The Impact of Interactive Animation Media on Pancasila Character Development in Islamic Education

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Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh video pembelajaran interaktif berbasis animasi dalam Pendidikan Agama Islam terhadap pengembangan karakter siswa yang berlandaskan nilai-nilai Pancasila. Penelitian ini menggunakan pendekatan metode campuran dengan desain eksplanatori sekuensial, yang menggabungkan analisis kuantitatif dan kualitatif untuk memperoleh pemahaman yang komprehensif. Data kuantitatif dikumpulkan melalui angket dan tes hasil belajar dari 50 siswa di SD Inpres Mannurukki dan SD Inpres Bontobila. Pemilihan kedua sekolah ini didasarkan pada kondisi geografisnya yang berdekatan, sehingga memungkinkan perbandingan untuk mengidentifikasi kesenjangan atau kesamaan dalam penerapan media teknologi pada PAI. Data dianalisis menggunakan statistik deskriptif dan inferensial (korelasi Pearson/Spearman). Hasil analisis kuantitatif menunjukkan tidak ada korelasi yang signifikan antara penggunaan media berbasis teknologi dengan hasil belajar Pendidikan Agama Islam yang berorientasi pada pengembangan karakter Pancasila, dengan koefisien korelasi sebesar -0,096 dan nilai signifikansi sebesar 0,507. Temuan ini justru memberikan kontribusi penting, yang mengindikasikan bahwa teknologi saja tidak cukup untuk membentuk karakter tanpa diperkuat oleh peran guru dan pendekatan humanis. Sementara itu, temuan kualitatif dari wawancara mendalam dengan dua guru dan siswa mengungkapkan bahwa meskipun media teknologi dinilai menarik, efektivitasnya dalam membentuk karakter masih terbatas. Peran guru sebagai panutan, diskusi langsung, dan konteks sosial terbukti lebih dominan dalam menginternalisasi nilai-nilai Pancasila. Oleh karena itu, media berbasis teknologi perlu diintegrasikan secara bijaksana ke dalam strategi pembelajaran yang menekankan pendekatan humanis dan kontekstual.

Kata Kunci: karakter, media pembelajaran, pancasila, pendidikan agama islam, teknologi

Abstract

This study aims to analyze the influence of interactive animation-based learning videos in Islamic Religious Education on students' character development grounded in Pancasila values. The research employed a mixed-method approach with a sequential explanatory design, combining quantitative and qualitative analyses to obtain a comprehensive understanding. Quantitative data were collected through questionnaires and learning achievement tests administered to 50 students from SD Inpres Mannurukki and SD Inpres Bontobila. These two schools were selected based on their geographical proximity, allowing for a comparative analysis to identify gaps or similarities in the implementation of technology-based media in Islamic Religious Education (PAI). The data were analyzed using descriptive and inferential statistics (Pearson/Spearman correlation). The quantitative findings indicated no significant correlation between the use of technology-based media and learning outcomes in Islamic Religious Education oriented toward Pancasila character development, with a correlation coefficient of -0.096 and a significance value of 0.507. This finding provides an important insight, suggesting that technology alone is insufficient to shape character without being reinforced by the teacher's role and a humanistic approach. Meanwhile, qualitative findings from in-depth interviews with two teachers and students revealed that although technology-based media were considered engaging, their effectiveness in shaping character remained limited. The teacher's role as a role model, direct discussions, and social context proved to be more influential in internalizing Pancasila

values. Therefore, technology-based media should be integrated wisely into learning strategies that emphasize humanistic and contextual approaches.
Keywords: character, islamic religious education, learning media, pancasila, technology

Introduction

The rapid development of information and communication technology in today's digital era has revolutionized almost in all sectors of human life (Anggiana & Gunawan, 2023; Grass Ramírez et al., 2023; Nikou et al., 2022; Sirojuddin, 2023; Souza & Debs, 2024), including the education sector which is the main foundation of human resource development. Digital transformation has created a new paradigm in education delivery, where the learning process is no longer limited to physical classrooms or conventional methods, but has shifted towards a more flexible, adaptive and technology-based approach. Technological innovation in education is reflected in the widespread use of digital learning media, such as Learning Management System (LMS), interactive applications, learning videos, augmented reality (AR), and artificial intelligence (AI) that can customize materials according to students' individual needs (Dahri et al., 2024; Neethirajan, 2024; Souza & Debs, 2024; Tamphu et al., 2024; Wahyono et al., 2023). These technology-based media not only act as teaching aids, but also as catalysts in improving learning effectiveness, expanding access to knowledge, and encouraging collaboration across geographical and cultural boundaries.

Globally, this trend is in line with the vision of 21st century education that emphasizes the importance of digital literacy, critical thinking skills, creativity and adaptability in dealing with the complexity of the times (Al Ayyubi, Abdullah, Nurfajriyah, et al., 2024; Al Ayyubi, Bukhori, Komara, et al., 2024; Al Ayyubi, Hayati, Azizah, et al., 2024; Al Ayyubi, Riyadi, et al., 2024; Al Ayyubi, Rohmatulloh, Saputra, et al., 2024). Developed and developing countries are beginning to integrate technology into national curricula in response to global challenges, including inequality in access to education, the need for personalized learning, and the demands of an increasingly dynamic world of work. Thus, the utilization of technology-based learning media is not just an innovative option, but has become a strategic necessity in an effort to create an inclusive, responsive and sustainable education system (Huda, 2020). In the context of Islamic Religious Education (PAI), the presence of technology is not only a tool in delivering material, but also plays a role in shaping the character of students to be in line with the values contained in Pancasila (Al Ayyubi, Muhaemin, Martini, et al., 2024; Murharyana et al., 2024; Mutaqin et al., 2024; Pancawardana et al., 2023; Sabarudin et al., 2023). With more interactive learning methods, technology is able to bridge the gap between Islamic theory and the practice of daily life, so as to improve the understanding and practice of religious values in students' lives.

Islamic Religious Education has a very important role in shaping the morality and character of students (Hayatunnisa et al., 2024). However, the challenge faced today is how to present learning methods that are not only theoretical, but also able to build awareness and application of Islamic values in real life. Through technology, students can access materials flexibly and deeply (Aisida, 2021; Al Ayyubi et al., 2025; Farias-Gaytan et al., 2022),

so that they not only understand religious concepts academically but are also able to apply them in their social lives. Although the use of technology-based learning media offers various conveniences and advantages in supporting the learning process such as broader access to educational resources, greater flexibility in terms of time and location, and the personalization of instructional materials there remain fundamental challenges that warrant serious attention (Al Ayyubi, Rohmatulloh, Suryana, et al., 2024). One of the primary concerns is ensuring that the integration of technology in education does not obscure the core objective of education itself: the formation of students' character and moral values.

In the global discourse on education, numerous scholars and education experts highlight the significance of *technological humanism* an approach that positions technology as a tool to enhance, rather than replace, fundamental human values (Fadli, 2020). The unregulated use of technology, when detached from a strong ethical and moral foundation, can potentially diminish the quality of interpersonal interactions, foster dependency, and erode the noble values that underpin educational goals, particularly in the domain of moral and religious education (Fuad & Masuwd, 2023). This concern holds particular urgency in the Indonesian context, where the national education system is rooted in the principles of *Pancasila*, which emphasize divinity, humanity, unity, democracy, and social justice. Within the framework of Islamic Religious Education, the challenge lies in ensuring that technology functions not only as a medium for disseminating information, but also as an instrument for the internalization of Islamic spiritual and ethical values, which are central to the cultivation of character and moral integrity.

Given this backdrop, the role of educators becomes critically important. Teachers must actively guide and supervise the use of technology in educational settings to ensure it contributes positively to the character development of students. As (Rani, 2023)

argues, without intentional direction, the adoption of educational technology risks becoming superficial, failing to support the deeper, value-laden dimensions of learning. In response to these challenges, this study reviews several scholarly articles to identify research gaps and explore potential novelty regarding the impact of technology-based learning media in Islamic Religious Education, particularly as it relates to character development aligned with Pancasila values. The researchers employed bibliometric analysis using the VOS viewer application to systematically map and analyze the existing body of literature, thereby identifying interconnections, thematic trends, and underexplored areas within this domain.

Based on these issues, the main objective of this study is to analyze and explore how technology-based learning media can be utilized in Islamic Religious Education to shape the character of students in accordance with the values of Pancasila. This study also aims to identify challenges and strategies that can be applied in optimizing technology as a learning tool that is not only effective but also has a positive impact on character development. Thus, this study is expected to contribute to enriching insights on the implementation of technology in education based on religious and national values.

Thus, the utilization of technology-based learning media in Islamic Religious Education must be designed by considering the balance between technological advances and the formation of students' characters based on Pancasila values. The synergy between educators, technology, and national values is needed so that learning is not only about transferring knowledge but also forming students who have intellectual, moral, and social intelligence. With the right strategy, technology can be a powerful tool in creating a generation that is not only proficient in the use of technology but also has a strong character based on the noble values of the nation

Method

This research used a mixed-methods approach with an explanatory sequential design to obtain a comprehensive understanding of the relationship and influence of technology-based learning media in Islamic Religious Education for character development based on Pancasila, as quantitative analysis alone was insufficient to capture the depth of value internalization, while qualitative insights were needed to explore teachers' and students' perceptions more thoroughly. This research was included in a causal-correlational study, which was a method to see the relationship or influence between variable X, namely technology-based learning media and variable Y, namely learning outcomes in Islamic religious education to develop student character based on Pancasila without direct manipulation.

This research was conducted at SD Inpres Mannurukki and SD Inpres Bontobila with a sample of 25 students in each school. The total population consisted of 120 students at SD Inpres Mannurukki and 111 students at SD Inpres Bontobila. A probability sampling technique with a simple random sampling method was employed to ensure that each student had an equal chance of being selected, thereby minimizing researcher bias and increasing the representativeness of the sample. These two schools were chosen because they are geographically close yet have different contextual characteristics, making them suitable for comparison in examining the application of technology-based learning media in Islamic Religious Education. This technique allowed each student to have the same opportunity to be selected as a research sample. The instruments used in this study include questionnaires, learning evaluation tests, and interviews.

Based on this, the data analysis techniques used in quantitative methods use descriptive statistics and inferential statistics assisted by SPSS version 26. This is used to describe how the initial condition of the data and test hypotheses in order to produce conclusions that are inherent in making generalizations. The instruments were tested for validity and reliability before use to ensure the data obtained was accurate and consistent. The data obtained were first analyzed with inferential statistics, namely the normality test using Kolmogorov-Smirnov and the linearity test to determine the linear relationship between variables X and Y. If the data is normally distributed, it is continued with a parametric statistical test using the Pearson test which is then carried out the Regression test to determine the correlation equation, but if the data is not normally distributed, it is continued with a non-parametric statistical test using the Spearman test without then doing the regression test.

In the qualitative stage, thematic analysis was conducted to identify, analyse and report patterns in the data. This method helps to find the meaning contained in interviews, observations, and documentation by classifying information into certain themes. This method is often used in research to understand the experiences, perceptions, and meanings contained in a phenomenon such as the focus of this study. The steps of thematic analysis in this research include (1) Familiarisation with the data; (2) Generating initial codes; (3) Searching for Themes; (4) Reviewing Themes; (5) Defining and Naming Themes; and (6) Writing the analysis report

Results and Discussion
Results

The normality test was carried out to determine whether the data obtained comes from a normally distributed population or not, this is done as a condition for testing on inferential statistics. In this case the researchers used Kolmogorov-Smirnov in terms of conducting a normality test.

Table 1. Output Data Normality Test

		Statistic	Sig.
Value	Var_X	.222	.000
	Var_Y	.227	.000

Based on the data in Table 1 above, the significance value for variables x and y is 0.000. From this data it is obtained that the significance value is smaller than 0.05, so based on the decision-making criteria it can be concluded that the data is not normally distributed.
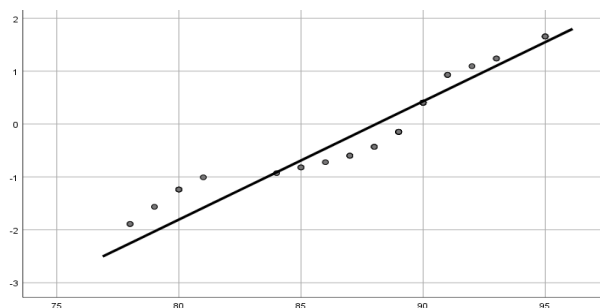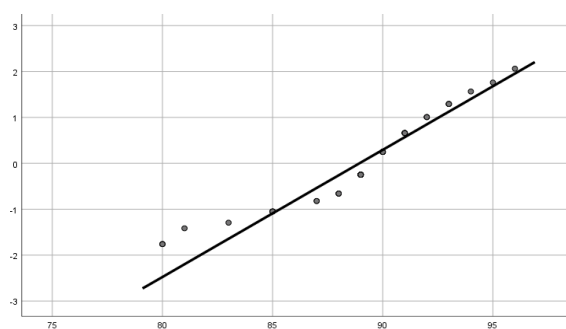

Figure 2. Normal Q-Q Plot VarX

Figure 3. Normal Q-Q Plot Var_Y

In the Normal Q-Q Plot diagram of the independent variable and the dependent variable, it can be seen that the data or points on the diagram do not spread around the diagonal line and are far from the diagonal line, so the data can be said to be not normally distributed. Then to see how strong the relationship of the correlation value is explained in the table below.

Tabel 2. Correlations

		Var_X	Var_Y
Learning Media	Correlation Coefficient	1	-.096
	Sig. (2-tailed)		.507
Learning Media	Correlation Coefficient	-.096	1
	Sig. (2-tailed)	.507	

Based on the data in the table above, the significance value of the x and y variables, namely technology-based learning media and Islamic religious education learning outcomes is 0.507. From this data, it was obtained that the significant value> 0.05, so based on the decision-making criteria Ho was accepted, so it can be concluded that technology-based learning media does not have a significant correlation with Islamic Religious Education learning outcomes in developing student character based on Pancasila. While the value of the correlation coefficient is -0.096, the relationship between variable X and variable Y can be considered very weak and may not have a practically significant meaning. The value of -0.096 < 0 also indicates that if one variable increases, the other variable tends to decrease, showing an inconsistency in their relationship. However, the absence of a significant correlation does not mean that this research has failed. On the contrary, it provides an important contribution by revealing that the development of Pancasila-based character is influenced more strongly by non-technological factors such as teacher role modeling, direct discussions, and social context. Thus, the findings highlight that technology alone is insufficient to shape character without being supported by humanistic and contextual approaches.

To complement the quantitative findings, researchers conducted in-depth interviews with two Islamic Religious Education (PAI) teachers one from each primary school and several students to gain deeper insights into their perceptions and experiences regarding the use of technology-based learning media. These interviews aimed to further explore their perceptions and experiences in the use of technology-based learning media, especially in relation to character building based on Pancasila values. Data were analyzed using a thematic approach, by identifying patterns of meaning that emerged from the respondents' statements. The results of the interviews showed that most students positively welcomed the use of technology-based media in PAI learning. They feel that learning becomes more

interesting, especially when accompanied by animated videos, visual images, or educational games. However, this interest is not always accompanied by a deep understanding of the material. One student from SD Bontobila said,

"I like watching videos when learning about religion, but sometimes I forget the content."

This shows that although technological media can attract attention, its effectiveness in instilling understanding of the material still needs to be further evaluated. On the other hand, PAI teachers revealed various challenges in implementing technological media. One of the main challenges is technical constraints, such as limited internet access, inadequate devices, and students' readiness to operate the technology.

"If the weather is bad, the internet is down, so children can't access the material,"
said one teacher from Mannurukki primary school. In addition, some teachers also felt that the use of technology is often only complementary, and does not replace the important role of direct approach and dialogue in learning religious values.

Furthermore, in terms of instilling character and Pancasila values, teachers stated that the use of technological media has not been fully effective. They still rely on traditional approaches such as storytelling, group discussions, and teacher exemplification as the main strategies. A teacher from SD Bontobila explained,

"To shape children's character, I still use stories and direct discussions more often, not through media."

This indicates that the transformation of student character still requires an interactive and humanist approach, which cannot be fully replaced by technology. Overall, the results of these qualitative interviews support the quantitative findings that technology-based learning media have not shown a significant correlation to PAI learning outcomes and Pancasila-based character strengthening. Although technology brings innovation and convenience, its implementation needs to be adjusted to the context of values learning, which demands depth, exemplification, and emotional closeness between teachers and students

Discussion

Based on the results of data analysis conducted in this study, it was found that the use of technology-based learning media did not show a significant relationship with Islamic Religious Education (PAI) learning outcomes, especially in the aspect of developing student character based on Pancasila values. This finding indicates that although technology-based learning media such as interactive videos, digital learning applications, and e-learning platforms are increasingly used in the educational environment, their existence has not been able to have a meaningful impact on the achievement of character values taught in PAI subjects. This could be due to several factors.

First, technology-based media emphasize more on the cognitive aspect or knowledge alone, while character development requires a deep affective and psychomotor approach, including exemplification, habituation, and direct experience. In the context of PAI, characters such as tolerance, mutual cooperation, honesty, and responsibility are not sufficiently taught through visual or digital media, but must be instilled through direct interaction, coaching, and habituation in daily life. Secondly, the use of technological media that is not accompanied by appropriate pedagogical strategies tends to be passive and informative. This means that students only become consumers of information, not active actors in the value internalization process. As a result, the noble values of Pancasila that should be part of students' character are not strongly embedded. Third, there is a possibility that teachers or educators have not optimally integrated Pancasila values into the learning technology content used. For example, the learning apps or videos used focus more on memorizing material without linking it to relevant character values. In fact, the essence of PAI is not only to understand religious concepts

theoretically, but also to practice them in real life in accordance with the spirit of Pancasila.

This finding shows that technology is only a tool, not the main determinant in students' character building. Therefore, there is a need for a holistic approach that combines the use of technology with value-based learning methods, such as contextual learning, teacher exemplification, value discussions, and social project activities that actively involve students in the application of Pancasila values. Thus, although technology-based learning media has great potential in supporting the teaching and learning process, in the context of Islamic Religious Education and student character development based on Pancasila, a more comprehensive and humane approach is still needed so that these values can be truly embedded and manifested in students' real behavior. A significance value greater than 0.05 and a correlation coefficient of -0.096 indicate that the relationship between the two variables is very weak and even negative. This indicates that an increase in the use of technological media does not necessarily increase students' understanding of PAI materials or strengthen Pancasila-based characters.

This finding is reinforced by qualitative data obtained through interviews with students and teachers in two primary schools. Students do feel that the use of technology makes learning more interesting and fun. However, the visual appeal has not been able to guarantee deep conceptual understanding. Some students admitted to enjoying the video-based content, but had difficulty in remembering or understanding the moral messages and teachings conveyed. This indicates a gap between emotional attraction and internalization of PAI values reflect a condition where students may show emotional attraction to Islamic Religious Education (PAI) materials, but have not fully internalized or made the values part of their daily behavior and personality. Emotional attraction refers to students' initial affective responses, such as liking, interest or emotional engagement with the subject matter. For example, students feel happy when watching videos about the Prophet's story, interested in Islamic inspirational stories, or enthusiastic about participating in religious discussions that are delivered interactively. However, this emotional response is not necessarily directly proportional to the value internalization process, which is a deep process in which religious values are truly understood, believed, and manifested in real attitudes and actions.

This gap can occur due to several factors. First, learning that focuses too much on entertainment or visual aspects, such as the use of attractive digital media, often only touches the emotional surface of students without exploring the deeper meaning of the values conveyed. As a result, students feel happy learning PAI, but have not understood the essence of the teachings or do not feel encouraged to practice them in their daily lives. Secondly, value internalization requires a more complex and continuous process. It involves not only cognitive understanding and emotional involvement, but also habituation, personal reflection, and concrete experience. Without consistent guidance from teachers, a supportive environment, and opportunities to practice these values in real life, students will find it difficult to truly make PAI values a guide to life. Third, students may experience a conflict of values between what is taught at school and what they see or experience in their family, peers, or social media. In this context, although they are emotionally attracted to PAI lessons, the values do not receive sufficient support from the environment outside school, thus failing to be strongly internalized.

This gap is important to look at because one of the main objectives of Islamic Religious Education is the formation of noble character and a person who has faith, morals, and is based on the values of Pancasila. If students only stop at the emotional stage and do not reach the internalization stage, then the purpose of religious education will not be fully achieved. To overcome this gap, PAI teachers need to develop learning strategies that are not only emotionally engaging, but also able to guide

students through the internalization process. This can be done through value reflection, experiential learning, real role models from teachers, and student involvement in contextualized social and religious activities. PAI teachers also highlighted various challenges in the utilization of technology, ranging from technical constraints such as unstable internet connections, to students' lack of readiness and limited supporting facilities. In addition, teachers tend to think that student character building, especially Pancasila values such as gotong royong, religiosity, and integrity, is more effective through direct interaction, role modelling, and open discussion. Technology-based media is considered more suitable as a tool, not as the main media in teaching these noble values.

Technology-based Learning Media

Learning media is an essential and inseparable component in the educational process, serving not merely as an auxiliary tool, but as a strategic instrument that facilitates the transfer and transformation of knowledge, values, skills, and attitudes from educators to students. In the pedagogical framework, learning media is more than just a means of delivering content it is a central element in the instructional design that plays a critical role in fostering active engagement, enhancing comprehension, and creating a dynamic, interactive, and student-centered learning environment. Through the appropriate use of media, abstract ideas can be concretized, student curiosity can be stimulated, and the overall quality of learning can be significantly improved.

From a theoretical standpoint, the role of learning media is deeply rooted in communication theory and learning theory. According to communication theory, media functions as a channel or conduit that links the communicator (in this case, the teacher) with the communicant (the student), thereby influencing the clarity, reception, and retention of the messages conveyed. An effective communication process depends heavily on the type and quality of media used, as well as its alignment with the audience's needs and context. From the perspective of learning theory particularly cognitivism and constructivism media is not just passive content delivery but an active enabler of mental processes. Cognitivist approaches emphasize that media can aid in the organization and storage of information, while constructivist theories highlight the role of media in allowing learners to explore, construct meaning, and apply knowledge in real-life contexts.

The evolution of media in the educational sphere is closely tied to technological advancements and societal changes. Traditionally, learning media was limited to simple visual aids such as chalkboards, posters, textbooks, and physical manipulatives. However, in the modern era, especially in the wake of rapid digitalization and the shift to online learning during the COVID-19 pandemic, the repertoire of media has expanded exponentially. Now, educators can utilize multimedia presentations, virtual labs, gamified learning applications, mobile learning platforms, augmented reality (AR), virtual reality (VR), and artificial intelligence (AI)-based tools. These innovations have transformed the landscape of education, enabling more personalized, accessible, and adaptive learning experiences for diverse groups of students across geographic and socioeconomic boundaries.

However, learning media is not only a technical component it also holds pedagogical, psychological, and cultural significance. The careful selection and integration of media in learning activities can influence students' mindset, attitudes, and internalization of values. For instance, culturally responsive media can affirm students' identities and make learning more relatable, while interactive and immersive tools can nurture higher-order thinking skills such as analysis, synthesis, and evaluation. When learning media is chosen with a clear understanding of students' developmental

stages, learning preferences, and socio-emotional needs, it can boost intrinsic motivation, deepen engagement, and support differentiated instruction.

Furthermore, the role of media extends beyond content delivery to become a facilitator of meaningful interaction. It allows for the creation of collaborative learning environments where students can co-construct knowledge through discussions, simulations, and digital storytelling. It also supports formative assessment practices through real-time feedback mechanisms embedded in digital tools, enabling teachers to monitor progress and adjust instruction accordingly. In this sense, learning media becomes a bridge not only between teacher and student, but also among students themselves and between students and the real world. In the context of 21st-century learning, media literacy has emerged as a critical competency for both educators and learners (Dhir, 2021; Khumairoh, 2022; Martínez-Bravo et al., 2022; Ningsih, 2023; Tijsma et al., 2020). Teachers must possess the ability to select, adapt, and integrate appropriate media into their teaching, taking into account the alignment with instructional goals, the cognitive load of learners, and the socio-cultural realities of the learning environment. They must also be capable of evaluating the effectiveness of media in enhancing learning outcomes and addressing learning gaps. Similarly, students need to be equipped with the skills to critically engage with various forms of media, understand underlying messages, and use media as a tool for knowledge creation and problem solving.

In conclusion, learning media serves a multidimensional function in education: it is a channel of information, a facilitator of interaction, a stimulus for engagement, and a driver of transformation in both teaching practices and student learning experiences. As emphasized by Tamphu et al. (2024) media enables the visualization of concepts that are otherwise difficult to grasp through verbal explanation alone, making it essential in the teaching and learning process. Additionally,

Sabrina (2019) highlights that the effectiveness of media lies in its contextual fit with student characteristics and learning objectives. Therefore, in an era marked by complexity, diversity, and technological advancement, educators must be reflective and strategic in their use of media not only to enhance academic achievement but also to support holistic student development.

Learning media acts as a tool or intermediary in conveying information from educators to students in an educational communication process. In this case, educators act as communicators who deliver material, while students as recipients of messages. In order for learning effectiveness to increase, the learning environment needs to be designed systematically by selecting appropriate methods and using technology that supports understanding of the material (Fauzi et al., 2025). The use of visual media such as images and diagrams can help clarify abstract concepts, while audiovisual media such as educational videos can increase the appeal and involvement of students in the learning process. In the digital era, the integration of technology in learning media is increasingly needed to create a more interactive and flexible learning experience. Online learning platforms, educational applications, and digital simulations allow students to learn independently according to their own speed of understanding (Nurhikmah, 2024). However, it emphasizes that the success of using learning media, including technology-based media, is not only determined by the sophistication of the tools or the quality of the content, but is also very much determined by the competence, readiness, and active role of educators in the learning process.

Learning media is basically just a tool designed to support and enrich the teaching process. However, if the media is not managed properly by educators, its function can be less than optimal and even hinder the learning process. Therefore, the readiness of educators plays a very crucial role in determining the extent to which the media is effective in achieving learning objectives. First, educator

readiness includes technical understanding of the media used. Educators must have adequate digital literacy to be able to operate learning media appropriately, overcome technical obstacles, and adjust media to student characteristics. Lack of mastery of technology can result in learning time being wasted just to set up tools, or media not being used optimally according to learning objectives. Second, educator readiness also involves pedagogical skills, namely how a teacher designs learning strategies that are appropriate to the character of the media and the needs of students. Media, although sophisticated, will not be meaningful without the right pedagogical context. For example, teachers must be able to determine when media is used, how to present it, and how to evaluate the results so that they truly support learning as a whole.

Third, the psychological aspects and attitudes of educators also have an influence. Educators who are open to innovation and change tend to be more receptive and adopt new media in learning. Conversely, teachers who are less confident or reluctant to adapt to technology tend to use media sparingly, or may even avoid using it altogether. Fourth, optimizing learning media is also related to the creativity of educators. Creative teachers are able to modify and adjust media to suit the material being taught and the characteristics of students. They can also integrate educational values, such as religious or moral values, into the media used, making it not only visually attractive but also substantively meaningful. Thus, learning media is not an automatic solution to challenges in the teaching and learning process. Without educators who are technically, pedagogically, and mentally prepared, learning media can lose its effectiveness. Therefore, teacher training, professional development, and institutional support are needed so that educators have adequate readiness in managing and optimizing learning media sustainably.

Therefore, training and improving the competence of educators are important factors in supporting the success of learning. With a systematic approach and the use of appropriate media, the delivery of information can take place more efficiently and meaningfully, thereby improving the overall quality of education (Akbar, 2021; Hutami & Widiana, 2021; Kurniati, 2022; Nafisa & Wardono, 2019; Syarifudin, 2021). The use of information and communication technology (ICT) in education has significant goals and benefits. This technology has several main functions in the learning process, including: 1) ICT acts as a tool that supports the teaching and learning process, both for educators and students. This technology can be used for various purposes, such as compiling administrative programs, creating graphics, and managing databases that support the smooth running of the education process, 2) ICT also functions as a field of science. This means that information and communication technology is not only a tool, but also a discipline that needs to be studied and mastered by students. For example, in the 2006 Curriculum, ICT subjects are taught specifically to equip students with knowledge and skills in this field, 3) ICT acts as a learning resource and learning media. With this technology, educators and students can access various information that supports the learning process. Technology-based learning resources enable learning to be more interactive, dynamic, and effective, thereby increasing students' understanding of the material being studied (Widianto, 2021). Thus, overall, the use of ICT in learning brings various benefits, ranging from helping educational administration, enriching knowledge, to facilitating a more efficient and innovative learning process.
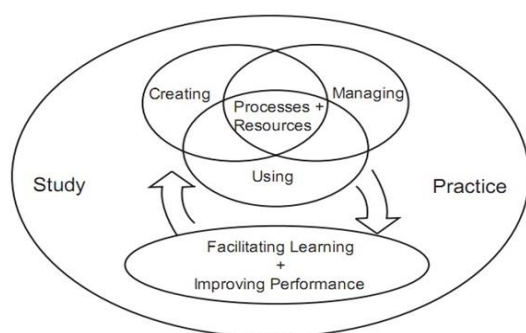
Figure 4. Technology and Education

Based on the image above, we can see the domain of educational technology based on Association for Educational Communications and Technology (AECT) in 2008. In this diagram, educational technology covers two main aspects, namely study and practice. Study focuses more on research and theory development, while practice emphasizes the application of technology in the learning process, showing a difference in orientation between the academic world (theoretical) and the practical world (applicative) in the context of utilizing technology in education. On the academic study or research side, the main focus lies on the exploration, analysis, and development of theories underlying the use of technology in learning. Researchers usually explore various approaches, technology-based learning models, and how classical and modern educational theories can be adapted and developed in a digital context. In these studies, technology is often positioned as an object of study, not merely as a tool.

For example, research can discuss the effectiveness of blended learning, cognitive theory in interactive media, or the influence of gamification on learning motivation. Research also often includes in-depth analysis of factors that influence the success of technology use, such as teacher readiness, student characteristics, socio-cultural context, and infrastructure support. The ultimate goal is to produce a solid theoretical foundation that can be used as a reference in developing educational policies and learning practices in the field. On the other hand, in the context of field practice, the main focus is more on how the technology can be applied directly and effectively in the daily learning process. Educational practitioners such as teachers and instructors are more concerned with how technology can be used to improve efficiency, attractiveness, and student learning outcomes in real terms. In practice, the approach used is usually pragmatic. The question that often arises is no longer "why is technology important in learning?" but "how can this technology be used effectively in my class?" or "which application is most suitable for teaching this material to my students?" Learning practices are oriented towards solutions that are fast, easy to implement, and can provide measurable results.

This difference in focus often creates a gap between the world of theory and practice. Research may produce innovative technology-based learning models, but these models cannot necessarily be directly adopted in practice due to various constraints such as limited facilities, time, or teachers' technical skills. On the other hand, practices that take place in the classroom sometimes run without a strong theoretical basis, so their effectiveness in the long term is less measurable. Therefore, it is important to bridge these two worlds through a collaborative approach. Theoretical studies must consider the realities of the field, while learning practices need to be supported by an adequate scientific basis so that the application of technology is not haphazard or simply following trends.

With the synergy between study and practice, the use of technology in education will be more meaningful, focused, and able to answer the challenges of the times holistically, not only sophisticated in terms of tools, but also strong in terms of philosophy and pedagogy. There are three main elements in educational technology, namely creating, managing, and using. Creating refers to the development of new technologies, strategies, or resources to support learning. Managing relates to organizing and arranging technology so that it can be used effectively. Meanwhile, using means applying technology and resources that

are already available in the teaching and learning process. In the middle of the diagram, educational technology is depicted as a field that involves processes and resources in supporting learning. The main goal is to facilitate learning to be more effective and improve student performance. This diagram also shows the relationship between study and practice, which support each other in achieving learning goals. Overall, educational technology is not just the use of devices or learning aids, but also includes various processes and strategies to increase learning effectiveness.

Islamic Education

Islamic Religious Education (PAI) is an integral and inseparable part of the national education system, playing a pivotal role not only in the transmission of Islamic knowledge but also in the comprehensive formation of a Muslim personality that is spiritually grounded, morally upright, and socially responsible. It is not limited to teaching religious theories or rituals; rather, PAI is constructed as a deliberate, systematic, and well-planned educational process designed to guide, nurture, and equip students with the understanding, internalization, and application of Islamic values in all spheres of life. These include personal conduct, family relations, societal engagement, and even global citizenship, thereby ensuring that Islamic teachings permeate every aspect of a student's character and worldview.

Philosophically, Islamic Religious Education is grounded in a holistic and integrated educational paradigm that emphasizes a harmonious balance among three main domains of human development: cognitive (knowledge and reasoning), affective (attitudes, values, and emotions), and psychomotor (behavioral skills and actions). This approach aligns closely with the overarching objectives of Islamic education as encapsulated in the concept of maqashid al-shari'ah the preservation of religion (din), life (nafs), intellect ('aql), progeny (nasl), and

wealth (mal). These five principles are not merely theoretical foundations, but they serve as practical goals that guide the moral and spiritual development of students, forming the ethical backbone of a just and balanced society. In this framework, PAI becomes a vital medium for developing students' integrity, resilience, empathy, and sense of justice from an early age.

In the context of global transformations and the complex demands of the 21st century, the strategic importance of PAI is increasingly recognized. As societies around the world grapple with issues such as moral relativism, identity crises, radicalism, and the erosion of cultural values, Islamic Religious Education is expected to offer not just doctrinal answers, but also practical moral guidance rooted in universal Islamic values. These include tolerance, mutual respect, compassion, justice, peace, and responsibility values that are not only religious imperatives but also essential for peaceful coexistence in a pluralistic world. As such, PAI should serve as a catalyst for producing individuals who are not only devout in their personal faith but also contribute positively to global peace and human dignity (Muhibah, 2020).

In terms of curriculum and implementation, Islamic Religious Education must evolve beyond its conventional, teacher-centered model. It is imperative that PAI is delivered using pedagogical approaches that are dynamic, relevant, and engaging particularly those that reflect the realities of today's learners. Contextual learning allows students to connect religious teachings with real-life issues; integrative approaches help blend PAI with other disciplines such as social studies, language, and even science; while technology-based learning makes religious content more accessible and interactive. The use of multimedia, online learning platforms, virtual discussions, and digital storytelling, for example, can enrich the delivery of PAI and make it more appealing to the digital-native generation. Furthermore, experiential methods such as case studies, role-playing, simulations,

and community-based service learning can provide students with meaningful opportunities to practice Islamic values in tangible ways.

Therefore, Islamic Religious Education is not merely a channel for transferring religious knowledge, but more importantly, it serves as a transformative process for shaping the spiritual and moral quality of individuals. This transformation is essential in building a society that is not only religious in appearance but also ethical, inclusive, and socially just. In this light, the success of PAI lies in its ability to foster students who are not only intellectually aware of their religious obligations, but who also embody the values of faith (iman), devotion (taqwa), and noble character (akhlaq al-karimah). These students are expected to emerge as individuals who are morally upright, emotionally intelligent, and capable of engaging in constructive dialogue with others across cultural and religious boundaries.

In conclusion, the role of Islamic Religious Education extends far beyond classroom instruction. It is a lifelong process of value formation that equips students with the moral compass and ethical resilience needed to navigate contemporary challenges. When effectively integrated into the broader educational ecosystem, PAI has the potential to produce generations of Muslims who are not only spiritually enlightened but also socially engaged, nationally loyal, and globally competent. Hence, the continuous refinement of PAI curriculum, teaching strategies, and assessment methods is a critical endeavor in realizing the full potential of Islamic education in Indonesia and beyond.

In the world of formal education, Islamic Religious Education plays a very crucial role in shaping students' morals and character. Learning Islamic religion in schools is not only about transmitting theoretical religious knowledge, but also aims to instill Islamic values in the lives of students. Through an integrative approach, students are expected to understand Islam not only as a science, but also as a guideline for life that they can apply in their daily lives. Islamic Religious Education

functions as a bridge to form a balance between intellectual, spiritual, and social aspects, thus producing individuals who are not only intelligent in thought, but also have concern for others and their environment (Kamal, 2023). Furthermore, PAI plays a role in instilling moral and ethical values that are in accordance with Islamic teachings. In the modern era full of challenges, religious education is the main foundation in forming a generation that has integrity, social responsibility, and awareness of the importance of living life according to Islamic values. PAI not only teaches about the procedures for worship, but also guides students to have an honest, disciplined attitude and respect for others (Fauzi et al., 2025). Thus, religious education does not only focus on cognitive aspects, but also on affective and psychomotor aspects, all of which contribute to forming individuals with noble character (Jailani et al., 2021; Nafiati, 2021; Ulfah & Arifudin, 2021).

Overall, Islamic Religious Education has a very important role in forming a whole person who is able to carry out the dual role as a servant of Allah and a caliph on earth. Individuals who receive good religious education are expected to be able to uphold the values of truth, justice, and humanity in every aspect of their lives. In facing various global challenges, religious education should not be underestimated, because it functions as a moral fortress for future generations. Therefore, strengthening the curriculum and teaching methods of Islamic Religious Education (PAI) is a strategic necessity in facing the challenges of an increasingly complex and dynamic era. In the midst of the rapid flow of globalization, technological advances, and shifting values in modern society, PAI can no longer be delivered with a conventional approach alone. Curriculum innovation and learning methodology are needed that are more contextual, participatory, and touch the affective aspects of students more deeply. Educators are challenged to design learning experiences that are not only informative but also transformative encouraging students to

reflect, internalize, and actualize the teachings of Islam in their social lives. Moreover, collaboration between schools, families, and communities is essential to create a conducive environment for religious learning that is meaningful and sustainable. By doing so, PAI will be able to fulfill its function not just as a subject in the curriculum, but as a living value system that shapes the mindset and behavior of students in facing real-world situations.

Strengthening the PAI curriculum must be interpreted not only as the addition of teaching materials, but also as the rearrangement of educational content that is able to respond to the real needs of the younger generation of the transformational approach to the development of the PAI curriculum. This emphasizes that strengthening the curriculum is not enough to be done quantitatively by increasing the amount of material, but must touch on more essential qualitative aspects, namely the relevance, context, and meaningfulness of educational content to the lives of today's students.

First, adding teaching materials alone can make the curriculum denser, but it does not necessarily improve students' understanding or character formation. In fact, too much and non-contextual material can actually burden students, reduce interest in learning, and distance the substance of religious education from the reality of their daily lives. Therefore, the reinforcement approach must be more than just increasing content; it must be able to touch the spiritual, emotional, social, and intellectual needs of today's young generation. Second, restructuring educational content means reorienting the curriculum, namely restructuring Islamic Religious Education materials to be more adaptive to the challenges of the times. The younger generation lives in a digital era with various global influences, social media, identity crises, and rapid changes in social values.

Therefore, Islamic Religious Education materials must be able to answer current issues such as radicalism, intolerance, moral crises, moral degradation, and the negative influence of popular culture. This means that Islamic Religious Education materials need to be designed not only to transfer religious knowledge, but also to build awareness, critical understanding, and life skills that are in accordance with Islamic values and Pancasila. Third, the strengthened curriculum must open up space for a more dialogical, contextual, and applicable learning approach. Teachers are not only conveyors of dogma, but also facilitators who help students interpret religious teachings in the context of real life. This can be done through methods such as case studies, value discussions, reflections, community-based projects, and technology integration in learning. For example, teachings about honesty can be linked to the challenges of digital culture, hoaxes, and social media ethics (Abyakta et al., 2023). Fourth, curriculum strengthening also includes evaluation aspects. Evaluation of PAI learning must transform from mere memorization and cognitive knowledge tests to assessments of students' attitudes, habits, and behavioral changes. This requires a holistic and sustainable approach in assessing religious learning outcomes (Priyanto, 2020).

Finally, meaningful strengthening of the PAI curriculum is one that is able to foster a young generation that is not only symbolically religious, but also has moral integrity, social empathy, and a strong national spirit. The PAI curriculum must be a bridge between noble religious teachings and the dynamic reality of life, so that PAI is truly alive and relevant in the souls and daily behavior of students. The ideal curriculum is a curriculum that not only transmits knowledge about faith, worship, and morals, but also integrates Islamic values with contemporary socio-cultural challenges such as plurality, moral crisis, radicalism, to environmental issues and digital technology. Thus, students can interpret Islamic teachings as a solution to various life problems, not just a collection of doctrines. On the other hand, the PAI teaching method also needs to undergo a transformation. Religious teachers in the

modern era are required to be more creative in delivering teaching materials, utilizing various approaches such as project-based learning, case studies, technology-based learning (digital learning), and contextual learning that links religious materials with the realities of everyday life. This approach has proven to be more effective in building deep understanding, critical attitudes, and forming strong character.

In addition, this strengthening also includes training and improving the competence of educators, periodic evaluation of the effectiveness of the curriculum, and active involvement of parents and the community in the education process. All of these elements are interrelated in creating a holistic and effective religious education ecosystem. By strengthening the curriculum and adaptive and relevant teaching methods, PAI is expected to produce a young generation that is not only intellectually intelligent, but also spiritually mature, has noble morals, and is able to become agents of change that bring good values to personal, social, and national life

Conclusion

Based on the results of this study, it can be concluded that the use of technology-based learning media in Islamic Religious Education (PAI) has not demonstrated a significant relationship to the development of student character based on Pancasila values. The statistical analysis results reveal that the correlation between the use of technology media and student learning outcomes related to Pancasila values is not statistically significant. In fact, the correlation coefficient found is very weak and shows a negative direction. This suggests that the presence of technology in the learning process while potentially engaging and innovative does not automatically translate into the successful internalization of moral and character values in students. Technology, in this context, appears to serve more as a supplementary tool rather than a transformative instrument in character education.

Qualitative findings reinforce this quantitative conclusion. While students express excitement and increased motivation when exposed to digital learning tools such as videos, animations, or interactive applications, their comprehension and appreciation of Islamic and Pancasila-based values remain superficial. Many students enjoy the media as a form of entertainment or stimulation, but they often miss the deeper moral messages being conveyed. Teachers involved in the study also note that technological media tends to focus more on content delivery than on value formation. As a result, students may remember facts or concepts presented in the media but struggle to connect them with ethical behavior or real-life application. Moreover, educators emphasized that the most effective means of instilling character values are still rooted in human interaction through the role modeling of teachers, direct dialogue, and reflective discussions grounded in everyday life experiences. These approaches allow students to see, feel, and reflect upon values in a way that resonates personally and socially. The teachers' presence as figures of moral authority and emotional support cannot be replaced by screens or automated content. In addition to pedagogical concerns, technical barriers were also found to hinder the optimal use of technology in PAI learning. Many schools still face inadequate infrastructure, such as limited access to devices, unstable internet connections, and a lack of technical support. These conditions make it difficult to implement technology-enhanced learning consistently and equitably across student populations.

Thus, it can be concluded that the development of student character based on Pancasila within the context of Islamic Religious Education cannot rely solely on the integration of technology. While digital media can play a supporting role in enhancing engagement and access to information, it cannot substitute for the essential human elements of education such as empathy, dialogue, moral reflection, and personal interaction. Technology must be positioned as a complementary tool within a broader, more holistic learning approach that prioritizes human connection, spiritual guidance, and contextual relevance. To achieve meaningful and sustainable character education in this digital era, it is necessary to

foster a balanced integration between innovative digital tools and traditional values-based pedagogical strategies. Only through this synergy can education fulfill its mission of producing intellectually competent, morally grounded, and socially responsible individuals in accordance with Islamic teachings and the spirit of Pancasila

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