Journal of Insan Mulia Education
E-ISSN: 2987-0585 | Vol. 4, No. 1, 2026
https://doi.org/10.59923/joinme.v4i1.788

Techno-Edutainment as a Learning Strategy for Enhancing Student Engagement in Islamic Religious Education at Muhammadiyah Junior High Schools in Indonesia

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ABSTRACT

Student passivity remains a persistent challenge in Islamic Religious Education, particularly in ISMUBA (Al-Islam, Muhammadiyahan, and Arabic) learning at the junior high school level. While previous studies have examined digital learning and edutainment in general education contexts, limited research has explored the implementation of techno-edutainment in ISMUBA learning. This study investigates how techno-edutainment is implemented, the digital media utilized, and its impact on student engagement in ISMUBA learning at SMP Muhammadiyah 1 Gamping. Employing a qualitative case study design, data were collected through in-depth interviews with three ISMUBA teachers, classroom observations, and document analysis. Data were analyzed using the interactive model of Miles, Huberman, and Saldana, involving data condensation, data display, and conclusion drawing and verification. The findings reveal that techno-edutainment was implemented through the integration of digital and interactive media, with Canva, learning videos, and gamified digital quizzes emerging as the most frequently used tools. These media enhanced student engagement by increasing participation, classroom interaction, responsiveness, and enthusiasm during learning activities. The study also found that the effectiveness of techno-edutainment depended on teachers digital competence, instructional design, and the availability of technological infrastructure. These findings demonstrate that techno-edutainment can serve as an effective pedagogical approach for fostering student engagement in Islamic Religious Education while supporting more interactive and meaningful learning experiences. Sustainable implementation depends on teachers' ability to integrate technology into pedagogically meaningful learning activities supported by appropriate instructional planning and digital competence.

Keywords: Techno-Edutainment; ISMUBA; Student Engagement; Digital Learning; Islamic Religious Education

INTRODUCTION

Currently, junior high school students experience low participation in learning, especially in ISMUBA (Al-Islam, Kemuhammadiyahan, and Arabic) classes. Based on school observation records, most students tended to be passive during the learning process, such as rarely participating in discussions, asking questions, or maintaining focus when teachers used lecture-based methods. This is because conventional learning is not appealing to the digital generation, who prefer interactive, visual, and engaging learning experiences. As a result, when the learning process is teacher-centered, students easily lose focus and are unmotivated. Several studies have shown that technology-based learning media can increase student engagement. Zainuddin et al., (2020) found that gamified e-quizzes increased students' enthusiasm, participation, and learning interaction in classroom activities. Rahmawati et al., (2023) also found that gamification and digital quizzes increased students' motivation and learning interaction. Some studies show that the application of Techno-edutainment can increase students' activeness and interest in learning. (Mamduhah & Rijal, 2025). Through media such as interactive videos, digital quizzes, or educational games, students are more actively involved in learning. Therefore, innovation in the process is needed to integrate Techno-Edutainment into ISMUBA learning (Ulfa et al., 2025).

Techno-edutainment is a learning approach that integrates technology, educational content, and entertainment elements to create interactive and engaging learning experiences that enhance students' motivation, participation, and understanding (Khadijah et al., 2021). In Islamic education, techno-edutainment integrates digital media and interactive learning activities to foster a more engaging learning environment and enhance students' motivation, engagement, and participation in learning (Albab, 2018). In addition,

technology-supported interactive learning media have been found to improve students' understanding of Islamic learning materials and classroom involvement (Susanti et al., 2024). However, these studies mainly focused on edutainment or digital learning media in general Islamic education settings, with limited attention given to the integration of techno-edutainment in ISMUBA learning at the junior high school level. Therefore, this study investigates the implementation of techno-edutainment in ISMUBA learning and its potential to enhance students participation, motivation, and understanding.

The use of interactive media, including educational games, digital quizzes, animated videos, and multimedia presentations, significantly improved students' activeness, motivation, and understanding of ISMUBA materials (Aulia & Toriqularif, 2024). Consistent with these findings, gamification-based religious learning enhanced students' Qur'anic digital literacy, increased learning motivation, and encouraged more active participation in learning activities, particularly through interactive digital features that supported student involvement during the learning process (Rumaisa et al., 2025). Similar results were also reported by Prasetyaningsih et al., (2025), who found that techno-edutainment facilitated students' comprehension of normative and abstract ISMUBA concepts through more contextual and engaging learning formats, enabling students to better understand learning materials that are often perceived as difficult or less accessible.

This article aims to analyze how Techno-edutainment can be effectively designed and implemeted to enhance junior high school students learning activity in ISMUBA learning. Specifically, this study addresses three research questions: (1) How can Techno-edutainment enhance students learning activity? (2) what factors support and hinder its implementation of Techno-edutainment in schools? and (3) How should Techno-edutainment be integrated to align with the objectives of Islamic education and the demands of contemporary learning? By addressing these questions, this study is expected to provide practical and theoretical insights for developing more innovative, adaptive, and effective ISMUBA learning practice.

METHOD

This research employs a qualitative approach using a case study design. This approach was selected because the study aims to gain an in-depth understanding of the process of utilizing techno-edutainment to enhance student learning engagement in ISMUBA (Al-Islam, Muhammadiyahan, and Arabic) subjects at the junior high school level. A case study design is particularly appropriate when researchers seek to explore a contemporary phenomenon within its real-life context and when the boundaries between the phenomenon and context are not clearly evident (Yin, 2018). The study focuses on a single case, namely the implementation of techno-edutainment in Islamic Religious Education learning within a junior high school that has integrated digital technology into its teaching and learning activities. Through this design, the researcher is able to obtain a comprehensive understanding of how techno-edutainment is implemented, experienced, and perceived by participants in the natural educational setting (Creswell & Poth, 2017).

Data were collected through in-depth interviews, classroom observations, and document analysis. The interviews involved three ISMUBA teachers at SMP Muhammadiyah 1 Gamping and explored their experiences in implementing techno-edutainment, the types of digital media used, instructional strategies, perceived impacts on student learning activity, and challenges encountered during implementation. The informants were selected using purposive sampling based on the following criteria: (1) actively teaching ISMUBA subjects at the junior high school level, (2) having direct involvement in planning, implementing, and evaluating techno-edutainment-based learning, (3) possessing at least three years of teaching experience, and (4) regularly integrating digital technology into classroom instruction.

Classroom observations were conducted during ISMUBA learning activities to examine how techno-edutainment media were utilized, student participation and engagement, teacher–student interactions, and the overall learning process. In addition, document analysis was carried out on lesson plans (RPP/teaching modules), learning media, student assignments, and school documents related to the implementation of technology-based learning. The characteristics of the research informants are presented in Table 1.

Table 1. Characteristics of Research Informants

Informant Code	School	Role	Teaching Experience and Grade Assignment
M1	SMP Muhammadiyah 1 Gamping	Teacher	ISMUBA teachers teach for 15 years in grades VII and VIII
M2	SMP Muhammadiyah 1 Gamping	Teacher	ISMUBA teachers teach for 3 years in grades VIII and IX

Informant Code	School	Role	Teaching Experience and Grade Assignment
M3	SMP Muhammadiyah 1 Gamping	Teacher	ISMUBA teachers teach for 4 years in grades VII, VIII, and IX

Data analysis employed the interactive model of Miles et al., (2014) which consists of four interconnected stages: data collection, data condensation, data display, and conclusion drawing and verification. During the data condensation stage, the researcher selected, focused, simplified, and summarized important information obtained from interviews, classroom observations, and document analysis. The condensed data were then organized and displayed in narrative and matrix forms to facilitate the identification of patterns, themes, and relationships among the findings.

During the data condensation stage, all interview recordings were transcribed verbatim and reviewed repeatedly to gain familiarity with the data. The coding process began with open coding, in which meaningful statements related to the implementation of techno-edutainment were assigned initial codes. Similar codes were subsequently grouped into categories through focused coding. These categories were then organized into subthemes and broader themes representing recurring patterns across the data. The coding process was conducted iteratively by continuously comparing interview transcripts, observation notes, and documentary evidence to ensure consistency and accuracy in theme development. The resulting themes were used as the basis for interpreting the findings regarding the implementation of techno-edutainment in ISMUBA learning. The complete framework of the interactive data analysis components utilized in this study is depicted in Figure 1.

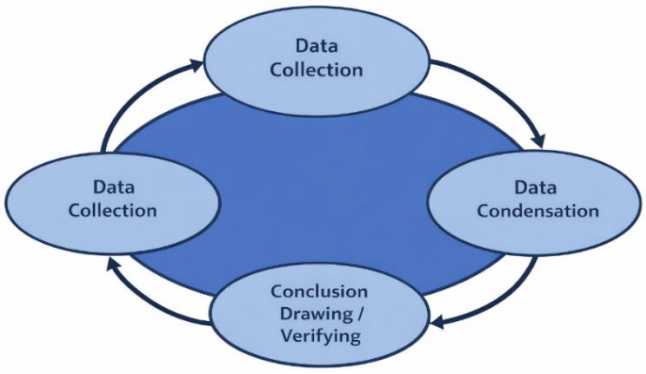

Figure 1. Miles and Huberman's Interactive Model

The final stage involved drawing conclusions and verification, namely interpreting and analyzing the data to answer the research focus on the effectiveness of techno-edutainment in ISMUBA learning. To ensure data credibility, this study employed source triangulation and method triangulation. Source triangulation was conducted by comparing information obtained from the three ISMUBA teachers, while method triangulation was carried out by cross-checking interview data with classroom observation field notes and relevant learning documents. In addition, member checking was conducted by confirming the research findings with the informants to ensure the accuracy of the interpretations. Through these procedures, the findings became more credible and reflected the actual implementation of techno-edutainment in ISMUBA learning at the junior high school level.

RESULTS AND DISCUSSION

The core themes emerging from the interviews, observations, and document analysis regarding the implementation of techno-edutainment are structured into a thematic summary matrix, as presented in Table 2.

Table 2. Thematic Summary Matrix

Theme	M1	M2	M3
Implementation of Techno-edutainment in ISMUBA Learning	*The use of technology to deliver PAI material in an educational, engaging, and still maintaining spiritual values.*	*Integration of technology and digital games in PAI learning.*	*The use of technology and AI through illustration tasks to facilitate the understanding of worship materials.*

https://doi.org/10.59923/joinme.v4i1.788
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Theme	M1	M2	M3
Utilization of Digital and Visual Media in ISMUBA Learning	*Use of Canva, videos, PowerPoint, and educational games.*	*Use of Canva, YouTube, PowerPoint, and Quizizz.*	*Canva, as the main media, is supported by PPT, Google Form, and Quizizz.*
The Impact of Techno-edutainment on Student Learning Activity	*Students are more interested and show increased activity.*	*Students become more active in participating in learning.*	*Digital visual displays increase student engagement and interest.*
Digital Media-Based ISMUBA Learning Planning	*Learning planning refers to CPs, TPs, methods, media, and time allocation.*	*Planning is tailored to the learning materials and media.*	*Adjustment of material points with video and visual media.*
Obstacles and Strategies of Teachers in Digital ISMUBA Learning	*Unstable internet network constraints and solutions through tethering.*	*Limited time, means, and technological competence are circumvented by conventional methods.*	*Limited infrastructure, adaptation of learning methods, and improvements to facilities*

Implementation of Techno-edutainment in ISMUBA Learning

The findings indicate that techno-edutainment has become an important approach in ISMUBA learning. Teachers perceive technology not merely as a supporting tool but as a pedagogical medium capable of making religious learning more relevant, interactive, and meaningful for students. Similar observations were reported by Wahyudi et al. (2023) who argue that technology integration enhances students' access to learning resources and learning motivation in Islamic education. Teachers consistently emphasized that technology should not be separated from the spiritual mission of ISMUBA learning. Rather than being viewed as a threat to religious values, digital media were perceived as tools that can make Islamic learning more engaging while preserving its spiritual orientation. This perspective is reflected in the following statement:

> *"The use of technology to deliver PAI material in an educative, interesting, and still maintaining spiritual values*" (M1, interview, November 19, 2025).

This statement indicates that teachers view technology as a means of reinforcing, rather than replacing, the spiritual objectives of ISMUBA learning. Technology is therefore positioned as a pedagogical tool that supports the transmission of Islamic values while maintaining student engagement.

This result challenges the common assumption that technology may weaken the spiritual dimension of religious education. Instead, the data suggest that technology can function as a medium for strengthening students' understanding of Islamic values when integrated with appropriate pedagogical objectives. From a constructivist perspective, technology provides opportunities for students to actively construct knowledge through interaction with learning resources rather than passively receiving information. This perspective aligns with Mishra and Koehler (2006), who argued that effective technology integration occurs when technological, pedagogical, and content knowledge are combined in instructional practice. Similarly, Kimmons (2020) emphasized that digital technologies contribute to meaningful learning when they are aligned with educational objectives rather than used merely for technological innovation. The present study extends these perspectives by demonstrating that technology can support not only cognitive engagement but also the development of spiritual and moral values within ISMUBA learning. Therefore, technology should be viewed as a pedagogical medium that strengthens, rather than replaces, the value-based orientation of Islamic education.

The findings further reveal the emergence of artificial intelligence (AI) as part of techno-edutainment practices. Teachers employ AI-assisted illustration tasks to facilitate students' understanding of worship-related materials. According to participants, AI-generated visualizations help students comprehend concepts that are often abstract when explained solely through verbal instruction. This practice is illustrated in the following statement:

> *"Teachers apply PAI learning by utilizing technology and AI through the assignment of making illustrations so that students can more easily understand worship materials"* (M3, interview, November 19, 2025).

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This statement suggests that teachers perceive AI not merely as a technological innovation but as a pedagogical tool that facilitates students' understanding of complex religious concepts. By enabling students to visualize abstract worship-related materials, AI supports the learning process in ways that make religious content more accessible and meaningful.

The results extend previous research by demonstrating that AI is not only used to increase engagement but also to support conceptual understanding. In ISMUBA learning, AI helps transform abstract religious concepts into concrete visual representations that are easier for students to comprehend. AI functions as a cognitive scaffolding tool that helps students connect abstract religious concepts with concrete learning experiences. By reducing the level of abstraction, AI-assisted visualizations may facilitate deeper comprehension and knowledge construction. The present result is in line with Fajriati et al., (2024), who found that AI-based learning environments encourage active participation and meaningful learning. Similarly, Wayne et al., (2019) argued that artificial intelligence can enhance learning experiences through visualization, personalization, and student engagement. The present study extends this perspective by demonstrating that AI can also support the learning of religious values and worship-related concepts within value-based Islamic education, an area that has received limited attention in previous AI-in-education research. These results contribute to the growing body of literature on AI in education by demonstrating that artificial intelligence can be integrated into Islamic learning without diminishing its spiritual orientation, provided that its use remains aligned with pedagogical and religious objectives.

Utilization of Digital and Visual Media in ISMUBA Learning

Although teachers reported using several digital platforms, Canva emerged as the most frequently utilized medium. Rather than focusing on the diversity of tools, teachers consistently preferred Canva because of its pedagogical ability to present learning content visually, attractively, and contextually. The shared preference across participants suggests that Canva is valued not only for its ease of use, but also for its ability to support the delivery of ISMUBA materials through visual presentations that make learning more engaging and easier for students to understand.

> *"Conventional learning is less effective due to media limitations, while the use of Canva with visual and image displays makes students more interested and easier to understand the material"* (M3, interview, November 19, 2025).

This finding indicates that the effectiveness of techno-edutainment depends less on technological sophistication and more on the pedagogical value of visual representation. Many ISMUBA topics, including worship practices, morality, and tolerance, involve abstract concepts that students often find difficult to understand through verbal explanations alone. Canva enables teachers to transform these concepts into infographics, visual narratives, posters, and illustrations that facilitate comprehension and retention. In the context of Islamic education, visual representations help make religious concepts more meaningful by connecting them with students' daily lives and learning experiences.

This interpretation aligns with Cahyani and Hindun (2024), who reported that Canva enhances student engagement through visual communication. Similar results have been found in Islamic education contexts, where Canva-based learning media were shown to increase students' interest and facilitate understanding of PAI materials (Wahhab et al., 2023). These findings suggest that Canva offers pedagogical benefits that extend beyond visual attractiveness by supporting students' comprehension of religious content through multimodal learning experiences. This interpretation is consistent with Mayer's Multimedia Learning Theory, which argues that students learn more effectively when information is presented through integrated visual and verbal channels (Mayer, 2024). However, the present study suggests that Canva offers an additional advantage within ISMUBA learning because it facilitates the visualization of religious concepts that are often perceived as abstract and normative. Therefore, the pedagogical value of Canva lies not merely in its aesthetic appeal but in its ability to bridge religious concepts and students' everyday experiences.

The Impact of Techno-edutainment on Student Learning Activity

Although techno-edutainment was generally perceived positively by teachers and students, the findings indicate that increased enthusiasm was not always accompanied by a similar improvement in students' understanding of the material.

> *"Digital games increase students' enthusiasm, but the understanding of the material is not fully optimal"* (M2, interview, November 19, 2025).

https://doi.org/10.59923/joinme.v4i1.788
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The experiences reported by M2 suggest that techno-edutainment may be more effective in stimulating students' behavioral engagement, such as participation, attention, and enthusiasm, than in promoting deeper conceptual understanding. Although students become more actively involved in classroom activities, this increased engagement does not necessarily indicate that they have fully comprehended the content being taught. The discrepancy between students' enthusiasm and their level of understanding highlights the importance of distinguishing engagement from learning outcomes. One possible explanation is that digital games encourage active participation, whereas meaningful learning requires opportunities for reflection, discussion, and the application of concepts. Without these processes, increased enthusiasm may not always be accompanied by deeper understanding. Therefore, high levels of participation should not automatically be interpreted as evidence of content mastery.

This pattern has been discussed in the literature as the engagement–achievement gap, where high levels of motivation and enjoyment are not always followed by corresponding improvements in learning outcomes (Buckley & Doyle, 2017). A similar perspective is reflected in the distinction between behavioral engagement and cognitive engagement, which emphasizes that active participation alone is insufficient to ensure meaningful learning (Fredricks et al., 2004).

These findings provide a deeper understanding of techno-edutainment in ISMUBA learning. Rather than showing that gamification is ineffective, the results suggest that its success depends on how well engaging activities are connected to instructional goals. Although techno-edutainment can increase students' enthusiasm and participation, these aspects alone are not enough to ensure meaningful learning. Therefore, its effectiveness should be evaluated not only through students' engagement but also through their ability to understand and apply what they have learned. This indicates that engagement and understanding are both important aspects of successful learning and should receive equal attention in the design of ISMUBA instruction.

Digital Media-Based ISMUBA Learning Planning

Successful techno-edutainment implementation depends on careful instructional planning. Teachers emphasized that learning objectives, teaching methods, media selection, and time allocation must be aligned before technology is integrated into classroom instruction.

> *"Learning planning refers to CP, TP, methods, media, and time allocation"* (M1, interview, November 19, 2025).

This perspective highlights that technology integration becomes effective when it is embedded within a systematic instructional design rather than treated as a separate component of the learning process. Techno-edutainment should therefore be understood not simply as the adoption of digital technologies but as a pedagogical approach that requires deliberate planning to ensure that technological tools support intended learning outcomes.

The emphasis on planning also positions teachers as instructional designers who determine how technology contributes to meaningful learning experiences. In this context, the educational value of technology emerges not from the tools themselves but from teachers' ability to align technology with learning objectives, content, instructional strategies, and student needs. Without such alignment, technology may enhance engagement temporarily but may not necessarily improve learning quality or achievement.

This interpretation is consistent with Prasetyo and Hamami (2020), who argue that effective instructional planning requires coherence among learning objectives, content, learning activities, instructional media, and assessment. It also aligns with Angeli and Valanides (2009) ICT-TPCK framework, which emphasizes that meaningful technology integration requires the interaction of pedagogical, technological, and content knowledge within specific learning contexts. From this perspective, techno-edutainment represents a pedagogically driven strategy in which technology serves as a means of facilitating active, engaging, and meaningful learning rather than functioning as an end in itself.

Obstacles, Adaptive Strategies, and Implications for Techno-edutainment Implementation

Although the techno-edutainment approach (Althubyani, 2024) positively influences student engagement and learning motivation, teachers continue to face several challenges related to infrastructure, technological access, and digital competence.

> *"Internet or wifi is sometimes unstable*" (M1, interview, November 19, 2025).

https://doi.org/10.59923/joinme.v4i1.788
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Other participants also reported limited infrastructure, insufficient facilities, time constraints, and limited technological competence, which were often addressed by adapting learning methods, relying on conventional teaching approaches, or using personal internet tethering. These constraints indicate that the implementation of the techno-edutainment approach is influenced not only by the availability of technology but also by teachers' ability to integrate digital tools into meaningful learning experiences. In this regard, digital competence plays an important role in enabling teachers to transform technological resources into effective instructional practices. Similar challenges have been reported in Islamic education, where teachers' digital competence is influenced by access to training, technological resources, and institutional support (Budiyanti et al., 2022)

The challenges identified in this study also have implications for the sustainability of techno-edutainment implementation. Limited digital competence may reduce teachers' confidence and flexibility in utilizing technology, leading them to rely more frequently on conventional instructional approaches. As a result, the integration of technology may remain occasional and dependent on individual initiative rather than becoming an established component of everyday teaching practice. This observation supports Mahdun et al., (2019)argument that digital competence is a key prerequisite for sustainable technology integration in education.

Within ISMUBA learning, the issue becomes particularly significant because teachers are expected not only to utilize technology but also to ensure that learning activities remain aligned with Islamic and Muhammadiyah educational values. This responsibility requires teachers to critically select, adapt, and utilize digital resources that support both academic learning and character development (Reksiana et al., 2024). Consequently, digital competence extends beyond technical skills and includes the pedagogical capacity to integrate technology in ways that strengthen student engagement while preserving the moral and spiritual objectives of ISMUBA education.

To address these challenges, teachers adopted strategies such as using personal internet hotspots, utilizing offline-accessible resources, and combining digital media with conventional teaching methods. Beyond these challenges, the findings also revealed several factors that supported the implementation of techno-edutainment in ISMUBA learning. These included the availability of user-friendly digital platforms such as Canva, the use of AI-assisted visualization tools, teachers' willingness to adapt instructional strategies, and lesson planning that intentionally integrated learning objectives, media, and technology. These factors enabled teachers to present religious content in more interactive and meaningful ways while maintaining student engagement throughout the learning process. These findings suggest that the successful implementation of techno-edutainment depends not only on technological resources but also on teachers' pedagogical readiness and their ability to adapt technology to instructional needs (Mishra & Koehler, 2006).

While these strategies demonstrate adaptability, sustainable implementation also requires institutional support through continuous professional development. Therefore, strengthening digital pedagogy, instructional design, and value-oriented technology integration should become important priorities in professional development programs for ISMUBA teachers (Mintasih et al., 2024). Overall, effective techno-edutainment in ISMUBA learning requires careful instructional planning, meaningful technology use, and alignment with Islamic and Muhammadiyah educational values. In this way, technology functions not merely as an instructional tool but as a pedagogical medium that supports contemporary learning while preserving the spiritual, moral, and character-building objectives of ISMUBA education (Hakim, 2020).

CONCLUSION

Based on the results and discussion, this study concludes that techno-edutainment enhances students learning activity in ISMUBA by increasing participation, engagement, and learning motivation through the use of digital and visual media, such as Canva, learning videos, digital quizzes, and gamification. Its implementation is supported by interactive learning media, teacher creativity, and systematic instructional planning, while challenges include unstable internet access, limited facilities, time constraints, and variations in teachers digital competence. The study also shows that the effectiveness of techno-edutainment is influenced not only by the availability of technology but also by teachers ability to align learning objectives, content, methods, media, and assessment with the values and goals of Islamic education. This suggests that technology functions most effectively as a pedagogical tool when it is integrated into coherent instructional design rather than being used as an end in itself. This study is limited to three teacher participants from one Muhammadiyah junior high school. Therefore, the findings should not be generalized broadly without further investigation.

Future research is recommended to involve more diverse educational settings and examine the impact of techno-edutainment on specific outcomes, such as academic achievement, digital literacy, and the internalization of Islamic values.

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