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AI-Based Learning Design Strategy for Teachers of State Junior High School 1 Surakarta in Improving Student Integrity and Cognition

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Abstract

This study aims to analyze the strategies of SMP Negeri 1 Surakarta teachers in designing AI-based learning to improve students' academic integrity and cognitive abilities. The research uses qualitative methods with case study design and phenomenological approaches. Data was collected through in-depth interviews and literature studies to understand teachers' practices and perceptions in depth. The use of AI is instrumental and selective, especially for efficiency in the preparation of teaching materials and learning administration. The Learning Community Collaboration Forum (KomBel) is an important forum to share practices and filter ideas for the use of technology. The school applies a controlled mediation model to technological supervision, while academic integrity is built through strict rules and internalization of values. Cognitive differentiation strategies were developed by teachers even though the use of AI for adaptive personalization was not optimal. The study shows that the success of AI integrity depends on the central role of teachers as designers, facilitators, and integrity guards, as well as the synergy between technology and traditional pedagogical wisdom. The implementation of AI is effective when positioned as a complement (tool) within a strong policy framework and school culture.

Keywords: Artificial Intelligence, Learning Design, Academic Integrity, Student Cognition

Introduction

In the digital era, the presence of technology, especially artificial intelligence (AI), provides innovative solutions to answer challenges in the learning process, such as differences in student learning characteristics and constraints on the availability of teacher resources (Astuti et al., 2025). The use of AI in learning includes various aspects, including the provision of automatic feedback, the creation of teaching materials tailored to individual learning profiles, and the facilitation of understanding difficult concepts through interactive simulation experiences. The development of technology, which continues to accelerate, has a deep and wide impact on various sectors of life, including the education sector. The use of artificial intelligence (AI) applications in learning and teaching in the world of education continues to increase significantly day by day (Ahmad et al., 2021).

However, this development has fueled anxiety about the extent to which the facilitation provided by AI can support the learning process without eroding the depth and cognitive engagement of individuals (Adari et al., 2025). Learning planning is one of the key aspects of teachers' pedagogic competence that determines the direction, strategy, and quality of the teaching and learning process. The professionalism of teachers is reflected in their ability to implement professional competence in the learning process. A professional teacher has adequate knowledge, skills, and attitudes in carrying out his duties and responsibilities. One of the efforts to improve the quality of learning is to utilize digital-based media and artificial intelligence (AI) to create more interactive and fun learning models in the classroom (Hakeu et al., 2023).

The presence of AI in the world of education aims to complement, not take over the role of teachers. Armed with AI, teachers can shape, plan, and implement effective methods to maximize learning outcomes (Indrawati, 2023). Teachers play an important role in sorting out and adjusting ideas from AI so that learning designs remain in accordance with the character of students and Islamic values. Teachers also need to be equipped with clear and systematic guidance on how to incorporate AI into the learning planning process. The guide must cover all stages, starting from the analysis of learning needs, the formulation of learning objectives, the selection of appropriate strategies, to the preparation of assessments and learning reflection activities (Tan et al., 2025).

Thus, in responding to the challenges and opportunities brought by artificial intelligence (AI) to the world of education, teachers can implement a number of integrated strategies to design learning that leverages AI without sacrificing the academic integrity and depth of students' cognitive processes. This strategy is centered on the principle that technology should serve as a reinforcement of human capabilities, not a substitute for them. The effective implementation of AI in education does not lie in replacing the role of humans, but rather in their collaboration. This is where teachers maintain their central role as a source of motivation and inspiration to instill fundamental values such as

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empathy and honesty, while AI acts as *a supporting tool* to maximize efficiency and learning outcomes (Ulimaz et al., 2024).

Based on these challenges and principles, this study focuses on the strategies of SMP Negeri 1 Surakarta teachers in designing AI-based learning to improve students' integrity and cognition. The main question answered was: How do SMP Negeri 1 Surakarta teachers understand the role of AI in supporting the achievement of students' integrity and cognitive goals in learning? Through this question, the researcher will examine the design process and implementation of the achievement of student integrity and cognition.

Although many studies on the integration of AI in education have developed rapidly, AI-based learning design strategies at the state junior high school level, especially in the context of Indonesian teacher collaborative cultures such as Learning Communities (KomBel). While conceptually, previous research has tended to examine the impact of AI on cognitive achievement or academic integrity challenges separately, in fact, in practice, teachers face both demands simultaneously. AI has been widely adopted and used in education, particularly by educational institutions, in various forms (Chen et al., 2020).

Various cutting-edge studies show that the implementation of AI-based learning strategies significantly improves student cognition, engagement, and integrity. The integration of AI in the learning process has been shown to increase students' cognitive engagement by up to 85% with a strong correlation to academic achievement ($r = 0.83$) (Villaver & Cabigas, 2025), as well as increasing academic outcomes by 28% through the AI-enhanced cognitive trips approach (Rahma S. Thakir Dr, 2025). Research on 54 junior high school students showed a significant increase in cognitive engagement after using AI-based prompting strategies ($p < 0.05$) (Ramadana et al., 2025).

In terms of cognitive regulation, the AI-Integrated Metacognitive Learning Resilience (AIIMLR) model showed high validity (CFI = 0.917; RMSEA = 0.079) and reliability α 0.897–0.948, and improved students' metacognitive abilities by up to 66% compared to traditional learning (Ayasrah et al., 2025). In addition, aspects of integrity and ethical literacy have also increased significantly: the application of affective, cognitive, and ethical AI-based approaches increased ethical awareness by 72% and reflective thinking by 65% (Ng et al., 2023).

Meanwhile, AI-gamified learning systems are able to increase learning motivation by 52.3% and strengthen academic integrity through real-time monitoring of learning behavior (Al-Rousan et al., 2025). With national data showing that the science and mathematics literacy scores of Indonesian students are still around 52.1% (Ministry of Education and Culture, 2023), the implementation of AI-based learning strategies at SMP Negeri 1 Surakarta is a strategic and urgent step to grow students who are cognitively intelligent, metacognitively resilient, and have high integrity in the digital era.

This research is here to fill this double gap by exploring strategies aimed at achieving these two goals in an integrated manner. The purpose of this research is to explore and analyze the understanding of SMP Negeri 1 Surakarta teachers of the role of AI as a tool in designing learning with a dual purpose, namely building academic integrity while developing students' cognitive abilities.

Research Methods

This study uses a qualitative method with an intrinsic single case study design, focusing on the context of SMP Negeri 1 Surakarta. A phenomenological approach is applied to explore lived experience and the subjective meaning of teachers as the main actors in the use of Artificial Intelligence (AI) for learning design. Data collection is carried out in a triangulated manner to obtain a wealth of perspective and ensure the validity of the findings.

The main technique used is interview, the research subjects include History teachers and Islamic Religious Education teachers at SMP Negeri 1 Surakarta. The criteria for selecting informants include active and intentional experience in using AI to design learning. In addition to primary data from interviews, secondary data was obtained through literature review of relevant scientific sources, both from within and outside the country. All data collected is then synthesized and dialogued with supporting theories, such as Technological Pedagogical Content Knowledge (TPACK) and the concept of academic integrity in the digital era (Soto & Herrera, 2024). This process aims to identify the patterns, strategies, and deep meanings of the phenomenon being studied.

Results and Discussion

The Challenges of Utilizing AI in Learning Design

The demand to design contextual teaching tools emerged in response to the limitations of digital learning resources. This is where Artificial Intelligence (AI) comes in as a strategic solution. Teachers can leverage AI to design adaptive learning, designing multiple versions of different materials or assignments with its ability to simplify lesson planning. This created efficiency space can then be diverted to improve the quality of hands-on teaching and educational interaction with students (Diana et al., 2025).

The effectiveness of the use of AI in the design of teaching materials is highly dependent on the suitability of the pedagogical approach that underlies it. Technological Pedagogical Content Knowledge (TPACK) offers an ideal theoretical and practical foundation for comprehensively integrating AI in 21st century education (Mulyatiningsih et al., 2025). The main challenge for teachers in secondary education is to respond appropriately to the diversity of students, where conventional methods are often inadequate. Differential learning is presented as a pedagogical answer with the principle of adjusting content, processes, and learning outcomes. However, this principle can only be realized if teachers are able to combine learning design creativity with a deep understanding of students, an understanding that must continue to be built through diagnostic and formative assessments (Khoiruddin, 2024).

Based on the results of interviews in the field, it was revealed that the use of AI by teachers of SMP Negeri 1 Surakarta showed that the use of AI in learning planning was considered quite helpful. AI is one of the facilities provided to help human work, especially in teaching and learning activities. One of the teachers stated that it helped a little with the AI, especially in preparing learning needs such as the platform teaching tool that I usually use is Gemini.

However, the teacher also emphasized that the process of using it still requires the selection and adjustment stage. Even though AI produces material, teachers still have to adapt it to their needs and desires so that the results of AI can be synchronized with the learning needs that will be needed. Because AI is only a supporting role while teachers remain the main leaders in the learning preparation process.

Learning design is not only based on learning theories such as behaviorism and cognitivism as guidelines for the preparation of activities, but also on the management of learning technology that regulates the planning and control of resources. The key to success lies in an integrated approach that combines the excellence of technology with the essence of traditional teaching to create effective learning (Sirait & Dewi, 2024).

SMP Negeri 1 Surakarta has a teacher collaboration forum called KomBel (Komunitas Belajar). This forum consists of four groups that function as a forum for sharing good practices. Each group becomes a space for teachers to discuss new experiences, strategies, and knowledge that they have gained both from internal activities such as workshops and webinars, as well as from direct application in the classroom. The topics covered often relate to the use of technologies such as AI and coding.

The strength of this forum lies in the principle *of peer learning*, where resource persons do not always come from outside, but can be taken from internal teachers who have specific expertise. Through KomBel, teachers collectively deepen their understanding of teaching materials, develop effective learning strategies, and encourage the creation of various educational innovations.

On the one hand, PAI teachers actively collaborate through MGMP by exchanging examples of lesson plans and discussing. But on the other hand, the adoption of digital technology is still very limited and only serves as an additional tool. Another factor that also hinders the digitalization process is the work culture that still relies on conventional methods (Farhanah et al., 2026). In practice, teachers do not completely design their own learning, but refer to the results of collaboration within MGMP. Even though he uses digital platforms such as Quizizz, the learning materials and structure still follow the guidelines set by MGMP.

According to him, although many online learning resources are available, these materials are not necessarily in accordance with the instructions from the provincial MGMP, especially for religious learning which must be in line with regional policies. On the other hand, the implementation of the Independent Curriculum is not necessarily followed by a change of textbooks, so teachers need to add certain materials when facing exams. In the preparation of lesson plans, PAI teachers tend to adjust the order of the existing chapters and coordinate with PAI teachers in their respective schools. As for improving planning competence, PAI teachers usually take part in special training held at the provincial level.

Through proper training, teachers can improve three key competencies: designing interactive materials, optimizing AI tools, and developing learning strategies that meet the demands of the times. The development mindset is the main foundation for teachers to be able to adapt, continue to learn technology, and create innovations in the classroom (Hadi et al., 2025).

The results of the interview revealed that there was a difference in approach in designing learning between History teachers and Islamic Religious Education teachers at SMP Negeri 1 Surakarta. History teachers prepare Learning Implementation Plans independently according to learning needs, while Islamic Religious Education Teachers still rely on the Learning Implementation Plan agreed upon from MGMP as the main foundation.

In this situation, the use of AI is not intended to take over the task of the learning designer, but rather to serve as a support in the development and adaptation phases. As in the History subject, AI helps in the preparation of chronological sequences, diagrams of the concept of events and the simplification of factual content. Meanwhile, for Islamic Religious Education, AI is more often applied to create various reflection activities and adjust contextual illustrations in accordance with the MGMP guidelines.

Implementation of Learning in the Classroom: Mediation of Technology in Educational Interaction

Education is the main pillar that shapes the future direction of a country. In a contemporary era marked by very rapid technological advances, educational changes are essential to maximize the learning potential of students to the maximum (Hidayati et al., 2023). AI-based personalized learning is able to create an adaptive learning experience according to the competency profile of each student. This technology functions to recognize the level of ability of students, so that

learning content can be adjusted to their understanding. More so, this approach also plays a significant role in increasing student engagement, where material relevant to their interests and learning styles will foster greater interest and participation in learning (Wati et al., 2025).

Findings in the field show that the implementation at SMP Negeri 1 Surakarta is currently limited to the use of technology in schools is still limited to public facilities. AI is positioned only as an aid, not a substitute for the role of teachers. In principle, teachers should not rely entirely on AI to avoid getting caught up in its convenience, which risks making teachers passive. The purpose of its use is to achieve results that are in accordance with the learning plan and conditions that have been set. Regarding the use of telephones (HP) by students, school policy limits them to learning purposes only. Cellphones can be used when teachers need them to support activities, such as daily tests or online-based numeracy literacy. If it is not needed, students must keep their cellphones in the homeroom locker in the teacher's room.

In practice, using cellphones for daily repetitions often raises a dilemma. Students often abuse the sophistication of AI to search for immediate answers. To address this, schools tighten supervision during assessments and continue to instill an understanding that cellphones are just technical tools, not means of getting instant answers through AI. The implementation of AI and technology at SMP Negeri 1 Surakarta is still at the instrumental and defensive stages. Technology is adopted with great caution, where the benefits of efficiency for teaching and presentation preparation are balanced with great concern for the erosion of academic integrity. The pattern that emerged was mediated and moderated mediation, where technology is present but its role is filtered, controlled, and time-limited by the teacher.

Learning activities that focus on students, with awareness giving extra attention to involve their initiative and allow for social interaction between students (Kartika et al., 2024). The model is effective in maintaining classroom authority and honesty standards, but it has not touched on AI's transformative potential for adaptive personalized learning. The recommendation for the future is the need to transition from a paradigm of control to an ethics-based paradigm of independence, by equipping students with the skills to use technology critically and responsibly, so that technology-mediated educational interactions can occur both inside and outside the classroom without sacrificing integrity."

Product differentiation allows students to choose the type of learning outcomes that match their personality, thereby increasing intrinsic motivation and engagement. Students' creativity will develop if they feel they have freedom, ability, and a sense of attachment in the learning process (Nasrodin et al., 2025).

Impact on Student Cognition: An Analysis of Achievement and Differentiation Strategies

Cognitive development is a comprehensive process related to thinking skills, such as reasoning, remembering, memorizing, solving practical problems, having ideas, and being creative with the wave material taught during teaching and learning activities (KBM), which will be optimal if students are able to understand the material presented. Brain development is divided into two parts, namely the left brain and the right brain. The left brain encompasses logical and rational ways of thinking, while the right brain has the ability to think holistic, imaginative, and creative (Budiyana et al., 2025).

Research in the field of neuroscience reveals that emotions also play a crucial role in memory mechanisms. Good emotions can improve memory, while stress and anxiety can actually damage it. Therefore, students urgently need a positive learning atmosphere and provide support (Komariah et al., 2025). Students with different cognitive levels certainly need different treatment. We group students based on grade achievement, for those who are lacking we provide remedial programs, while for those whose grades are above average, we provide enrichment services. Whether using AI or not, the basic principle remains the same: once the material is delivered in various methods, we conduct an assessment.

The results of these assessments are the basis for identifying the student's ability categories (more, less, or moderate) and determining appropriate interventions, such as remedial programs for students who need them. In practice, teachers are able to distinguish between answers from AI and student work, because AI language tends to differ stylistically and in complexity compared to the typical language of students. The curriculum as a learning plan gives students the freedom to learn in a peaceful, relaxed, exciting, no-burden environment, so that they can develop their natural potential. Learning is a process that creates variety by providing opportunities for students to collect and manage information, so that the learning process becomes more productive and learning outcomes can be improved (Nikmah et al., 2025).

A learning strategy can be defined as a design of learning activities that are designed to be carried out by educators and students in order to achieve the learning goals that have been set. The existence of teachers plays a crucial role in providing religious and moral education to students. Because the character and morals of each student are unique, Islamic religious education has the potential to form good character and morals with an appropriate approach (Furqon & Nugraha, 2024).

Learning outcomes are defined as the final achievement of students after the educational process whose evaluation is based on three dimensions, cognitive (thinking), affective (behavior and character), and psychomotor (proficiency). These achievements are influenced by two categories of factors, namely internal factors that come from students (mental, physical condition) and external factors that come from outside the students (program curriculum, learning atmosphere, teaching ability). In this case, students' independent behavior in learning is seen when they proactively face task challenges by looking for learning resources in person, this shows a sense of responsibility and understanding of the

value of learning, ultimately learning autonomy can have a positive impact on the academic achievement achieved by students (Lestari et al., 2022).

Integrity Cultivation: Proactive Strategies in the Digital Environment

In the face of the modern era of highly technological learning such as AI and HP, teachers are encouraged to innovate to create teaching media that makes it easier for students to understand the material, as well as improve competence in compiling digital assessments. The goal is efficiency in the assessment process and learning management. However, behind these various conveniences, teachers are required to be wise. The concept of integrity involves academic dedication through actions based on core values in educational activities, which essentially serve as a link between the intellectual and moral aspects (Bakry & Yusuf, 2021).

Teachers say that technology is like a double-edged sword, on the one hand it can be a very helpful tool in solving learning problems, on the other hand it can potentially be misused by students who are increasingly intelligent in using it. It is important to continue to instill the value of independence and honesty in completing tasks, even though it is a challenge in itself. This effort is made so that every result obtained by students is a reflection of their true efforts and integrity.

Therefore, teachers in responding to technological developments the biggest challenge lies in supervision. Strong supervision is needed so that students do not misuse technology, which can cause losses, both in the form of data leakage and dependency that hinders learning independence. If students are used to relying on AI to do problems, they will have difficulty when facing tests that require independent skills, such as the Academic Ability Test (TKA), or when entering the workforce. Teachers have repeatedly advised not to rely on AI, in the end the awareness to use technology wisely must grow from within the students themselves.

One of the teachers emphasized that, Character Cultivation teaches students to use AI wisely, with the realization that reliance on AI only gives instant answers without practicing independent thinking skills. The competency aspect focuses on strengthening students' basic skills and general knowledge. This general knowledge is useful so that students can participate effectively in society. Cheating behavior is seen as an act that reduces the academic integrity of students. Academic integrity occupies a central position in building an academic culture.

The essence is not just about preventing violations, but about proactively doing the right thing and feeling proud to have reached the highest moral standards. The scope of academic integrity issues is also comprehensive, including rejection of dishonesty and plagiarism, and is manifested in the form of a commitment to uphold the values of honesty, responsibility, mutual trust, justice, and respect for the intellectual work of others. (Hafizha, 2021).

Character formation in students can be done through official curriculum or hidden curriculum that is reflected in daily school culture. The curriculum must demonstrate the vision, mission, and goals of the school that emphasizes character development. The values that are inspired come from religion, Pancasila, culture, and the goals of national education. The integration of character values can be carried out in various subjects, both in local content and extracurricular activities. Therefore, the learning process is not only limited to cognitive aspects, but also aims to instill these values in daily life (Akhyar, 2024).

Students who have a strong character are generally more focused, organized, and responsible for their assignments and lessons. They also tend to be more effective in overcoming obstacles and challenges during learning. This kind of condition allows students to concentrate more on learning and improve their academic achievement (Stevanus & Stevanus, 2024).

Conclusion

The AI-based learning design strategy by SMP Negeri 1 Surakarta teachers is colored by a selective and careful approach. Teachers use AI mainly as a tool for efficiency in preparing teaching materials and learning administration. However, there is a difference in the pattern of learning design, where History teachers prepare Learning Implementation Plans independently according to learning needs, while Islamic Religious Education teachers refer to the lesson plan as a result of the MGMP agreement. Collaboration through Komunitas Belajar (KomBel) and MGMP is a key forum for sharing strategies and filtering the use of technology.

In an effort to improve academic integrity, schools implement defensive and proactive strategies. Strict supervision policies on the use of gadgets, moderation of technology-based activities in the classroom, and instilling the value of honesty and independence through school culture are the main steps to prevent the abuse of AI. The model formed is controlled mediation, where the presence of technology is always supervised and limited to maintain the authority of teachers and the standards of academic honesty of students.

Overall, the implementation of AI at SMP Negeri 1 Surakarta has not yet reached the transformative stage for personalized learning. The existing pattern emphasizes AI as a complementary tool, while the role of teachers as learning directors, cognition assessors, and integrity character cultivators remains central and irreplaceable. The success of improving these two aspects depends more on the ability of teachers to integrate technological excellence with traditional pedagogical wisdom in a synergistic manner.

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References

Adari, M. D., Kencana, M., & Fajrina, S. (2025). Antara Bantuan dan Ketergantungan: Literatur Review Pengaruh AI terhadap Kognisi Peserta Didik. *AEJ*.

Ahmad, S. F., Rahmat, M. K., Mubarik, M. S., Alam, M. M., & Hyder, S. I. (2021). Artificial intelligence and its role in Education. *MDPI*, 67–82.

Akhyar, D. Al. (2024). Penguatan Karakter Melalui Pendidikan Agama Islam di Era Digital. *Al-Bahru Jurnal Ilmiah Pendidikan Agama Islam*, *3*(1), 364–375. https://doi.org/10.59024/bhinneka.v3i1.1207

Al-Rousan, A. H., Ayasrah, M. N., Khasawneh, M. A. S., Obeidat, L. M., & Obeidat, S. S. (2025). Gamifikasi yang Ditingkatkan AI dalam Pendidikan: Mengembangkan dan Memvalidasi Skala untuk Mengukur Keterlibatan dan Motivasi di Kalangan Siswa Sekolah Menengah: Wawasan dari Perspektif Analisis Jaringan. *Pendidikan Eropa*, *60*. https://doi.org/https://doi.org/10.1111/ejed.70153

Astuti, A., Thoha, M., Dahliah, J., Maryanti, A., Ambarita, D., Rifa'i, R., & Hidayat, T. (2025). Etika Penggunaan AI di Sekolah: Menyeimbangkan Inovasi Dengan Integritas Akademik. *RIGGS*, *4*. https://doi.org/10.31004/riggs.v4i2.1639

Ayasrah, M. N., Khasawneh, M. A. S., Almulla, M. O., & Aboutaleb, A. H. (2025). Desain dan Validasi Skala Ketahanan Pembelajaran Metakognitif Terintegrasi AI (Skala AIIMLR) untuk Siswa Sekolah Menengah di Yordania: Wawasan dari Perspektif Analisis Jaringan. *Journal of Computer Assisted Learning*, *41*(5). https://doi.org/10.1111/jcal.70127

Bakry, M. R., & Yusuf, C. (2021). Implementasi Nilai Integritas Akademik Bagi Guru di Sekolah Menengah Pertama Negeri 138 Jakarta Timur. *Info Abdi Cendekia*, *4*(1), 1–10. https://doi.org/10.33476/iac.v4i1.27

Budiyana, M. D. P., Nursabil, M. S., Pratiwi, N. I., Musyayaroh, N., Shofiah, S., Umiyati, S. S., Susanti, & Astuti, W. (2025). Analisis Perkembangan Kognitif dalam Pemahaman Konsep Gelombang pada Siswa Jenjang SD-SMP-SMA Berdasarkan Teori Perkembangan Piage. *JSSH (Jurnal Sains Sosial Dan Humaniora)*, *9*(1), 59–80. https://doi.org/10.30595/jssh.v9i1.20224

Chen, L., Chen, P., & Lin, Z. (2020). Artificial Intelligence in Education: A Review. *IEEE Access*, *8*, 75264–75278. https://doi.org/10.1109/ACCESS.2020.2988510

Diana, R. F., Kusuma, P. S. B., Athoilah, H., & Nisa, C. (2025). Guidance on the Utilization of Artificial Intelligence (AI) in the Development of Instructional Materials. *Jurnal Pengabdian Masyarakat Dan Penelitian Thawalib*, *4*(2), 109–120. https://doi.org/10.54150/thame.v4i2.750

Farhanah, A. N., Restu, Y. M., Syaurah, A. L., Hilmi, R. F., & Jaelani, J. (2026). Strategi Penyusunan RPP PAI Berbasis Digital dalam Meningkatkan Efektivitas Kinerja Guru. *AN-NAHDLOH: Journal of Educationand IslamicStudies*, *1*.

Furqon, Z., & Nugraha, M. S. (2024). Strategi Pembelajaran Diferensiasi Dalam Pembelajaran PAI Untuk Memenuhi Kebutuhan Heterogenitas Siswa. *An-Nawa: Jurnal Studi Islam*, *6*(1), 41–52. https://doi.org/10.37758/xg0j0v91

Hadi, J. K., Latifah, H., Fuadi, D. A., Fauzan, Christiana, Y., Hidayat, T., & Rifa'i. (2025). Kolaborasi Manusia-Mesin Dalam Pendidikan: Strategi Guru Beradaptasi Dengan Teknologi AI. *RIGGS: Journal of Artificial Intelligence and Digital Business*, *4*(2), 6329–6333. https://doi.org/10.31004/riggs.v4i2.1583

Hafizha, R. (2021). Pentingnya Integritas Akademik. *Journal of Education and Counseling (JECO)*, *1*(2), 115–124. https://doi.org/10.32627/jeco.v1i2.56

Hakeu, F., Pakaya, I. I., Djahuno, R., Zakarina, U., & Tangkudung, M. (2023). Workshop Media Pembelajaran Digital

Bagi Guru Dengan Teknologi AI (Artificial Intelligence). *Mohuyula : Jurnal Pengabdian Kepada Masyarakat*, *2*(2), 36. https://doi.org/10.31314/mohuyula.2.2.36-49.2023

Hidayati, A. N., Santoso, R., & Rizkiyadi, S. N. (2023). Transformasi Pendidikan Maksimalkan Potensi Belajar Dengan Media Pembelajaran Interaktif. *Al Banin Jurnal Ilmiah Pendidikan Dasar*, *1*(1), 26–31.

Indrawati, F. (2023). Peran Komitmen Profesional Pendidik Terhadap Pemanfaatan Artificial Intelligence (AI). *Prosider Seminar Sains Nasional*, *4 (1)*(129–133), 129–133.

Kartika, R. O., Billah, A. N., & Muqowim. (2024). PAI LEARNING WITH A HUMANISTIC APPROACH IN THE INDEPENDENT CURRICULUM. *Al-Iltizam Jurnal Pendidikan Agama Islam*, *9*(1), 51–71.

Khoiruddin, M. (2024). Integrasi kecerdasan buatan (AI) dalam rancangan pembelajaran diferensiatif pada pendidikan menengah. *Modeling: Jurnal Program Studi PGMI*, *11*(3), 312–323.

Komariah, N. S., Zainuri, S. M., & Muinuddin. (2025). Strategi Pembelajaran Berbasis Teori Memori Untuk Peningkatan Kognitif. *Cons-Iedu Islamic Guidance and Counseling Journal*, *05*(01), 118–130.

Lestari, M. T., Pelu, M., & Abidin, N. F. (2022). Hubungan Minat Membaca Buku Teks, Kemandirian Belajar, Dan Hasil Belajar Kognitif Pembelajaran Sejarah. *Jurnal Pendidikan Sejarah Indonesia*, *5*(1), 49–57. https://doi.org/10.17977/um0330v5i1p49-57

Mulyatiningsih, E., Kharismawati, A., & Trilisiana, N. (2025). PENDAMPINGAN PENYUSUNAN PERANGKAT PEMBELAJARAN MENGGUNAKAN BANTUAN ARTIFICIAL INTELLIGENCE (AI). *Jurnal Abdi Insani*, *12*. https://doi.org/10.29303/abdiinsani.v9i2.566

Nasrodin, Faishol, R., & Fauzi, A. (2025). OPTIMALISASI KREATIVITAS PESERTA DIDIK MELALUI PENERAPAN PEMBELAJARAN. *Ilmiah Ar-Risalah*, *23*.

Ng, D. T. K., Wu, W., Leung, J. K. L., Chiu, T. K. F., & Chu, S. K. W. (2023). Design and validation of the AI literacy questionnaire: The affective, behavioural, cognitive and ethical approach. *British Journal of Educational Technology*. https://doi.org/doi: 10.1111/bjet.13411

Nikmah, I. A., Sinensis, A. R., & Putra, F. (2025). *Analisis Pembelajaran Search, Solve, Create, And Share (SSCS)terhadap Peningkatan Kognisi Siswa pada Materi Tekanan di Kelas VIII MTs/SMP*. *6*(2), 109–115.

Rahma S. Thakir Dr. (2025). The Impact of Utilizing AI-Enhanced Cognitive Trips on Academic Achievement and Attitude Improvement towards Mathematics among Secondary School Students. *International Journal for Research in Education*, *49*(2), 12–66. https://doi.org/10.36771/ijre.49.2.25-pp12-66

Ramadana, M. R., Ulfa, S., & Soepriyanto, Y. (2025). Analyzing Student Cognitive Engagement in AI-Based Learning using Prompting Techniques. *Indonesian Journal of Artificial Intelligence and Data Mining*, *8*(2), 326–336. https://doi.org/10.24014/ijaidm.v8i2.36160

Sirait, R. A., & Dewi, E. Y. (2024). Peran Teknologi Pembelajaran pada Desain Pembelajaran. *Jurnal Budi Pekerti Agama Kristen Dan Katolik*, *2*(4), 237. https://journal.aripafi.or.id/index.php/jbpakk/article/download/773/1211/4357

Soto, M. A. P., & Herrera, P. A. A. (2024). Artificial intelligence in technical pedagogical content knowledge (TPACK) contexts: A literature review. *Panorama*, *18*(35). https://doi.org/10.15765/pkjpwv56

Stevanus, A., & Stevanus, K. (2024). Pengaruh Integritas Pendidik terhadap Pembentukan Karakter Siswa. *HARVESTER: Jurnal Teologi Dan Kepemimpinan Kristen*, *9*(1), 119–131. https://doi.org/10.52104/harvester.v9i1.173

Tan, X., Cheng, G., & Ling, M. H. (2025). Artificial intelligence in teaching and teacher professional development: A systematic review. *Computers and Education: Artificial Intelligence*, *8*(November 2024), 100355. https://doi.org/10.1016/j.caeai.2024.100355

Ulimaz, A., Cahyono, D., Dhaniswara, E., Arifudin, O., & Rukiyanto, B. A. (2024). Analisis Dampak Kolaborasi Pemanfaatan Artificial Intelligences (AI) Dan Kecerdasan Manusia Terhadap Dunia Pendidikan Di Indonesia. *INNOVATIVE: Journal Of Social Science Research*, *4*, 9312–9319.

Villaver, R. G., & Cabigas, M. E. A. (2025). Learning Engagement with AI Tools and Academic Performance. *International Journal of Multidisciplinary Research and Analysis*, *08*(07), 4199–4209. https://doi.org/10.47191/ijmra/v8-i07-55

Wati, A., Nurassyifa, R. A., Hidayat, A., & Farhurohman, O. (2025). Implementasi Pembelajaran yang Dipersonalisasi Berbasis AI (Artificial Intelligence) dalam Meningkatkan Hasil Belajar Siswa. *Jurnal Imiah Pendidikan Dasar (JIPDAS)*, *5*(2), 1816–1823. https://jurnal.spada.ipts.ac.id/index.php/JIPDAS/article/view/3028/1057