# TRENDS IN AI-BASED LEARNING MEDIA FOR STRENGTHENING CHARACTER AND ENHANCING STUDENT MOTIVATION

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## Abstract

The rapid development of Artificial Intelligence (AI) has significantly influenced the transformation of learning media in education, including in Indonesia. Beyond improving academic achievement, AI-based learning media offer potential contributions to strengthening students' character and enhancing learning motivation. This study aims to systematically review research trends related to AI-based learning media in supporting character development and learning motivation among students. The study employs a Systematic Literature Review (SLR) method by analyzing national scholarly publications published between 2021 and 2025. The findings indicate that AI-based learning media, particularly adaptive learning systems and interactive digital platforms, contribute positively to students' intrinsic motivation through personalized learning experiences and immediate feedback. Moreover, AI-based media have the potential to support character strengthening by fostering responsibility, independence, and reflective learning, provided they are integrated with sound pedagogical design and guided by teachers. The study concludes that AI-based learning media can function as strategic pedagogical tools to support holistic student development when implemented ethically, contextually, and under strong teacher facilitation.

**Keywords:** artificial intelligence in education, learning media, character education, learning motivation, systematic literature review

## INTRODUCTION

Advances in artificial intelligence (AI) technology have brought significant changes to the world of education, including in the development of learning materials. AI-based learning materials enable personalized learning, real-time feedback, and more accurate analysis of students' learning needs. In Indonesia, the use of AI in education has begun to grow alongside rising digital literacy and educational digital transformation policies that encourage the integration of technology into the learning process (Ministry of Education, Culture, Research, and Technology, 2022). This situation opens up significant opportunities for the development of learning media that are not only academically effective but also capable of addressing students' affective and character needs.

In recent years, the focus of educational technology utilization in Indonesia has no longer been limited to improving cognitive learning outcomes but has also been directed toward character development and enhancing student learning motivation.

Character education has become a national strategic agenda due to increasingly complex moral, social, and cultural challenges in the digital era. Research indicates that appropriately designed learning media can serve as a means for internalizing character values such as responsibility, honesty, cooperation, and empathy (Suyanto & Jihad, 2021). In this context, AI-based learning media holds the potential to deliver contextual, reflective, and character-building learning experiences for students.

AI-based learning media enables the presentation of adaptive and interactive learning scenarios, allowing students to learn through simulations, problem-solving, and continuous reflection on values. Several studies in Indonesia indicate that the use of AI in learning can support character development through mechanisms such as value-based feedback, the

cultivation of positive behaviors, and the reinforcement of ethics-based decision-making within the context of digital learning (Hidayat & Kurniawan, 2021). Thus, AI functions not only as a technical tool but also as a pedagogical medium with the potential to strengthen character dimensions within the educational process.

In addition to character development, student learning motivation is a critical aspect frequently examined in the utilization of AI-based learning media. Learning motivation serves as the primary driver of student engagement in the learning process and directly influences learning success. National research indicates that adaptive and interactive learning media can enhance student learning motivation by providing learning experiences tailored to individual needs, interests, and abilities (Wahyuni & Anwar, 2022). AI-based learning media, through personalization features and instant feedback, are deemed capable of boosting students' intrinsic motivation by presenting meaningful and relevant learning challenges.

However, the use of AI in learning is not without pedagogical and ethical challenges. Several studies in Indonesia highlight that the use of AI without a well-developed pedagogical design has the potential to diminish the teacher's role and displace the human interaction that is crucial in the character-building process (Utami & Sudirman, 2023). Therefore, AI-based learning media must be designed and implemented as supportive tools that reinforce the teacher's role, not replace it. Teachers remain key facilitators, guides in values, and makers of pedagogical decisions regarding the use of AI technology.

From a policy perspective, the government of Indonesia has begun responding to AI developments by drafting guidelines for the use of digital technology and AI in education. These policies emphasize the importance of AI literacy, ethical technology use, and student data protection as part of responsible digital education governance (Kemendikbudristek, 2023).

This policy support indicates that the trend of AI-based learning media in Indonesia is moving toward more systematic integration oriented toward educational values.

Although various studies and practices have been conducted, systematic research mapping trends in AI-based learning media in relation to character development and enhancing student learning motivation remains relatively limited. Some studies tend to focus on the technical aspects of AI use or its impact on cognitive learning outcomes, while the dimensions of character and motivation have not yet been comprehensively synthesized. Yet, a holistic understanding of how AI-based learning media influence affective aspects and values is crucial as a foundation for developing sustainable educational policies and practices (Suharsaputra, 2023).

Therefore, the Systematic Literature Review (SLR) approach is deemed relevant for this study. SLR enables researchers to systematically and transparently identify, evaluate, and synthesize research findings related to AI-based learning media. Through SLR, a comprehensive overview can be obtained regarding the types of AI-based learning media used, trends in their application, and empirical evidence regarding their contribution to strengthening character and enhancing student learning motivation in the Indonesian educational context.

Based on the above, this study aims to systematically examine trends in AI-based learning media in strengthening character and enhancing student learning motivation. This study is expected to provide theoretical contributions to the development of educational technology and character education research, as well as offer practical recommendations for teachers, schools, and policymakers in utilizing AI-based learning media in an ethical, effective, and holistic manner focused on student development.

## METHOD

This study employs a Systematic Literature Review (SLR) approach to critically and comprehensively examine trends in artificial intelligence (AI)-based learning media for character building and enhancing student motivation.

The SLR approach was chosen because it allows researchers not only to inventory previous research findings but also to interpret patterns of AI utilization in learning from conceptual, contextual, and pedagogical perspectives. In educational technology studies, the SLR is considered relevant for integrating scattered and diverse findings into a systematic and meaningful framework of understanding (Suharsaputra, 2023).

The literature search process was conducted in stages, with the Indonesian educational context as the primary focus of the study. Data sources were obtained from accredited national journal articles, scientific seminar proceedings, education policy reports, and academic books published between 2021 and 2025. The databases used included Google Scholar, Garuda, and SINTA, as these platforms represent scientific publications relevant to national education practices and policies. The time frame was limited to ensure that the analyzed literature reflects the latest developments in the use of AI in education in Indonesia (Kemendikbudristek, 2023).

The literature search was conducted using a combination of keywords developed iteratively, such as AI-based learning media, artificial intelligence in education, digital character education, learning motivation, and learning technology. These keywords were used flexibly and adapted to the terminology commonly used in national publications. This approach aims to capture the diversity of terms and perspectives used by Indonesian researchers

In discussing AI and learning, so that the search results are not limited to a single specific technical term (Hidayat & Kurniawan, 2021).

The retrieved literature was subsequently screened based on conceptual and pedagogical relevance. Articles were selected if they explicitly discussed the use of AI or intelligent systems in learning media and linked them to aspects of character, learning motivation, or students' affective experiences. Publications that focused solely on the technical aspects of AI without any connection to the learning process or student development were excluded from the analysis. This selection process involved a critical review of titles, abstracts, and manuscript content to ensure alignment with the research focus (Wahyuni & Anwar, 2022).

The literature analysis employed a reflective thematic analysis approach, which involves identifying key themes emerging from various studies and interpreting the interconnections among these themes within the context of Indonesian education. The themes analyzed include the characteristics of AI-based learning media, the role of AI in supporting character development, mechanisms for enhancing student learning motivation, the role of teachers in utilizing AI, as well as the accompanying ethical and pedagogical challenges. This approach enables the researcher not only to present a summary of findings but also to build an integrative understanding of the dynamics of AI utilization in learning (Nurhadi & Senduk, 2023).

The synthesis of analysis results is conducted using a narrative-analytical approach, emphasizing comparisons among research findings, highlighting dominant patterns, and identifying remaining research gaps. Researchers also link these findings to national education policy directions and practical needs in schools. Thus, the SLR results do not stop at mapping trends but also provide an argumentative foundation for the development of practices and policies regarding the use of AI-based learning media oriented toward strengthening students' character and learning motivation (Suyanto & Jihad, 2021).

Through this procedure, this study is expected to produce a review that is not only methodologically systematic but also pedagogically and contextually relevant. The SLR approach used enables researchers to construct a comprehensive picture of how AI-based

learning media are utilized in Indonesia, the extent of their contribution to character development and student learning motivation, and how these practices can be developed ethically, inclusively, and sustainably in the future.

## RESULT AND DISCUSSION

The findings of the Systematic Literature Review indicate that the use of artificial intelligence (AI)-based learning media in Indonesia has seen significant growth over the past five years, in terms of media variety, pedagogical objectives, and implementation approaches.

Thematically, the SLR findings indicate that AI-based learning media widely used in the Indonesian educational context include adaptive learning systems, recommendation-based learning applications, educational chatbots, and digital platforms utilizing learning analytics. These media are designed to tailor content, difficulty levels, and feedback based on students' learning characteristics and needs. Research indicates that AI-facilitated personalized learning enhances student engagement because students perceive the learning as more relevant and aligned with their abilities (Wahyuni & Anwar, 2022).

Regarding character development, the study's findings suggest that AI-based learning media have the potential to support the internalization of values through mechanisms of habituation, reflection, and behavior-based feedback. Several national studies report that AI can be used to simulate social and moral situations, thereby training students to make decisions that reflect character values such as responsibility, honesty, and cooperation. AI-based media designed with contextual scenarios have proven capable of encouraging students to reflect on their choices of action and understand the moral consequences of each decision (Hidayat & Kurniawan, 2021).

From the perspective of learning motivation, SLR results indicate that AI-based learning media positively contribute to enhancing students' learning motivation, particularly intrinsic motivation. Adaptive learning systems that provide challenges tailored to students' ability levels foster self-confidence and a desire to continue learning. A national study reports that students using AI-based learning media demonstrate higher levels of engagement, active participation in learning, and greater perseverance in completing learning tasks (Prasetyo & Rahayu, 2024).

Additionally, the study's findings indicate that the instant feedback provided by AI-based media plays a crucial role in maintaining students' learning motivation. Quick and specific feedback helps students understand their mistakes, refine their learning strategies, and directly experience their learning progress. Several studies in Indonesia indicate that such feedback can reduce learning anxiety and enhance students' positive attitudes toward learning, particularly in subjects considered challenging (Wahyuni & Anwar, 2022).

The SLR findings also reveal a strong correlation between learning motivation and character development in the use of AI-based learning media. AI-based learning media designed to encourage self-reflection, collaboration, and responsibility for learning can strengthen both aspects simultaneously. National research indicates that when students are given the space to control their learning process through AI-based media, a sense of responsibility and independence emerges—qualities that are part of students' positive character (Suyanto & Jihad, 2021).

On the other hand, the SLR results also identify several challenges in the implementation of AI-based learning media in Indonesia. These challenges include regional disparities in technology access, limited teacher competencies in utilizing AI, and concerns regarding ethical aspects and student data protection. Several studies highlight that without clear regulations and guidelines, the use of AI has the potential to foster technological dependency and diminish the quality of human interaction in learning (Kemendikbudristek, 2023).

## DISCUSSION

The national literature reveals a paradigm shift in the use of learning technology, from merely a tool for delivering content to an intelligent medium that plays an active role in managing students' learning experiences. AI-based learning media are no longer viewed as supplementary technology, but rather as part of a learning ecosystem with the potential to simultaneously shape students' cognitive, affective, and character development (Ministry of Education, Culture, Research, and Technology, 2023).

Findings regarding personalized learning indicate that AI supports a learner-centered approach. This personalization not only enhances engagement but also creates a more meaningful learning experience. This reinforces the view that adaptively designed technology can serve as an effective pedagogical tool for improving the quality of learning (Wahyuni & Anwar, 2022).

However, character development through AI-based tools is not automatic. AI functions solely as a medium, while the internalization of values still requires the active role of teachers as guides and role models. Research in Indonesia indicates that when AI is used without strong pedagogical guidance, learning tends to focus on mechanically completing tasks and risks neglecting the value dimension (Utami & Sudirman, 2023). Therefore, AI-based learning media must be designed and implemented within a clear character education framework, with teachers as the primary controllers of the learning process.

The interconnection between learning motivation and character development indicates that affective and moral aspects cannot be separated from cognitive processes. Students who are intrinsically motivated tend to be more open to learning values and more reflective in the learning process (Suyanto & Jihad, 2021).

Thus, AI has the potential to serve as an integrative tool supporting students' holistic development. From the perspective of the teacher's role, the use of AI-based learning media demands a transformation of the teacher's role from an information provider to a designer of learning experiences and a facilitator of values.

Teachers are expected to be able to interpret the data and recommendations generated by AI to make appropriate pedagogical decisions. AI literacy competencies and pedagogical understanding are key factors in the successful implementation of AI-based learning media to strengthen students' character and learning motivation (Suharsaputra, 2023).

Overall, the synthesis of studies indicates that the trend of AI-based learning media in Indonesia is moving toward a more holistic utilization focused on the comprehensive development of learners. The use of AI in learning is not merely a technological innovation but also a pedagogical strategy to cultivate a generation of learners with strong character and motivation, supported by clear educational policies and ethics (Ministry of Education, Culture, Research, and Technology, 2023).

## CONCLUSION

Based on the findings of the Systematic Literature Review, it can be concluded that artificial intelligence-based learning media play an increasingly strategic role in educational practice in Indonesia, particularly in efforts to strengthen character and enhance student motivation. The development of AI-based learning media indicates a shift in the function of technology from merely a tool for delivering content to an intelligent system capable of managing students' learning experiences in a more personalized, adaptive, and interactive manner.

This study indicates that the use of AI-based learning media has the potential to support character building through the instillation of values, behavioral reflection, and the development of students' learning autonomy. AI-based learning media designed with an appropriate pedagogical approach can encourage students to take responsibility for their learning process, adopt a reflective attitude, and develop positive character values within the

context of digital learning. However, character development through AI does not occur automatically; rather, it heavily depends on the teacher's role in guiding, mentoring, and consciously instilling values throughout the learning process.

Furthermore, AI-based learning media have been proven to contribute to increased student learning motivation, particularly intrinsic motivation. Personalized learning, learning challenges tailored to students' abilities, and quick, specific feedback are key factors driving student engagement and perseverance in learning. Increased learning motivation not only impacts academic participation but also strengthens students' positive attitudes toward the learning process and the school environment.

Overall, the findings of this study confirm that the trend of AI-based learning media in Indonesia is moving toward a more holistic utilization focused on the comprehensive development of students. AI-based learning media will have an optimal impact when integrated with student-centered pedagogical design, supported by adequate teacher competencies, and grounded in clear educational policies and ethics. With this approach, AI-based learning media has the potential to become a strategic instrument in shaping students who are of good character, motivated, and ready to face educational challenges in the digital age.

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