

# Transforming Islamic and Character Education: Enhancing Active Participation via Independent Curriculum in the Digital Era

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## ABSTRACT

In the digital era, student engagement in Islamic Religious Education (PAI) learning often faces obstacles, such as a lack of interest in conventional methods, a digital literacy gap, and a lack of confidence in actively participating in class. This study aims to analyze the implementation of the Independent Curriculum in increasing student active participation in Islamic Religious Education (PAI) and Character-Building subjects at Vocational School 4 Bandar Lampung, specifically by utilizing the potential of digital technology. This study used a qualitative approach with a descriptive design. The research subjects included Islamic Religious Education teachers and grade XI DKV 2 students. Data collection techniques were carried out through participant observation, in-depth interviews, and documentation studies to obtain a comprehensive picture of classroom learning dynamics. The research findings showed that the integration of digital media such as learning videos, interactive online quizzes, and digital discussion platforms significantly increased student engagement. Project-based learning methods, such as creating digital posters and Islamic preaching videos, proved effective in motivating students to be more active. However, the main challenges identified were variations in digital literacy levels and psychological barriers in the form of shyness that some students still experience when interacting in digital and physical spaces. This research provides practical insights for educators and educational institutions in optimizing the Independent Curriculum. Furthermore, the findings emphasize the importance of inclusive teaching strategies and improving digital literacy to create a learning environment that supports creativity and active student participation in the digital age.

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## 1. INTRODUCTION

Active student participation is a key pillar of the modern learning ecosystem, serving to increase motivation, engagement, and depth of understanding of the material (Koul & Nayar, 2021). Through hands-on activities such as critical reading, observing

phenomena, asking questions, and discussing, students not only passively absorb information but also hone their critical thinking skills (Jaelani et al., 2023; Sohail et al., 2026). This engagement enables students to find independent solutions to various problems that arise during the instructional process, making learning more meaningful and applicable to everyday life.

In creating a dynamic learning environment, the use of interactive learning media such as educational videos, images, and concrete props has been shown to make a significant contribution (Nofmiyati et al., 2023). Furthermore, the integration of educational technology based on digital platforms and game applications is now an urgent need to prepare students for the challenges of the digital age (Monigir & Wakari, 2024; Blyznyuk et al., 2025; Olszewski & Crompton, 2020). This technology facilitates teamwork and discussions that transcend the boundaries of the physical classroom (Zou et al., 2025).

The teacher's role as a facilitator is crucial in selecting learning strategies, methods, and techniques that align with student characteristics and classroom situations (Cahyono & Rusiadi, 2025; Dursun & Aykan, 2025). A conducive learning environment can be created if teachers are able to combine the use of educational technology with a personalized approach, including providing rewards in the form of praise or small tokens of appreciation that have a positive impact on student self-confidence (Alshehhi et al., 2025; Silitubun, 2023). This combination of elements is expected to create a learning process that is not only active, but also enjoyable and relevant to current developments.

However, reality on the ground often reveals a gap between expectations and learning practices. A preliminary study at Vocational School 4 Bandar Lampung identified several obstacles in Islamic Religious Education (PAI) learning, including limited use of learning media, a less focused classroom atmosphere due to noise, and weak social interaction among students. Ineffective teacher-student relationships also contribute to low student participation in asking questions and answering learning challenges, ultimately hindering the optimal achievement of instructional objectives.

These issues are reinforced by questionnaire results, which show that student participation in learning materials is at a low level, at only 21%. This low percentage indicates that most students are passive during material explanations, which directly impacts their weak understanding of basic Islamic Religious Education (PAI) concepts. This situation demands transformative efforts to increase the appeal of material delivery so that students can engage intensively and focus from the early stages of learning.

The implementation of the Independent Curriculum presents a potential solution, as evidenced by various previous studies demonstrating its effectiveness in encouraging student engagement (Mustakim et al., 2024; Pajrini et al., 2023) and improving learning outcomes through active participation (Fisabilillah et al., 2025; Islamiati et al., 2024; Widiyanto & Afghohani, 2025). Other studies have also highlighted the curriculum's success in the context of inclusive education (Sari & Pujiastuti, 2023), student-centred learning approaches (Ferdaus & Novita, 2023), and experiential learning methods (Wibowo et al., 2024). However, a research gap remains: no studies have specifically examined the implementation of the Independent Curriculum in Islamic Religious

Education (PAI) and Character Education (Budi Pekerti) subjects at the vocational high school level within the digital era.

The uniqueness of this research lies in its focused analysis of the independent curriculum's implementation, which integrates spiritual needs and character building with a student-centred digital approach at Vocational School 4 Bandar Lampung. The urgency of this research includes improving learning interactions and optimizing creative media to make the material easier to understand. Practically, the results of this study are expected to have real implications for educators in improving teaching creativity, and for schools in providing supporting facilities to improve student achievement.

## 2. METHOD

This study uses a qualitative approach with a descriptive design to in-depth analyze the implementation of the Independent Curriculum (Merdeka Curriculum) in fostering active student participation in Islamic Religious Education (PAI) and Character Building (Culture) learning in the digital era. The research location was Vocational School 4 Bandar Lampung. The use of this descriptive qualitative method aims to provide a systematic, factual, and accurate overview of the phenomena occurring in the field related to teacher strategies and student responses within the transformed learning ecosystem.



**Figure 1.** Qualitative Approach with a Descriptive Design

The research subjects were determined using a purposive sampling technique, which selects samples based on specific criteria relevant to the research objectives. The primary subjects in this study were Islamic Religious Education (PAI) and Character Building (Culture) teachers and 11th-grade Visual Communication Design (DKV) 2 students at Vocational School 4 Bandar Lampung. This selection was based on their direct involvement in the implementation of the Independent Curriculum, thus providing rich and credible data on the dynamics of student participation and the use of digital instruments in classroom learning.

Data collection techniques were conducted using three main instruments: interviews, observation, and documentation. Semi-structured interviews were conducted to gain in-depth perspectives on the impact of the Independent Curriculum policy on student learning activities. Participant observation was conducted to directly assess the dynamics of student participation, including engagement in group discussions, presentations, and persistence in completing assignments. Meanwhile, documentation

techniques were used to verify data through examination of Lesson Plans, student assignment portfolios, and attendance records to strengthen the analysis of student engagement.

Data analysis in this study refers to the interactive model of Miles and Huberman, which includes three stages: data reduction, data presentation, and drawing conclusions or verification. In the reduction stage, researchers categorized and simplified the raw data to focus on the core issues. The data was then presented in a structured manner in tables and descriptive sections to facilitate understanding of patterns. The final stage was drawing conclusions based on the patterns and relationships found within the data, which were then continuously verified to ensure consistency.

To ensure the validity of the findings, this study employed triangulation techniques, combining various sources and data collection techniques. This process involved comparing information obtained from interviews, observation notes, and documentary evidence to minimize bias and ensure the reliability of the research results (Suci & Kadri, 2025). Through this rigorous methodological framework, the study is expected to provide practical and theoretical contributions to the development of a more participatory Islamic Religious Education (PAI) learning model that is adaptive to the development of digital technology in vocational high schools.

### 3. RESULTS AND DISCUSSION

#### Results

#### **Implementation of the Independent Curriculum on Students' Active Participation**

The implementation of the Independent Curriculum at Vocational School 4 Bandar Lampung has had a positive impact on student active participation in Islamic Religious Education (PAI) and Character Building (Culture). Interviews with Islamic Religious Education (PAI) teachers revealed that the use of digital media, such as instructional videos, online quizzes, and digital discussion platforms, makes learning more engaging and interactive. This approach has led to students being more engaged in class activities, such as asking questions and answering questions, and participating in presentations and projects. However, while overall student participation has increased, some students still lack confidence and tend to be passive. Teachers identified that although they are beginning to engage, their activeness remains limited, particularly among students who are less confident in speaking in front of the class.

*Researcher: "Sir/Madam, based on my observations in class XI DKV2, there appears to be a change in the learning dynamics. How do you see the impact of the Independent Curriculum implementation on students' active participation in Islamic Religious Education (PAI) learning so far?"*

*PAI Teacher: "Thank God, the impact has been quite positive. In this Independent Curriculum, we have more freedom to integrate digital media. I often use learning videos, online quizzes like Quizizz, and discussion platforms. As a result, learning has become livelier. Students who were previously passive have begun to ask and answer questions. They feel that Islamic Religious Education (PAI) learning is no longer rigid, but more interactive."*

*Researcher: "Of the various methods you have implemented, which form of participation do you think is most prominent among students?"*

*PAI Teacher: "The most obvious thing is during project-based learning (PBL). Since these are Visual Communication Design (DKV) students, they are very enthusiastic when asked to create Islamic preaching videos or digital posters. They feel the assignments are practical and relevant to their hobbies. Furthermore, group discussions are also effective. In small groups, students who are usually quiet become more confident in speaking up before they present to the class."*

*Researcher: "Although overall there has been improvement, are there still obstacles or students who are difficult to engage?"*

*PAI Teacher: "Of course there are still some. The biggest obstacle is the difference in digital literacy. Some students are very proficient, while others still struggle to operate devices. Furthermore, mental factors such as shyness or fear of making mistakes still act as barriers, especially for students who lack confidence. Sometimes, the use of gadgets in class also makes some students lose focus if not closely supervised."*

*Researcher: "So, what strategies do you use to engage students who lack confidence or who are facing technical issues?"*

*PAI Teacher: "I try a more inclusive approach. For example, I provide additional motivation, praise students whenever they speak up, or implement pairwork. This way, students who are less tech-savvy can get help from their peers. I also often facilitate small groups first, so they feel comfortable before presenting in front of the class. For technical issues like data quotas or network connectivity, we at the school are constantly working to find solutions so everyone can still access the material."*

*Researcher: "Okay, thank you for your explanation. This really helps me understand my research."*

The most visible form of active participation in the classroom is student engagement in project-based assignments and group discussions. Students appear more enthusiastic about completing projects, such as creating Islamic religious videos or digital posters, because they feel these tasks are more practical and relevant to their daily lives. Furthermore, the use of group discussions is an effective way to encourage students to speak up and express their opinions. More open discussions provide students with a space to learn together and share their thoughts. However, challenges in fostering active participation remain, especially for quieter students or those unfamiliar with using technology in learning. Some students still hesitate to speak up or ask questions, especially when they are worried about making mistakes.

The biggest obstacle to increasing active student participation is the difference in digital skills among students. Some students struggle to use digital devices fluently, which affects their level of engagement in technology-based learning. Furthermore, although digital technology helps create a livelier learning environment, some students still feel awkward or shy about speaking in front of the class. Teachers also revealed that although most students are becoming more active, some still lack discipline and focus when using gadgets. To address this, Islamic Religious Education teachers provide additional motivation by assigning pair assignments, praising students for their courage,

and providing opportunities for students to work in small groups before presenting to the class.

Despite some challenges, the use of digital technology has proven effective in increasing student participation. Students demonstrate greater interest in learning when technology is used as a learning medium. Several students expressed their preference for platforms like Google Classroom and Quizizz because they make learning more enjoyable and easier to understand. Furthermore, digital-based projects allow them to work on assignments in more creative ways that align with their interests. However, challenges remain related to internet connection quality and data availability, which hinder some students from accessing materials and fully participating in digital learning. Overall, the implementation of the Independent Curriculum in Islamic Religious Education and Character Education at Vocational School 4 Bandar Lampung has successfully increased student participation, although improvements are needed in terms of technology utilization and more inclusive learning management.

### **Factors Influencing the Level of Active Student Participation**

Interviews with Islamic Religious Education (PAI) teachers and students revealed that several key factors influencing students' active participation in Islamic Religious Education (PAI) learning at Vocational School 4 Bandar Lampung, related to the implementation of the Independent Curriculum, include the use of technology and varied learning methods. Teachers stated that digital media, such as instructional videos, online quizzes, and discussion platforms, play a significant role in increasing student engagement. Furthermore, discussion methods that provide space for students to speak also encourage active participation. This use of technology allows students to be more engaged and find it easier to understand the material, which is related to their interest in the digital world.

#### **Part 1: Teacher Perspectives (Strategies and Obstacles)**

*Researcher: "In your opinion, what is the most dominant factor in motivating student engagement since the implementation of the Independent Curriculum in Islamic Religious Education (PAI) classes?"*

*PAI Teacher: "The most noticeable is the variety of methods and technology. Now I no longer just lecture but also use online quizzes and discussion platforms. Children today are very close to the digital world, so when learning media aligns with their interests, they are automatically more willing to ask and answer questions."*

*Researcher: "What about the challenges of differences in digital skills and unequal student confidence?"*

*PAI Teacher: "That is indeed the main obstacle. Not all students have the same digital literacy, and some are still shy about performing. My strategy is to use an inclusive approach. I assign assignments to pairs or small groups first, so they feel safe before performing in front of the class. I also regularly offer praise as motivation to boost their confidence."*

**Part 2: Student Perspectives (Motivation and Experience)**

*Researcher: "What do you think about the assignments to create Islamic preaching videos or digital posters in Islamic Religious Education (PAI)?"*

*Student: "Honestly, it's much more fun, Sis. Because we're Visual Communication Design students, we feel like the assignments are 'connected' to our skills. We're given the freedom to choose how to complete the assignments based on our interests, so we don't feel burdened. Learning feels more practical and less boring."*

*Researcher: "Is there anything that makes you or your classmates sometimes hesitate to be active in class?"*

*Student: "Sometimes we're still afraid of making mistakes when speaking in public. And if the internet is slow or a friend isn't fluent in using the app, that can also be a barrier. But fortunately, the school supports Wi-Fi and projectors, which really helps our learning process."*

The second factor influencing active student participation is the implementation of project-based learning relevant to everyday life. Project-based assignments, such as creating Islamic religious videos and digital posters, receive positive responses from students because they find them more practical and enjoyable. This is further supported by the freedom for students to choose how to complete assignments according to their interests, which contributes to their motivation and creativity in learning. However, some students still exhibit passivity, especially those who feel insecure or lack discipline, making them less likely to engage in discussions and group activities.

The main obstacle to increasing active student participation is differences in digital skills among students and shyness about performing in front of the class. Teachers note that while technology helps increase engagement, not all students have the same ability to use digital devices, leading to imbalances in participation. Furthermore, while many students enjoy technology-based learning, some still hesitate to speak up or ask questions, especially when they fear making mistakes. To address this, teachers use more inclusive approaches, such as assigning pairwork and providing opportunities to perform in small groups first.

The final factor influencing student participation is the support provided by teachers and the school. Teachers provide motivation through various approaches, such as offering praise, providing opportunities to speak in class, and using differentiated methods tailored to students' abilities and interests. This support has been shown to help increase student participation, especially for previously passive students. Furthermore, digital facilities provided by the school, such as Wi-Fi and projectors, support more interactive, technology-based learning. Overall, the implementation of the Independent Curriculum, which focuses on student-centered learning, has increased student active participation despite challenges related to digital readiness and student confidence.

**Discussion**

The implementation of the Independent Curriculum in Islamic Religious Education (PAI) and Character Building at SMK 4 Bandar Lampung has generally shown a very positive impact on active student participation. The transformation from conventional

(rigid) learning to student-centered learning has successfully transformed classroom dynamics, making them livelier and more interactive.

### **Catalysts for Active Participation: Digitalization and Vocational Relevance**

The significant increase in student participation documented in this study was driven by two intersecting catalysts: the strategic deployment of digital technology and the implementation of Project-Based Learning (PBL) contextualized to the students' vocational tracks. Through the integration of interactive digital media such as Quizizz, Google Classroom, instructional videos, and online discussion platforms, the learning process effectively bridged the gap between the younger generation and the contemporary digital ecosystem. This technological integration successfully transformed Islamic Religious Education (PAI) materials—which are traditionally perceived as rigid and theoretical—into an interactive, enjoyable, and highly accessible learning experience. This finding aligns with the Technology Acceptance Model (TAM) and Constructivist Learning Theory, which posit that when digital tools enhance the perceived usefulness and ease of learning, student engagement increases (Aljasir, 2023; Mbangata & Abayomi, 2022). Furthermore, previous studies in digital pedagogy reinforce that shifting from conventional instruction to technology-mediated learning significantly boosts student motivation and conceptual understanding in humanities and religious education (Amin & Aman, 2025; Puja, 2024).

Meanwhile, the pronounced success of the PBL method in this study was heavily contingent upon the synergy between the core curriculum and the vocational competencies of Visual Communication Design (DKV) students. By aligning instructional tasks with professional outputs—such as producing digital posters and Islamic da'wah videos—students experienced a profound sense of connectedness, finding the curriculum directly relevant to their personal interests, hobbies, and technical expertise. This phenomenon validates John Keller's ARCS Model of Motivation, particularly the element of relevance, which asserts that learning outcomes optimize when students perceive a direct link between instructional content and their real-world skills (Lin & Hsu, 2025; Wicaksono, 2025). By providing the autonomy to explore creative ideas within structured project boundaries, this approach stimulated deep creativity and fostered intrinsic motivation. This supports existing literature on vocational pedagogy, which demonstrates that contextualized project-based tasks effectively mitigate academic anxiety and excessive psychological burdens, empowering students to achieve both technical and affective learning objectives (Green & du Plessis, 2023; Ulaini & Fitriasia, 2025).

### **Challenges in the Field: The Digital Divide and Psychological Barriers**

Despite a collective increase in student participation, this study successfully identified critical pedagogical and structural barriers that disrupt classroom equity, primarily rooted in the digital literacy gap and psychological constraints. The disparity in students' technical proficiency highlights the persistence of the "second-level digital divide," a concept emphasizing that inequalities shift from basic internet access to actual

usage and digital capability skills. While tech-savvy students seamlessly navigate modern applications, their less-proficient peers face operational friction, leading to significant imbalances in classroom engagement. This phenomenon aligns with Social Cognitive Theory, which suggests that a lack of technical mastery diminishes a student's self-efficacy, directly translating into classroom withdrawal (Deng & Liu, 2025; Syed et al., 2019). Furthermore, these technical hurdles are compounded by deep-seated psychological barriers, such as shyness, communicative anxiety, and an acute fear of making mistakes (FOFO). In educational psychology, this defensive passivity is often explained through self-worth theory, where students choose silence over active participation to protect their academic self-image from perceived public failure (Barkela et al., 2024; Cano et al., 2018), proving that psychological safety is just as vital as technological readiness in cultivating an inclusive learning ecosystem.

In tandem with individual limitations, macro-level challenges involving classroom management and infrastructural deficits heavily dictate the trajectory of digital learning. The integration of personal devices acts as a classic "double-edged sword" in modern pedagogy; without rigorous, measured supervision from educators, these tools trigger cognitive offloading and digital distraction, fracturing student focus and self-regulated learning disciplines. This behavioral challenge supports the Cognitive Load Theory, which warns that extraneous digital stimuli overwhelm working memory and dilute instructional absorption (Rodrig & Marlow, 2025). Moreover, this internal distraction is severely exacerbated by external infrastructural constraints, including unstable network connections and depleted data quotas. Previous literature on remote and hybrid education in developing regions consistently corroborates that these socio-economic and technical realities create an unstable learning architecture (Mustofa et al., 2024). When hardware and connectivity fail, continuous access to learning materials is disrupted, turning a progressive digital curriculum into a fragmented educational experience for marginalized students.

### **Teacher Inclusive Strategies and Institutional Support**

To mitigate participation disparities, Islamic Religious Education (PAI) teachers strategically deployed a more inclusive framework through differentiated and collaborative learning strategies, such as pairwork and small group discussions. This collaborative arrangement facilitates a natural peer-tutoring mechanism where students with advanced digital literacy scaffold their peers who encounter technical friction. This pedagogical choice heavily resonates with Vygotsky's sociocultural theory of cognitive development, specifically the concept of the Zone of Proximal Development (ZPD), which posits that learning is optimized through social interaction and collaborative problem-solving with more capable peers (Eun, 2019; Hamidalloh et al., 2026). Furthermore, within the framework of educational psychology, these small groups function as an essential safe space that reduces affective filters for introverted or marginalized students. By lowering performance anxiety, this micro-environment allows students to gradually construct academic self-efficacy before transitioning to broader, large-group dynamics—a finding that aligns with prior research asserting that

small-group collaborative structures significantly enhance situational interest and engagement in digitalized humanities education (Chao et al., 2022).

In tandem with structural grouping, the success of this model is reinforced by affective pedagogical interventions and robust institutional scaffolding. Teachers actively addressed the psychological dimensions of learning by utilizing continuous motivational reinforcement and positive affirmations—such as praising incremental student contributions—which effectively lowered students' communicative anxiety and mitigated their fear of making mistakes. This approach directly supports B.F. Skinner's Reinforcement Theory and Self-Determination Theory (SDT), which demonstrate that extrinsic psychological validation fosters a sense of competence and relatedness, thereby converting passive resistance into intrinsic academic agency (Zhang & Shakibaei, 2025). However, as existing literature on educational technology emphasizes, progressive classroom pedagogy cannot succeed in an infrastructure vacuum. The seamless execution of these digital tasks was heavily contingent upon institutional support, particularly through the provision of stable Wi-Fi networks and integrated classroom projectors. This multi-level alignment between affective teacher intervention and structural institutional support validates the ecological systems theory, proving that sustainable digital transformation requires synergy between the immediate instructional environment and the broader institutional framework to create an equitable ecosystem for all students (Tsaples et al., 2024).

Overall, the implementation of the Independent Curriculum at Vocational School 4 Bandar Lampung has proven to significantly shift the paradigm of Islamic Religious Education (PAI) learning to a more dynamic, creative, and student-centered one. The key to the high level of student participation and enthusiasm in this study lies in the harmonious integration of digital technology and the contextualization of students' local expertise in the Visual Communication Design (DKV) study program. This synergy not only enlivens the classroom atmosphere but also demonstrates that religious material can be internalized in an applicable manner through creative works relevant to current developments.

However, it is acknowledged that this success has not been fully distributed across all learning areas. To ensure the principle of inclusivity is optimally implemented and no student is left behind, continuous improvement efforts are necessary. Periodic evaluations are essential for strengthening more inclusive classroom management, providing intensive mentoring to enhance digital literacy, measurable monitoring of device use to ensure it remains adaptive as a learning medium, and optimizing the expansion of the school's internet network infrastructure.

#### 4. CONCLUSION

The implementation of the Independent Curriculum in Islamic Religious Education (PAI) and Character Building (Culture) subjects at Vocational School 4 Bandar Lampung has been proven to significantly increase student participation through a student-centered learning approach. This success is driven by the integration of interactive digital media and the effectiveness of Project-Based Learning,

contextualized in a way that is relevant to the competencies of Visual Communication Design (DKV) students, such as in the creation of Islamic preaching videos and digital posters. However, optimizing learning still faces technical obstacles such as digital literacy gaps, distractions from devices, and limited network infrastructure, as well as psychological obstacles such as low self-confidence among some students. To address these disparities, Islamic Religious Education (PAI) teachers strategically implement an inclusive-collaborative approach through pairwork and small group work as a safe space for peer tutoring and increased self-confidence, fully supported by positive affirmations and the provision of adequate facilities and infrastructure from the school.

As a recommendation, schools, along with Islamic Religious Education (PAI) teachers, need to develop more inclusive and integrated classroom management to address existing gaps. Teachers are advised to consistently implement collaborative approaches such as pairwork and small group discussions to bridge the digital literacy gap and build the self-confidence of shy students. Furthermore, stricter supervision of device use in the classroom is essential to maintain student discipline and focus. Finally, schools are expected to continue optimizing and maintaining the provision of supporting facilities such as stable Wi-Fi networks and projectors to minimize technical obstacles to internet connections, so that all students can participate equally and fully in digital-based learning.

## REFERENCES

- Aljasir, N. (2023). Perceptions of Self-Learners of English toward mobile language learning: technology acceptance model and constructivist learning theory perspectives. *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT)*, 13(1), 1-25. <https://doi.org/10.4018/IJCALLT.334599>
- Alshehhi, H., Sandoval-Hernández, A., & Eryilmaz, N. (2025). Assessing the impact of laptop integration on students' self-confidence and self-efficacy in technology use: the case of middle school students in Abu Dhabi. *Frontiers in Education* (Vol. 10, p. 1599407). Frontiers Media SA. <https://doi.org/10.3389/educ.2025.1599407>
- Amin, H., & Aman, M. (2025). Digital Pedagogy In Islamic Education: Redefining Learning For Generation Z Teachers In Madrasah (A Literature Study). *Raudhah Proud To Be Professionals: Jurnal Tarbiyah Islamiyah*, 10(3), 1129-1142. <https://doi.org/10.48094/raudhah.v10i3.1072>
- Barkela, V., Han, A., & Weber, A. M. (2024). Do student teachers experience self-worth threats in computational thinking?. *Computers in Human Behavior Reports*, 15, 100463. <https://doi.org/10.1016/j.chbr.2024.100463>
- Blyznyuk, O., Kachak, T., Blyznyuk, T., & Nazaruk, S. K. (2025). Quality education in the digital age: Adapting to 21st century primary school learners. *Journal of Vasyl Stefanyk Precarpathian National University*, 12(1), 58-68. <https://journals.pnu.edu.ua/index.php/jpnu/article/view/9045>
- Cahyono, D., & Rusiadi, R. (2025). The role of the teacher as a facilitator in the learning process: A review of educational psychology. *International Journal of Teaching and Learning (INJOTEL)*, 3(1), 205-212.
- Cano, F., Martin, A. J., Ginns, P., & Berbén, A. B. G. (2018). Students' self-worth protection and approaches to learning in higher education: Predictors and consequences. *Higher Education*, 76(1), 163-181. <https://doi.org/10.1007/s10734-017-0215-0>

- Chao, C. T., Chiu, Y. L., Tsai, C. L., Lin, M. W., Yang, C. W., Ho, C. C., ... & Chen, H. L. (2022). Moving from tangibility toward digitalization: investigating team dynamics and facilitator support among medical students in conventional and digital small-group tutorials. *BMC Medical Education*, 22(1), 814. <https://doi.org/10.1186/s12909-022-03893-8>
- Deng, Y., & Liu, H. (2025). To overcome test anxiety in on-line assessment: unpacking the mediator roles of techno competencies, teacher support, self-efficacy, and autonomy. *BMC psychology*, 13(1), 192. <https://doi.org/10.1186/s40359-025-02545-y>
- Dursun, F., & Aykan, A. (2025). Exploring teachers' narratives: Challenges and strategies for enhancing the teaching process. *Sage Open*, 15(1), 21582440251332557. <https://doi.org/10.1177/21582440251332557>
- Eun, B. (2019). The zone of proximal development as an overarching concept: A framework for synthesizing Vygotsky's theories. *Educational philosophy and theory*, 51(1), 18-30. <https://doi.org/10.1080/00131857.2017.1421941>
- Ferdaus, S. A., & Novita, D. (2023). The implementation of the Merdeka Curriculum in English subject at a vocational high school in Indonesia. *Briliant: Jurnal Riset Dan Konseptual*, 8(2), 297-310. <http://jurnal.unublitar.ac.id/index.php/briliant/article/view/1201>
- Fisabilillah, M. I., Ridwanulhaq, A. F., Masudah, N., Nur, I. M., Al Haris, M., & Amri, S. (2025). The Impact of Implementing the Independent Curriculum on Elementary School Students' Learning Outcomes. *Jurnal Ilmiah Pendidikan dan Pembelajaran*, 9(1), 43-52. <https://ejournal.undiksha.ac.id/index.php/JIPP/article/view/91548>
- Green, S. L., & du Plessis, E. C. (2023). Project-based learning to promote learner autonomy in training hospitality education at a technical and vocational education and training college. *International Journal of Learning, Teaching and Educational Research*, 22(7), 136-155. <https://doi.org/10.26803/ijlter.22.7.8>
- Hamidalloh, A. S., Muhid, A., Rofiq, A. A., Permadi, M. S. S., & Saifullah, D. A. (2026). From the Cognitive Stage to the Zone of Proximal Development: A Theoretical Synthesis of Piaget and Vygotsky in the Perspective of Educational Psychology. *Edusoshum: Journal of Islamic Education and Social Humanities*, 6(1), 593-604. <https://doi.org/10.52366/edusoshum.v6i1.339>
- Islamiati, E. F., Subagia, I. W., & Suma, K. (2024). Development of teaching modules in the implementation of the independent curriculum to improve the quality of the learning process and student learning outcomes. *Jurnal Penelitian Pendidikan IPA*, 10(11), 9097-9105. <https://doi.org/10.29303/jppipa.v10i11.7521>
- Jaelani, A. K., Hasbi, M., & Baharullah, B. (2023). A critical thinking profile of mathematics education students in solving ill-structured problem based on mathematical ability. *Jurnal Teori dan Aplikasi Matematika*, 7(2), 545.
- Koul, S., & Nayar, B. (2021). The holistic learning educational ecosystem: A classroom 4.0 perspective. *Higher Education Quarterly*, 75(1), 98-112. <https://doi.org/10.1111/hequ.12271>
- Lin, H. C., & Hsu, W. (2025). A VR-Enhanced Teaching Model for Classical Chinese Based on the ARCS Motivational Framework. *International Conference on Human-Computer Interaction* (pp. 54-64). Cham: Springer Nature Switzerland. [https://doi.org/10.1007/978-3-032-13174-4\\_4](https://doi.org/10.1007/978-3-032-13174-4_4)
- Mbangata, L., & Abayomi, A. (2022). Learning theories and technology adoption models: a review. *The proceedings of the international conference on smart city*

- applications (pp. 388-403). Cham: Springer International Publishing. [https://doi.org/10.1007/978-3-031-26852-6\\_37](https://doi.org/10.1007/978-3-031-26852-6_37)
- Monigir, N., & Wakari, T. I. (2024). Meningkatkan Partisipasi Aktif Siswa Dengan Media Interaktif Wordwall. *J-CEKI: Jurnal Cendekia Ilmiah*, 3(6), 7879-7887.
- Mustakim, M., Suastra, I. W., & Lasmawan, I. W. (2024). The independent curriculum in educational theory review: Challenges and solutions. *Realita: Jurnal Bimbingan dan Konseling*, 9(2), 2480-2501. <https://doi.org/10.33394/realita.v9i2.12391>
- Mustofa, M., Costa, T., & Silva, P. (2024). Designing a Hybrid Learning Model for Diverse Educational Needs. *JIIET: Journal International Inspire Education Technology*, 3(3). <https://doi.org/10.55849/jiiet.v3i3.719>
- Nofmiyati, Nofmiyati, Miftahuddin Miftahuddin, and M. Fahli Zatrahadi. 2023. "Analisis Partisipasi Siswa Dalam Pembelajaran Agama Islam: Analisis Studi Literatur." *Jurnal Administrasi Pendidikan & Konseling Pendidikan* 4(1):1-7. <http://dx.doi.org/10.24014/japkp.v4i1.24983>
- Olszewski, B., & Crompton, H. (2020). Educational technology conditions to support the development of digital age skills. *Computers & Education*, 150, 103849. <https://doi.org/10.1016/j.compedu.2020.103849>
- Pajrini, A., Misnawati, M., Pertiwi, L. A., & Amanda, U. R. (2023). Optimizing the Implementation of Thematic Learning in the Independent Curriculum: As a Solution to Increase Student Engagement. *Proceeding Of International Conference On Education, Society And Humanity* (Vol. 1, No. 1, pp. 1696-1703). <https://ejournal.unuja.ac.id/index.php/icesh/article/view/10635>
- Puja, I. B. P. (2024). The mediating role of online learning motivation in the influence of service quality, social media usage, and pedagogical teaching competence of teachers on student learning satisfaction. *Cogent Social Sciences*, 10(1), 2396934. <https://doi.org/10.1080/23311886.2024.2396934>
- Rodrig, L., & Marlow, L. (2025). Cognitive Load Management in Digital Learning Environments: Implications for Student Performance. *Innovative Journal of Educational Research and Insights*, 188-197. <https://ojs.bustanilmu.com/index.php/IJERI/article/view/111>
- Sari, F., & Pujiastuti, H. (2023). Evaluasi efektifitas kurikulum inklusi dan kurikulum merdeka dalam meningkatkan partisipasi dan prestasi. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 8(3), 3158-3169.
- Silitubun, E. (2023). The relationship between student self-confidence, AI support, and academic achievement: A study in the psychology of motivation and learning. *Bulletin of Counseling and Psychotherapy*, 5(3), 305-313. <https://doi.org/10.51214/002023051066000>
- Sohail, B., Aslam, M. O., & Abbas, Q. (2026). Developing Critical Thinking through Hands-on-Activities: An Experimental Study of Secondary School Students. *Journal of Social Horizons*, 3(1), 11-19. <https://sociocanvas.com/index.php/JSH/article/view/245>
- Syed, M., Zurbruggen, E. L., Chemers, M. M., Goza, B. K., Bearman, S., Crosby, F. J., ... & Morgan, E. M. (2019). The role of self-efficacy and identity in mediating the effects of STEM support experiences. *Analyses of Social Issues and Public Policy*, 19(1), 7-49. <https://doi.org/10.1111/asap.12170>
- Tsaples, G., Papathanasiou, J., & Manou, D. (2024). Synergies and challenges: exploring organizational perspectives on digital transformation and sustainable development in the context of skills and education. *Buildings*, 14(2), 395. <https://www.mdpi.com/2075-5309/14/2/395>

- Ulaini, N., & Fitriasia, A. (2025). Enhancing vocational education in Egypt: The role of project-based learning in developing 21st-century skills. *Al-Ishlah: Jurnal Pendidikan*, 17(1), 331-343. <https://doi.org/10.35445/alishlah.v17i1.6051>
- Wibowo, A. H., Mohamad, B., Djatmika, & Santosa, R. (2024). Designing and assessing experiential learning pedagogy for an intercultural communicative competence training module: a quasi-experimental study. *Frontiers in Education* (Vol. 9, p. 1470209). Frontiers Media SA. <https://doi.org/10.3389/educ.2024.1470209>
- Wicaksono, P. (2025). Learning Modules with ARCS Keller Approach to Increase Children's Learning Interest and Motivation. *Indonesian Journal of Islamic Elementary Education*, 5(2), 149-161. <https://doi.org/10.28918/ijiee.v5i2.12768>
- Widiyanto, P., & Afghohani, A. (2025). Persepsi partisipasi aktif siswa dengan hasil belajar matematika dalam implementasi Kurikulum Merdeka. *Jupika: Jurnal Pendidikan Matematika*, 8(1), 9-16. <https://doi.org/10.37478/jupika.v8i1.5356>
- Zhang, Q., & Shakibaei, G. (2025). Using social reinforcement in online Language learning to foster motivation through self-determination theory. *Scientific Reports*, 15(1), 34944. <https://doi.org/10.1038/s41598-025-18953-4>
- Zou, Y., Kuek, F., Feng, W., & Cheng, X. (2025). Digital learning in the 21st century: trends, challenges, and innovations in technology integration. *Frontiers in Education* (Vol. 10, p. 1562391). Frontiers Media SA. <https://doi.org/10.3389/educ.2025.1562391>