom's taxonomy consists of six levels of cognitive ability, namely remembering, understanding, applying, analysing, evaluating, and creating (Zulkifli et al., 2025). The framework organises six levels that progress gradually and systematically from concrete to abstract thinking and from simple to more complex levels of difficulty. The initial levels in Bloom's taxonomy serve as an important foundation for the development of higher-level thinking skills (Chanaa & El Faddouli, 2024).

Findings from interviews conducted by the author with Islamic Religious Education teachers show that there are findings on indicators of cognitive competency achievement. This achievement is seen in the ability of students to explain Islamic Religious Education material through digital presentations. In addition, the indicator of cognitive competency achievement is seen in the ability of students to make digital summaries of the material provided in digital books (Emodules) using their own language. Finally, students' ability to answer online quizzes based on their understanding of concepts and reasoning is one indicator of cognitive competency achievement. In Bloom's taxonomy cognitive domain, explaining and summarising activities fall under the comprehension level category (Chanaa & El Faddouli, 2024). In this context, the implications of evaluation in the cognitive domain in Islamic Religious Education learning are still limited to the comprehension level.

The affective domain focuses on the attitudes and behaviours of students. Assessment in the affective domain is conducted by teachers to evaluate students' achievement in terms of interest, motivation to learn, and social and spiritual attitudes demonstrated during the learning process (Aly & Inayati, 2019). Teachers evaluate students' affective development by observing their behaviour (Ariefky & Inayati, 2023). There are several levels of categories used as indicators in the evaluation of the affective domain. These categories are divided into five levels, namely acceptance, response, evaluation, organisation, and characteristics based on values (Syafitri et al., 2025). The author's interviews with two Islamic Religious Education subject teachers reveal several indicators of affective competency achievement. These indicators are measured through students' honesty in completing online assignments and examinations. The achievement of affective indicators is also evident in students' sense of responsibility for submitting their assignments on time via Google Classroom. Noble character is one of the operational verbs at the value-based characteristic level. In this case, the honesty of the students is a reflection of noble character.

The psychomotor domain focuses on the development of students' physical abilities during the learning process. In the psychomotor domain, the development of physical skills progresses through several levels, beginning with imitation and manipulation, and advancing to spontaneous action and articulation (Aly & Inayati, 2019). Based on the

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results of interviews conducted by the researcher with Islamic Religious Education teachers, indicators of competency achievement in the psychomotor domain can be identified through the accuracy of students' movements when performing religious practices. Moreover, students' ability to produce short videos on the theme of the Day of Judgment serves as an indicator of competency achievement in the psychomotor domain. The use of operational verbs, such as making and demonstrating, serves as a reference point in evaluating the psychomotor domain at the natural action level (Aly & Inayati, 2019). The following table shows the indicators of cognitive, affective, and psychomotor competencies in Islamic Religious Education learning obtained through interviews with Islamic Religious Education teachers.

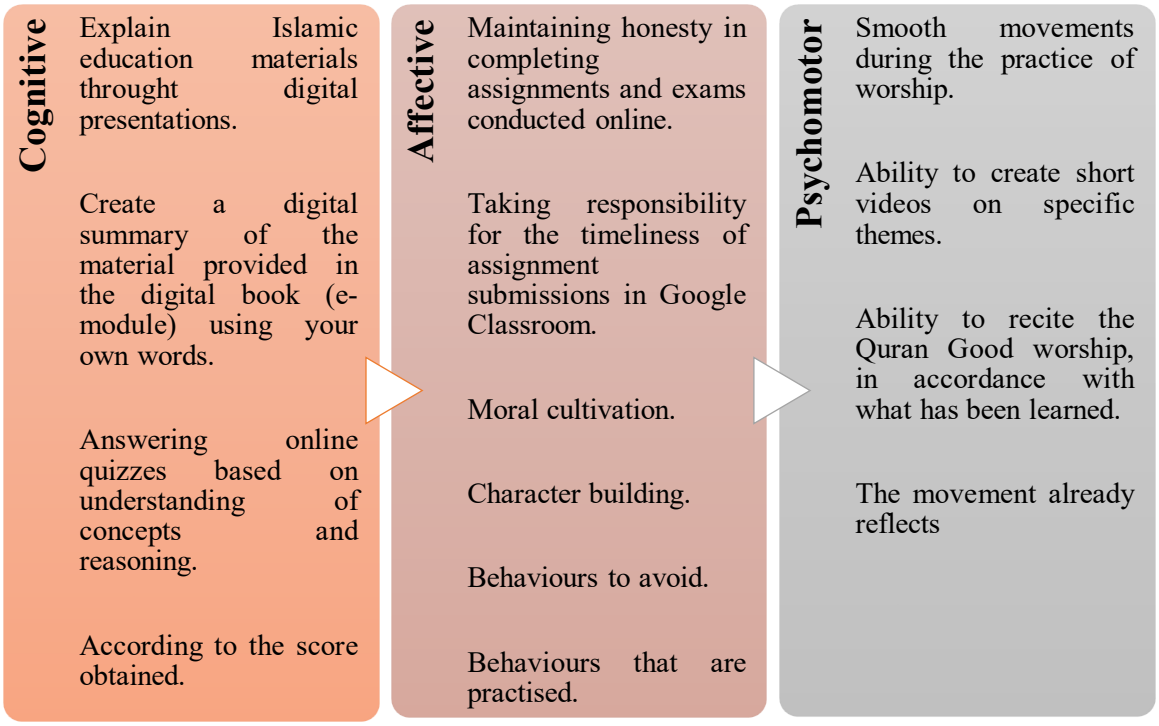

Figure 4. *Indicators of cognitive, affective, and psychomotor competencies in Islamic Religious Education learning*
Source: Research Interview Results

Inhibiting Factors to Implementing Technology-Integrated Learning

The process of integrating digital technology into learning activities is not without obstacles that affect the program's implementation in the field. This integration requires more time, planning, and classroom management than conventional learning. Findings from interviews with Islamic Religious Education teachers indicate two primary factors that constrain the integration of digital technology in Islamic Religious Education learning at SMP Muhammadiyah Al-Kautsar Program Khusus Kartasura. The first factor relates to the limited time available to teachers to prepare and deliver digital-based teaching materials optimally amid administrative burdens and curriculum demands. The second factor relates to student behaviour, particularly the inappropriate use of technology, which actually disrupts concentration and the effectiveness of the teaching and learning process.

Limited time allocation for educators is a significant obstacle to the effort to produce high-quality digital books. Various factors limit time, including administrative burdens,

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implementation demands, and additional responsibilities, collectively reducing the time available for the design, production, and revision of digital learning materials (Rasmitadila et al., 2020). As a result, the digital books produced are often minimal, lack interactivity, and do not fully adopt principles of technology-enhanced instructional design. This phenomenon is consistent with time management and workload theories, which explain that the accumulation of excessive workloads has the potential to reduce the quality of planning and hinder innovation in a professional context (Hilhamsyah et al., 2024).

The second factor that hinders digital technology integration is the misuse of technology by students during learning. Observations show that devices such as laptops are not only used to access learning materials, but also to open websites, applications, or content that is not relevant to learning. This reduces learning focus, disrupts concentration, and weakens classroom control. This phenomenon indicates weak self-regulation among students, as well as a lack of monitoring systems and activity designs that can guide the productive use of technology (Divayana et al., 2021). Thus, without strict digital classroom management and structured learning designs, technology has the potential to become a distraction rather than a learning facilitator.

IV. CONCLUSION

This study provides empirical evidence that digital technology can be systematically integrated into Islamic Religious Education at the junior high school level to address evolving learning needs better. The study's findings show that integrating digital technology through the SAMR and TPACK frameworks can support the learning process, from planning to evaluation, and encourage active student participation in learning activities. Using digital technology in Islamic Religious Education positively impacts students' learning experience. The learning process becomes more interactive and easier to understand, aligning with the characteristics of students in the digital era. These results demonstrate that an approach integrating technology with appropriate pedagogical strategies has the potential to enhance the quality of Islamic Religious Education. However, the study also identified implementation limitations. Teachers have limited time to develop digital learning content, and students misuse technology, which hinders the optimisation of technology-based learning. These findings suggest that successfully integrating technology depends not only on the availability of media. Successfully integrating technology also depends on managing the learning process and preparing educators and students. Based on these findings, the study recommends a more structured approach to planning digital learning and technology-based classroom management. Further research could examine strategies for developing teachers' competencies in designing digital content or investigate the effectiveness of integrating digital technology in different educational contexts and levels.

V. REFERENCES

[1] Alfiana, H., Karyono, H., & Gunawan, W. (2022). The Application of SAMR Model and Self-Efficacy on Critical Thinking and Procedural Knowledge. *LLT Journal: A Journal on Language and Language Teaching*, *25*(1), 200–217. https://doi.org/10.24071/llt.v25i1.3893

[2] Aly, M., & Inayati, N. L. (2019). *Pengembangan Evaluasi Pendidikan Agama Islam*. Surakarta: Muhammadiyah University Press.

[3] Aprilianti, B. D. A., & Widyantoro, A. (2024). Digital Peer Feedback and Students' Critical Thinking: What Correlation and to What Extent? *Journal of Languages and Language Teaching*, *12*(2), 629. https://doi.org/10.33394/jollt.v12i2.10264

[4] Ariefky, M. M., & Inayati, N. L. (2023). Peran Guru PAI dalam Pelaksanaan Evaluasi Pembelajaran Sumatif Siswa di SMK Negeri 6 Sukoharjo. *EDUKASIA: Jurnal Pendidikan Dan Pembelajaran*, *4*(2), 2343–2350. https://doi.org/10.62775/edukasia.v4i2.586

[5] Aziroh, K. M. U., Salsabila, A. Z., & Sutiah, S. (2025). Analisis Model Pengintegrasian Teknologi Dalam Pembelajaran Menggunakan Samr Dan Tpack: Teori Dan Praktik Dalam Pengembangan Media Pembelajaran Pai. *Inteligensi : Jurnal Ilmu Pendidikan*, *8*(1), 174–185. https://doi.org/10.33366/ilg.v8i1.6755

[6] Blundell, C. N., Mukherjee, M., & Nykvist, S. (2022). A scoping review of the application of the SAMR model in research. *Computers and Education Open*, *3*(September 2021). https://doi.org/10.1016/j.caeo.2022.100093

[7] BPS. (2025). *Statistik Telekomunikasi Indonesia 2024*. https://www.bps.go.id/id/publication/2025/08/29/beaa2be400eda6ce6c636ef8/statistik-telekomunikasi-indonesia-2024.html

[8] Cahya Pratama, H., Yusuf, Z., & Agustin, F. P. (2025). Gamification Method Based on Information Communication Technology (ICT) in Islamic and Muhammadiyah Learning. *At Turots: Jurnal Pendidikan Islam*, *7*(1), 59–74. https://doi.org/10.51468/jpi.v7i1.767

[9] Chanaa, A., & El Faddouli, N. E. (2024). A cognitive level evaluation method based on machine learning approach and Bloom of taxonomy for online assessments. *Journal of Education and Learning*, *18*(2), 553–560. https://doi.org/10.11591/edulearn.v18i2.20948

[10] Ciptaningrum, D. S., Putro, N. H. P. S., Sari, N. K., & Hasanuddin, N. (2021). Evaluation of learning process: Knowledge of ICT integration among preservice English language teachers. *REID (Research and Evaluation in Education)*, *7*(1), 46–56. https://doi.org/10.21831/reid.v7i1.30521

[11] Creswell, J. W. (2023). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (6th ed.). California: SAGE Publications.

[12] Dendodi, Qunitah, Nurahlina, N., & Aprilia, A. (2025). Analisis Peran Pengalaman Belajar dalam Membangun Memori Jangka Panjang pada Siswa Tingkat Sekolah Dasar. *Jurnal Pengabdian Masyarakat Dan Riset Pendidikan*, *3*(4), 1750–1758. https://doi.org/10.31004/jerkin.v3i4.746

[13] Divayana, D. G. H., Suyasa, P. W. A., & Widiartini, N. K. (2021). An innovative model as evaluation model for information technology-based learning at ICT vocational schools. *Heliyon*, *7*(2), e06347. https://doi.org/10.1016/j.heliyon.2021.e06347

[14] Hakim, A. R., & Al- Masumah, N. (2020). Implementasi Pembelajaran Agama Islam Berbasis Teknologi Digital untuk Menghadapi Tantangan Masyarakat 5.0. *Al- Liqo: Jurnal Pendidikan Islam*, *1*(3), 327–346. https://doi.org/10.46963/alliqo.v10i1.2636

[15] Herwanto, A., Wati, U. A., Senen, A., Nurhayati, N., & Marwan, M. (2024). Application of TPACK for Student Learning Motivation in Science Subjects in

Elementary School. *Mimbar Sekolah Dasar*, *11*(2), 455–473. https://doi.org/10.53400/mimbar-sd.v11i2.71840

[16] Hidayah, L. F. N., Sumarwati, S., Anindyarini, A., Mulyono, S., & Suryanto, E. (2026). Barriers to technology integration in Indonesian language learning in Solo Raya: A TPACK framework-based analysis. *KEMBARA: Jurnal Keilmuan Bahasa, Sastra, Dan Pengajarannya*, *12*(1), 113–127. https://doi.org/10.22219/kembara.v12i1.42727

[17] Hilhamsyah, Hidayati, D., & Imama, M. L. (2024). Teacher Habits And Workload In The Digitalization Of Education. *JKTP: Jurnal Kajian Teknologi Pendidikan*, *7*(4), 195. https://doi.org/10.17977/um038v7i42024p195

[18] Hirzulloh, M. F., & Annadhif, T. A. (2024). Islamic Education in the Era of Industrial Revolution 4.0 and the Utilization of Digital Technology in the Teaching and Learning Process. *Jurnal Iqra' : Kajian Ilmu Pendidikan*, *9*(2), 409–437. https://doi.org/10.25217/ji.v9i2.2778

[19] Imamuddin, M., M., Z., Andryadi, Isnaniah, & Artika, S. F. (2022). The Era of Industrial Revolution 4.0 and the Existence of Islamic Education. *TADRIS: Jurnal Pendidikan Islam*, *17*(1), 198–210. https://doi.org/10.19105/tjpi.v17i1.5178

[20] Komdigi. (2025). *Komitmen Pemerintah Melindungi Anak di Ruang Digital*. https://www.komdigi.go.id/berita/artikel/detail/komitmen-pemerintah-melindungi-anak-di-ruang-digital

[21] Lumbantoruan, J. H., & Ditasona, C. (2024). Development of a mathematics module on circle material based on the small group discussion model. *Journal of Education and Learning*, *18*(1), 18–25. https://doi.org/10.11591/edulearn.v18i1.20920

[22] Mayer, R. E. (2009). *Multimedia Learning*. Cambridge University Press.

[23] Mintasih, D., Sukiman, S., & Purnama, S. (2024). Integration of Digital Technology in Islamic Religious Education Learning: A Qualitative Study on Teachers' Competence and Implementation Models in Secondary Schools. *Jurnal Pendidikan Islam*, *13*(1), 85–96. https://doi.org/10.14421/jpi.2024.131.85-96

[24] Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge : A Framework for Teacher Knowledge. *Teachers College Record Volume*, *108*(6), 1017–1054. https://doi.org/10.1111/j.1467-9620.2006.00684.x

[25] Munadirin, A., Muslim, R., & Fatah, Z. (2023). Transformation of PAI Learning Through Approaches to Active Deep Learning Experience (ADLX) In The Digital Era. *Nadwa: Jurnal Pendidikan Islam*, *17*(2), 185–202. https://doi.org/10.21580/nw.2023.17.2.26745

[26] Nugraha, T. C., Abdel Rahim, E. S. E. S. A., & Lukman, F. (2024). Integrating Problem-Based and Flipped Learning in Islamic Religious Education: A Pathway To Achieving Sustainable Development Goals. *Jurnal Pendidikan Islam*, *10*(1), 125–136. https://doi.org/10.15575/jpi.v10i1.35204

[27] Pasaribu, M. M., Sormin, D., & Lubis, J. N. (2025). Efforts To Increase Students' Learning Motivation Through Audio-Visual Media. *Tafkir: Interdisciplinary Journal of Islamic Education*, *6*(3), 601–618. https://doi.org/10.31538/tijie.v6i3.1748

[28] Permendikbudristek. (2022). *Peraturan Menteri Pendidikan Dan Kebudayaan Republik Indonesia Nomor 16 Tahun 2022 Tentang Standar Proses Pendidikan Dasar*

Dan Menengah. Kemendikbudristek. https://peraturan.bpk.go.id/Details/224238/permendikbudriset-no-16-tahun-2022

[29] Puentedura, R. R. (2020). *SAMR- A Research Perspective*. https://hippasus.com/rrpweblog/archives/2020/01/SAMR_AResearchPerspective.pdf

[30] Putra, F. H. E., Edi, D., Hardjadinata, Marhamah, Raihan, & Syairozi, I. (2025). Reforming Traditional Islamic Education Through Technology-Based Human Resource Empowerment And Adaptive Curriculum. *Jurnal At-Tarbiyat: Jurnal Pendidikan Islam*, *8*(2). https://doi.org/10.37758/jat.v8i6.11

[31] Putri, T. D., Haq, Z., & Gusmaneli. (2025). Model Pembelajaran Tradisional dan Kontemporer dalam Pendidikan Agama Islam dan budaya masyarakat Muslim . *Lencana: Jurnal Inovasi Ilmu Pendidikan*, *3*(1), 304–312. https://doi.org/10.55606/lencana.v3i1.4579

[32] Rasmitadila, Aliyyah, R. R., Rachmadtullah, R., Samsudin, A., Syaodih, E., Nurtanto, M., & Tambunan, A. R. S. (2020). The perceptions of primary school teachers of online learning during the COVID-19 pandemic period: A case study in Indonesia. *Journal of Ethnic and Cultural Studies*, *7*(2), 90–109. https://doi.org/10.29333/ejecs/388

[33] Saad, M. M., Barbar, A. M., & Abourjeili, S. A. R. (2013). TPACK-XL framework for educators and scholars : A theoretical grounding for building preservice teachers ICT knowledge base. *Turkish Journal of Teacher Education*, *1*(2), 1–21. https://tujted.com/files/15/manuscript/manuscript_616/tujted-616-manuscript-235235.pdf

[34] Sahayu, W., Triyono, S., & Ungu, N. K. (2026). Digital Technology in Differentiated English Language Teaching: A Systematic Review with Bibliometric Insights. *Indonesian Journal of Science and Technology*, *11*(1), 167–188. https://doi.org/10.17509/ijost.v11i2.89685

[35] Sahir, S. H. (2022). *Metodologi Penelitian*. Yogyakarta: Penerbit KBM Indonesia.

[36] Sari, I. P., & Kasduri, M. (2025). Penerapan Metode Diskusi Kelompok untuk Meningkatkan Pemahaman Siswa terhadap Materi Pendidikan Agama Islam di SMA PAB 4 Sampali. *Hikmah : Jurnal Studi Pendidikan Agama Islam*, *2*(4), 01–11. https://doi.org/10.61132/hikmah.v2i4.1279

[37] Setiyawati, S., Basori, B., & Efendi, A. (2023). Substitution, Augmentation, Modification and Redefinition (SAMR) Model to Improve Students' Critical Thinking Ability. *IJIE (Indonesian Journal of Informatics Education)*, *7*(1), 8. https://doi.org/10.20961/ijie.v7i1.60356

[38] Sholeh, M. I., Haris, M., 'azah, N., Shobirin, M. S., Sahri, Wahruddin, B., Muzakki, H., Ismail, T., & Ali, H. (2024). The Role of Teachers in Increasing Students' Learning Motivation in Islamic Religious Education. *Jurnal Pendidikan Agama Islam*, *21*(2), 421–441. https://doi.org/10.14421/jpai.v21i2.8846

[39] Sofwan, M., Yaakob, M. F. M., & Habibi, A. (2024). Technological, pedagogical, and content knowledge for technology integration: a systematic literature review. *International Journal of Evaluation and Research in Education*, *13*(1), 212–222. https://doi.org/10.11591/ijere.v13i1.26643

[40] Sudiarti, N. P., Lasmawan, I. W., & Kertih, I. W. (2025). Implementasi Model Pembelajaran Berbasis TPACK dalam Pembelajaran IPS di Sekolah Dasar. *Journal of Education Action Research*, *9*(2), 250–258. https://doi.org/10.23887/jear.v9i2.87135

[41] Sugiyono. (2021). *Metode Penelitian Kuantitatif Kualitatif dan R&D (3rd ed.)*. Bandung: Alfabeta.

[42] Sulaiman, W. Z. W., Ali, Z., Ali, Z. M., Shahid, S. H., Ishtiaq, M., & Bakar, N. A. (2025). Using Canva and Microsoft Teams to support students' writing tasks. *International Journal of Evaluation and Research in Education*, *14*(4), 3295–3303. https://doi.org/10.11591/ijere.v14i4.27985

[43] Sunarti, T., Suprapto, N., Prahani, B. K., Satriawan, M., & Rizki, I. A. (2024). Online problem-based learning and 3D digital books to improve preservice teachers' scientific literacy. *International Journal of Evaluation and Research in Education*, *13*(5), 3139–3150. https://doi.org/10.11591/ijere.v13i5.29835

[44] Suraijiah, Rusdiana, Rusdiah, M. Ramli, & Murdan. (2023). The Effectiveness of Using Media Technology in Islamic Religious Education in an Independent Curriculum: Technocultural Study of Religious Education. *Jurnal Iqra' : Kajian Ilmu Pendidikan*, *8*(1), 335–349. https://doi.org/10.25217/ji.v8i1.2760

[45] Susanti, A. A., & Kristin, F. (2021). Efektivitas Penggunaan Google Classroom dan Zoom Cloud Meeting Terhadap Minat Belajar IPS. *MIMBAR PGSD Undiksha*, *9*(3), 367–374. https://doi.org/10.23887/jjpgsd.v9i3.39658

[46] Syafitri, K., Dongaran, D. A., & Gusmaneli. (2025). Penerapan Taksonomi Bloom dalam Nilai-Nilai Islam. *Edukasi Elita : Jurnal Inovasi Pendidikan*, *2*(4), 229–250. https://doi.org/10.62383/edukasi.v2i4.2437

[47] Syahfitri, J., & Muntahanah. (2024). The effectiveness of a local wisdom-based interactive digital module on students' critical thinking disposition. *International Journal of Evaluation and Research in Education*, *13*(4), 2170–2177. https://doi.org/10.11591/ijere.v13i4.28256

[48] Walid, A., Kurniawan, A., Mangsi, R., Farida, I., & Utami, S. (2022). Understanding the Impact of the Application of Information and Communication Technology on Islamic Student Learning Outcomes in the Digital Area. *Jurnal Al-Ulum*, *22*(2), 263–282. https://doi.org/10.30603/au.v22i2.2967

[49] Widiani, D., & Istiqomah, L. (2021). The Influence of Learning Motivation and Intellectual Intelligence on Learning Achievement in Islamic Religious Education. *Jurnal Pendidikan Islam*, *7*(2), 149–164. https://doi.org/10.15575/jpi.v7i2.15273

[50] Yusri, R., Yusof, A. M., & Sharina, A. (2024). A systematic literature review of project-based learning: research trends, methods, elements, and frameworks. *International Journal of Evaluation and Research in Education*, *13*(5), 3345–3359. https://doi.org/10.11591/ijere.v13i5.27875

[51] Zainuddin, Amrullah, A. M. K., & Zuhriyah, I. A. (2025). The Challenges of Developing Islamic Education Curriculum and Strategies for Its Development in Facing Future Competency Demands. *Tafkir: Interdisciplinary Journal of Islamic Education*, *6*(1), 111–126. https://doi.org/10.31538/tijie.v6i1.1316

e-ISSN: 2528-0465 (online) | Volume 11, Issue 1, 2026
p-ISSN: 2503-5363 (print)

[52] Zulkifli, H., Ismail, A. M., Muhamad, N. A. F., Hussin, N. H., & Zamri, H. Z. (2025). Challenges in teaching Islamic education and requirements of the development of Islamic cognitive domains. *International Journal of Evaluation and Research in Education*, *14*(5), 3534–3545. https://doi.org/10.11591/ijere.v14i5.33565

DOI: https://doi.org/10.35723/jie.v11i1.700