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Implementation of Technology-Based Interactive Learning Media in Supporting Students' Learning Motivation

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ABSTRACT

The decline in learning motivation in Islamic Religious Education (PAI) learning has become a tangible challenge, particularly when the material is delivered conventionally without considering the characteristics of the digital generation. This study specifically aims to explore the implementation of technology-based interactive learning media, reveal the effect of technology-based interactive learning media on students' learning motivation, and identify supporting and inhibiting factors in the implementation of technology-based learning in PAI subjects at SMPI Salafiyah Singosari. The approach used was qualitative with a case study method, conducted through observation, interview, and documentation techniques. The research results show that the implementation of technology-based interactive learning media at SMPI Salafiyah Singosari is carried out in a planned manner through the use of Quizizz, Wordwall, animated videos, and interactive PowerPoint aligned with the *Merdeka*Curriculum. The implementation of interactive learning media has a positive effect on students' learning motivation, as evidenced by increased attention, active participation, self-confidence, and satisfaction in PAI learning. The success of the implementation is supported by teacher readiness, school infrastructure, and student enthusiasm. At the same time, the main obstacles include limited digital devices, disparities in access among students, and the technical burden on teachers in preparing the media. These findings indicate that technology-based interactive media is effective in creating adaptive and participatory PAI learning.

Keywords: learning media, technology, learning motivation

INTRODUCTION

The development of information technology in the era of globalization has had a significant impact on various sectors of life, particularly in the field of education. Technology has driven changes in learning strategies, methods of delivering material, and students' learning behavior. The digital generation, which grows up in a fast-paced technological ecosystem, is accustomed to gadgets, the internet, and digital platforms, thus demanding a more adaptive and contextual learning approach[1]. Therefore, a learning model is needed that can address the demands of the times and the learning characteristics of the digital generation by integrating information technology into the learning process.

Islamic Religious Education (PAI), as one of the subjects that plays an important role in shaping students' character and spirituality, also faces similar challenges. PAI materials, which tend to be normative, abstract, and theoretical, are often less engaging for students. This lack of interest affects learning motivation, reduces active participation, and diminishes understanding of religious values. Therefore, an innovative approach in PAI learning is needed, one that can deliver material in a contextual, communicative, and engaging manner. One approach that has been increasingly developed is the use of technology-based interactive learning media. This media integrates visual, audio, text, and animation elements into a unified format that allows students to interact directly with the material, thereby strengthening the learning experience and enhancing motivation[2], [3].

Several studies have shown that the integration of technology into learning media has a positive effect on both learning outcomes and student motivation. Interactive digital media has been proven to enhance student engagement, enthusiasm, and understanding of learning materials, including through the use of augmented reality and digital quiz applications[4], [5].Interactive media such as the Quizizz application have also been shown to have a positive effect on fostering active attitudes and improving students' learning outcomes[6]. However, most of these studies focus on science or mathematics subjects and are predominantly conducted at the elementary and higher education levels. In contrast, PAI learning, as part of

character education, has received relatively little attention in the context of interactive technology implementation, particularly at the Islamic-based secondary education level.

One significant gap identified in the literature review is the absence of studies that comprehensively discuss the implementation of interactive learning media while considering teacher readiness and competence, as well as technological infrastructure support. In fact, the successful integration of technology in learning largely depends on the teachers' ability to manage the media and the availability of adequate facilities. Without the support of these two aspects, the utilization of interactive media risks failing to achieve learning objectives optimally. Therefore, research is needed that not only evaluates the use of media but also examines the actual conditions of its implementation in schools.

The novelty of this research lies in its comprehensive approach, which not only assesses the effectiveness of interactive learning media in isolation but also explores in depth the process of its implementation within the context of Islamic Religious Education (PAI) learning in technology-based Islamic schools. This study fills the gap in previous research, which generally focuses on the final learning outcomes without detailing the stages of planning, media selection, material delivery strategies, and the dynamics of teacher–student interaction that emerge by integrating pedagogical, technological, and motivational aspects into a single research framework that is contextual and grounded in field practice.

This research was conducted based on field observations at SMPI Salafiyah Singosari, an Islamic educational institution known for its progressive adoption of technology in the learning process. The school is equipped with supporting facilities such as LCD projectors, internet networks, and computers, and implements various digital learning media in PAI instruction. Teachers actively utilize platforms such as interactive PowerPoint, Quizizz, and video presentations in delivering PAI material. This fact indicates that the school is in a strategic position to serve as a model of best practice in the implementation of technology-based interactive media.

Based on the above description, this study specifically aims, first, to explore the implementation of technology-based interactive learning media in the PAI subject at SMPI Salafiyah Singosari. Second, to reveal the effect of technology-based interactive learning media in the PAI subject on students' learning motivation at SMPI Salafiyah Singosari. Third, to identify the supporting and inhibiting factors in the implementation of technology-based learning in the PAI subject at SMPI Salafiyah Singosari, to provide both empirical and theoretical contributions to the development of relevant and adaptive interactive learning models in the digital era.

RESEARCH METHOD

This study used a qualitative approach with a case study method to explore the implementation of technology-based interactive learning media in Islamic Religious Education (PAI) learning at SMPI Salafiyah Singosari. This study also aimed, first, to explore the implementation of technology-based interactive learning media at SMPI Salafiyah Singosari. Second, to reveal the effect of technology-based interactive learning media on students' learning motivation at SMPI Salafiyah Singosari. Third, to identify the supporting and inhibiting factors in the implementation of technology-based learning at SMPI Salafiyah Singosari. A qualitative approach was chosen because it can uncover the meaning, experiences, and subjective interpretations of participants within real contexts in depth[7]. The case study method was used because it provides a comprehensive and contextual description of the digital media–based learning practices implemented in Islamic educational institutions[8].

This research was conducted at SMPI Salafiyah Singosari, which was purposively selected for having implemented interactive learning media in PAI learning with adequate technological infrastructure support. The research subjects included teachers and students of Class VII and Class VIII who were directly involved in the learning process. The selection of subjects was based on their active involvement in the use of interactive media as well as the diversity of their learning experiences. Data were collected through observation, interviews, and documentation. Interviews were conducted in an unstructured manner to explore participants' perceptions and experiences, while observations focused on the classroom learning process. Documentation, such as archives, activity records, and learning photographs, was used to support and strengthen the field findings.

Students' learning motivation in this study was analyzed based on indicators developed from learning motivation theories commonly applied in educational research. These indicators included attention to the material, engagement in learning activities, confidence in completing tasks, active participation in discussions, and satisfaction gained during the learning process[9]. The assessment of these indicators was carried out through data triangulation obtained from interviews, direct observation of students' behavior in class, and learning documentation. All data were analyzed descriptively to identify the extent to which the use of technology-based interactive learning media supports students' engagement and motivation in Islamic Religious Education learning.

Data analysis was carried out using an interactive approach, which included the processes of data collection, data condensation, data presentation in narrative form, and the drawing and verification of conclusions[10]. The collected data were reduced to focus on relevant information, then organized into main themes that reflect the implementation of learning media and the factors affecting it. All verification processes were conducted through source and technique triangulation. Source triangulation was obtained by comparing information from various participants, while technique triangulation was carried

out by comparing the results of interviews, observations, and documentation. In addition, to ensure data credibility, member checking was conducted by directly requesting confirmation from participants regarding the researcher's interpretation of the data obtained in the field.

The research stages followed a qualitative research framework consisting of the pre-field stage, the data collection stage in the field, and the data analysis stage[11]. The pre-field stage included formulating the research design, determining the location, selecting informants, and preparing interview and observation instruments. The data collection stage was carried out through direct classroom interactions and reflective interviews, while the analysis stage was conducted continuously throughout the research process, allowing interpretations to be built inductively and contextually from authentic data.

RESULTS AND DISCUSSION

1. Implementation of Technology-Based Interactive Learning Media

The implementation of technology-based interactive learning media at SMPI Salafiyah Singosari was carried out systematically and structurally, reflecting the readiness of teachers and the school to present a learning model that is adaptive to the characteristics of students in the digital era. Based on field observations, teachers at SMPI Salafiyah Singosari actively utilized platforms such as interactive PowerPoint, Quizizz, and video presentations in PAI learning. This strategy not only strengthened the delivery of the material but also created a more communicative and collaborative learning atmosphere[12].

The implementation at SMPI Salafiyah Singosari began with the planning stage of learning media through the development of technology-based modules aligned with the *Merdeka* Curriculum. These modules functioned not only as a medium for delivering material but also as a tool to encourage active student participation. In this regard, teachers incorporated project-based assignments and interactive evaluations that stimulated deeper engagement in the learning process. A well-designed learning module should be able to facilitate the learning experience in a structured and systematic manner[13]. Based on observations, teachers not only developed the content material but also designed effective interactions between students and digital media. This approach indicates that interactive media can enhance conceptual understanding through dynamic visualization[14]. Therefore, careful planning serves as an essential foundation in the implementation of technology-based learning[15].

The selection of learning media was carried out by considering its suitability to students' learning characteristics as well as its relevance to the Islamic values that form the core of Islamic Religious Education learning. Attractively designed media has been proven to enhance attention, strengthen memory retention, and facilitate students' deeper and more contextual understanding of the material[16]. At SMPI Salafiyah Singosari, teachers utilized animations, thematic illustrations, and audiovisual materials to explain abstract Islamic concepts. These media were designed to bridge the gap between normative material and students' visual and auditory learning styles[17]. This approach has proven effective in simplifying concepts that are difficult to understand verbally, as presenting material through interactive visualization can bridge students' understanding of abstract material. By utilizing media that integrates visual, audio, and interactive elements, the learning process becomes more engaging and can sustain students' focus for longer periods[18]. Therefore, the appropriate selection of media becomes a key element in creating meaningful and contextual learning experiences.

Support for this implementation strategy is further reinforced by findings that the use of social media and podcasts integrated into a Learning Management System (LMS) significantly increases student engagement in online learning[19]. Although the context is at the higher education level, the principle of active engagement through digital media serves as a common thread that strengthens the findings at SMPI Salafiyah Singosari. This emphasizes that the success of digital learning does not solely depend on the tools used but also on the interaction strategies and engagement designed by the teacher[20]. Therefore, the integration of technology-based learning media, when managed appropriately, holds great potential for creating more participatory and meaningful learning.

2. The Effect of Technology-Based Interactive Learning Media on Students' Learning Motivation

The implementation of interactive learning media at SMPI Salafiyah Singosari had a significant positive effect on the Islamic Religious Education learning process, particularly in enhancing both intrinsic and extrinsic student motivation. Based on interviews and field observations, students indicated high enthusiasm when participating in lessons that utilized visual media and interactive quizzes in the PAI subject. This enthusiasm was reflected in increased participation in asking and answering questions, as well as actively engaging in class discussions competitively. The use of interactive media also helped students to understand the values of Islamic teachings in a more contextual and applicable way. This approach aligns with perspectives that emphasize the importance of delivering the teachings of the Qur'an in ways that are relevant to real-life contexts, so that the material is not only easily understood but also internalized and practiced by students in their daily lives[21].

The increase in students' learning motivation is consistent with the ARCS model (Attention, Relevance, Confidence, Satisfaction)[22]. Teachers used learning media that capture attention, are relevant to students' lives, build confidence, and

provide satisfaction through evaluation results. In PAI learning, this was evident when teachers delivered material through animated videos and interactive quizzes such as Wordwall, which made students more active and confident. The four aspects of the ARCS model can be enhanced simultaneously through the appropriate use of interactive multimedia[23]. This approach makes the learning process more enjoyable and helps students contextually understand Islamic values.

In the interviews, students revealed that learning Islamic Religious Education, which they had previously felt was monotonous, has now become more enjoyable. The use of animated videos and digital games made the learning material feel more contextual and easier to understand. The use of interactive media can create a more positive and open classroom atmosphere. These findings reinforce that visual and interactive approaches can bridge the normative values in PAI teachings with students' everyday lives.

Interactive media also encourages the development of students' learning independence. They can access learning materials independently before or after face-to-face sessions, as well as replay videos or practice questions according to their individual needs and abilities. This condition reflects a shift from passive learning to a more constructive and reflective approach. These findings reinforce that digital media–based learning contributes to shaping students' responsibility for their learning process and outcomes[24].

The increase in students' self-confidence is one of the indicators of the successful use of interactive media in learning. Through digital quizzes (Quizizz and Wordwall), students can conduct self-assessment directly and receive instant feedback, which fosters healthy competitive motivation and accelerates the learning process. Strong learning motivation is formed from a combination of internal drive and well-targeted external stimuli[25]. These findings are reinforced by a literature review concluding that effectively designed technology-based learning can enhance students' emotional, social, and cognitive motivation[26]. Thus, this study contributes to formulating a relevant PAI learning model in the digital era and serves as a reference for the development of technology-based curricula in Islamic educational institutions.

3. Supporting and Inhibiting Factors in the Implementation of Technology-Based Interactive Learning Media at SMPI Salafiyah Singosari

The implementation of technology-based interactive learning media at SMPI Salafiyah Singosari is supported by various internal factors that strengthen the effectiveness of the learning process. One of the most prominent is the high enthusiasm of students in participating in learning activities that utilize digital media. Observations show that interactive media such as animated videos, Wordwall interactive quizzes, and content visualization have successfully increased students' attention, encouraged active participation, and created an enjoyable learning experience. Interactive media can enhance learning motivation by fulfilling the aspects of attention, relevance, confidence, and satisfaction (ARCS)[27].

Teacher readiness in designing learning media is also a key supporting factor. Teachers at SMPI Salafiyah not only use the available media but also actively create and adapt learning content to suit students' characteristics. The planning process is carried out by considering the alignment of the material with the curriculum and the needs of technology-based learning. Teacher involvement in media design is a crucial element in creating media that are contextual, communicative, and supportive of student participation[28]. Teachers' creativity in managing media and integrating technology plays a direct role in enhancing the effectiveness of learning.

In addition to individual factors, institutional support is also an important external aspect. SMPI Salafiyah Singosari provides adequate infrastructure, such as projectors, school internet networks, and a computer laboratory, which enable technology-based learning activities to run smoothly. These facilities indicate the institution's commitment to modernizing learning. Schools that integrate digital teaching strategies within a religious context require management policy support as well as sufficient infrastructure investment to ensure optimal implementation. A supportive learning environment also helps to shape a learning culture that is open to innovation[29].

However, the implementation of interactive media also faces several obstacles. Internally, the main challenge lies in the time required by teachers to prepare digital-based materials. Teachers must convert materials into visual or interactive formats, learn the technical functions of various platforms, and adjust their teaching approaches to the dynamics of the media used. This results in an increased workload for teachers and a lack of readiness in teaching. Teachers face considerable challenges in maximizing the use of technology-based media due to their limited ability in media design.

From the students' perspective, the limitation of digital devices is also a constraint that cannot be overlooked. Even though the learning process is conducted offline, not all students have personal devices such as smartphones or laptops that support access to digital media, especially when they need to study independently at home. This obstacle is structural and relates to the students' socioeconomic background. In a similar context, digital media can only have a maximum effect if students have adequate access to supporting technology. This access disparity has the potential to create gaps in the quality of learning among students[30].

Affective aspects such as self-regulation and learning motivation also affect the effectiveness of implementing interactive learning media. Some students require additional guidance to utilize digital media optimally, particularly in the context of time management and learning consistency. Although visually appealing, not all students can maintain a long-term focus on learning without adequate social stimulation. In this matter, digital transformation in education does not rely solely on technology but also on students' readiness to become independent and reflective learners[31]. In other words, the success of interactive media depends on the synergy between technology, people, and a learning culture that is developed gradually[32].

The successful implementation of technology-based interactive learning media at SMPI Salafiyah Singosari is determined by a combination of student readiness, teacher competence in media design, and adequate institutional support. Although there are obstacles such as teachers' limited time or students' access to technology, these factors are not absolute barriers but rather aspects that need to be anticipated to maintain learning effectiveness. The synergy between media innovation, technological support, and psychopedagogical readiness serves as the main foundation for creating contextual and meaningful learning.

CONCLUSION

This study shows that the implementation of technology-based interactive learning media at SMPI Salafiyah Singosari was carried out systematically and in a well-planned manner. The process included the development of teaching modules by the *Merdeka* Curriculum, the selection of media such as Quizizz, interactive PowerPoint, and animated videos to support PAI learning. Teachers served as facilitators who created learning interactions tailored to the characteristics of digital-native students. This indicates the success of SMPI Salafiyah Singosari in building an integrated technology-based learning ecosystem.

Technology-based interactive learning media has a positive effect on increasing students' learning motivation in the Islamic Religious Education subject at SMPI Salafiyah Singosari. Its use has been proven to enhance students' enthusiasm, strengthen attention, foster self-confidence, and create an enjoyable and competitive learning atmosphere. This approach is effective in stimulating both intrinsic and extrinsic learning motivation, thereby making the learning process more meaningful and contextual.

The implementation of interactive learning media is affected by various supporting and inhibiting factors. Teacher readiness, infrastructure support, and institutional openness to technological innovation are the main factors driving the successful integration of digital technology into learning. Meanwhile, challenges such as limited digital devices, access disparities, and the need for continuous training are obstacles that must be managed strategically. These findings emphasize that the effectiveness of technology integration in learning greatly depends on the synergy between human resources, supporting facilities, and adaptive institutional policies.

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