

Collaborative Learning as the Primary Determinant of Student Achievement in Boarding Seminary Schools in Indonesia's 3T Regions: The Roles of Character Coaching and Educational Facilities

Paulus Buarlele¹, Ronald Suryaputra², Yunus Handoko³

^{1,2,3}Institut Teknologi dan Bisnis Asia Malang, Malang, Indonesia

Email: paulusbuarlele79@gmail.com

Article Info	Abstract
Article History Received: 13-08-2026 Revised: 17-08-2026 Published: 28-09-2026	One of the primary measures of how well education is being implemented is student achievement, which is impacted by character development, the quality of the learning experience, and support for infrastructure and facilities. The purpose of this study is to examine how infrastructure, character coaching, and cognitive collaborative learning affect student performance at Asmat Yohanes Evangelist Seminary SMAK, South Papua. The research used a quantitative approach with the Partial Least Squares-Structural Equation Modeling (PLS-SEM) method on 81 students as respondents. Data were collected using a questionnaire that had passed validity and reliability tests, then analyzed by testing the measurement model and structural model. The results of the study showed that cognitive collaborative learning had a positive and significant effect on student achievement ($\beta = 0.473$; $t = 2.749$; $p = 0.006$). Conversely, character coaching ($\beta = 0.172$; $t = 0.978$; $p = 0.328$) and infrastructure ($\beta = 0.167$; $t = 0.956$; $p = 0.339$) did not have a substantial partial effect on student achievement. The research model is capable of explaining 61.2% of the variation in student achievement ($R^2 = 0.612$). These results suggest that cognitive collaborative learning is the primary factor contributing to student achievement, with character mentoring and infrastructure serving as supportive elements. This study provides an empirical contribution by showing that cognitive collaborative learning plays a greater role in improving student achievement than character coaching and infrastructure in boarding schools in the 3T region.
Keywords: (3-5 words) Collaborative Learning, Character Coaching, Infrastructure, Student Achievement, PLS-SEM.	

INTRODUCTION

The global agenda to achieve Sustainable Development Goal (SDG) 4 is to enhance the quality of education by providing inclusive, sustainable, and high-quality education. (Chookerd et al., 2026). Despite the fact that access to education is expanding in numerous countries, the quality of learning outcomes and student achievement continues to be a significant obstacle. (Isnaeni, 2026). The education at a glance 2024 report from the OECD demonstrates that the quality of learning outcomes is influenced by the learning environment, the competence of educators, the efficacy of learning, and the support of educational resources. (Maya Oktaviani, 2024). The UNESCO Global Education Monitoring (GEM) Report 2024/2025 demonstrates that the learning achievement disparity continues to be a significant challenge, as the overall increase in school participation has not been accompanied by improvements in the quality of learning. This condition demonstrates that educational success is not solely determined by the level of school participation, but also by the learning process's ability to generate sustainable student academic achievement. (Martins et al., 2025). Therefore, learning that encourages active student involvement, supported by character building and an adequate learning environment, is increasingly prioritized to improve the quality of education and student achievement. (Safitri & Hafidz, 2025).

In Indonesia, improving the quality of education is still the main priority in human resource development. (Rahimie & Karim, 2026). The government continues to

increase the quality of education through the Independent Curriculum, learning transformation, education digitalization, and enhancing character education. However, education indicators show that student learning outcomes in Indonesia still face challenges in mastering literacy, numeracy, and higher-order thinking skills. This condition illustrates that improving the quality of education does not just depend on the curriculum, but also on the efficacy of learning, character building, and the availability of infrastructure as variables that support student accomplishment. In addition, the gap in the quality of education between regions remains a major challenge, especially for educational units in areas with limited access to educational resources. Therefore, in order to develop more effective learning strategies and educational policies in line with regional characteristics, an empirical study is required to determine the factors that influence student achievement.

At the local level, the challenge of improving student achievement is becoming increasingly complex in educational units located in remote, frontier, and outermost (3T) areas, including Asmat Regency, South Papua Province. The effectiveness of the provision of education in the region is influenced by geographical conditions, limited educational infrastructure, access to learning resources, and the socio-cultural conditions of the community. As a boarding school that blends academic success with character development, spiritual life, discipline, and the habit of cohabitation, Asmat John the Evangelist Seminary High School has distinctive features. These circumstances necessitate instructional methodologies that promote active student participation, bolstered by continuous character development and sufficient infrastructure and facilities. There is still little empirical data on the impact of infrastructure, character coaching, and cognitive collaborative learning on student achievement at seminary schools in the 3T region, despite the implementation of numerous strategies. Therefore, empirical research is needed to analyze the influence of cognitive collaborative learning, character coaching, and infrastructure on student achievement as a basis for improving the quality of education in boarding schools in the 3T region.

Various studies have shown that collaborative learning, character coaching, and infrastructure are factors that have the potential to influence student achievement. (Huwaida et al., 2025). Previous research reported that the implementation of collaborative learning was able to increase student engagement, critical thinking skills, and learning outcomes through active interaction between students. (Novkovic et al., 2026). On the other hand, research on character coaching shows that character coaching contributes to the formation of attitudes, discipline, and responsibility for learning, which can ultimately improve academic achievement. (Rashdi & Attaweel, 2022). In addition, the availability of adequate facilities and infrastructure is also reported to play a role in creating a conducive learning environment that supports the achievement of optimal learning outcomes.

However, the research results indicating the relationship between these three characteristics and student accomplishment still indicate mixed outcomes. Some studies report that collaborative learning has a dominant influence on learning achievement, while other studies show that learning success is more influenced by character factors or learning environment support. Similarly, the impact of infrastructure and character coaching on student achievement has not been consistent across educational unit

characteristics and levels. (Mardiana et al., 2025). The variations in the results show that the school context, student characteristics, and the learning environment used all have a significant impact on each factor's performance.

Apart from the variability of research outcomes, most earlier studies studied each variable separately or were conducted in public schools in urban locations. Research that simultaneously tests the influence of cognitive collaborative learning, character coaching, and infrastructure on student achievement at boarding seminary schools in remote, frontier, and outermost (3T) areas is still very limited. In fact, the characteristics of seminary schools which integrate academic learning, character building, boarding life, and spiritual formation allow for the emergence of different relationship patterns compared to public schools. Therefore, this study was conducted to fill this empirical gap by testing the relative contribution of the three variables to student achievement using the Partial Least Squares-Structural Equation Modeling (PLS-SEM) approach.

By examining the effects of infrastructure, character coaching, and cognitive collaborative learning on student accomplishment at a boarding seminary school in the 3T region, this study makes an empirical contribution. In contrast to previous research, this research shows that cognitive collaborative learning is the most influential factor on student achievement, while character coaching and infrastructure do not have a partial influence. This finding provides a new perspective that in the context of boarding seminary schools in the 3T region, the quality of learning interactions has a more dominant role than other supporting factors. Thus, this study broadens the understanding of the factors that influence student achievement and becomes an empirical basis for the development of learning strategies in boarding schools.

Three theoretical stances that explain the connection between the learning process, character development, learning environment, and student achievement form the basis of this study. First, the Social Constructivism Theory put forward by Vygotsky explains that knowledge is constructed through social interaction and collaboration between students. (Zhang, 2023). According to this viewpoint, cognitive collaborative learning promotes discussion, idea sharing, group problem solving, and the development of critical thinking abilities in order to enhance conceptual understanding and academic performance. Therefore, the quality of interaction in the learning process is seen as one of the main factors that influences students' academic success.

Second, Lickona's Character Education Theory highlights that education aims to foster moral values, responsibility, discipline, integrity, and social concern in addition to enhancing academic skills. (Imawan & Ismail, 2023). Character coaching becomes an essential component of the educational process in a boarding school setting since it is consistently implemented through coaching, mentoring, and role modeling. This, character development is predicted to be able to establish good learning behavior and enhance the improvement of students' academic accomplishment.

Third, the Resource-Based View (RBV) explains that the availability of organizational resources, including educational facilities and infrastructure, is a strategic asset that can increase the effectiveness of the learning process. (Iqbal et al., 2025). A more favorable learning environment is said to be able to assist student achievement if it is supported by sufficient classrooms, instructional facilities, labs,

libraries, and pertinent learning materials. Based on these three perspectives, this study develops a conceptual model that tests the influence of cognitive collaborative learning, character coaching, and infrastructure on student achievement at a boarding seminary school in a remote, frontier, and outermost (3T) region.

Based on the empirical phenomena, research gaps, and scientific contributions that have been described, this study aims to analyze the influence of cognitive collaborative learning, character coaching, and infrastructure on student achievement at the Yohanes Evangelist Seminary SMAK Asmat, South Papua. Specifically, this study aims to test the influence of each variable on student achievement and analyze the contribution of the three variables simultaneously in explaining variations in student achievement. In addition, this study aims to identify the most dominant factors influencing student achievement at boarding seminary schools in remote, frontier, and outermost (3T) areas. The results of this research are expected to enrich empirical studies on factors that influence student achievement in the context of boarding education and become a basis for school administrators and policymakers in formulating more effective learning and student development strategies to improve the quality of education in the 3T region.

RESEARCH METHOD

This study uses a quantitative approach with an explanatory research design to analyze the causal relationship between cognitive collaborative learning, character coaching, facilities and infrastructure, and student achievement. This method was selected because it may employ hypothesis testing based on empirical data collected from respondents to understand the relationship between variables.

The research was conducted at the Asmat Yohanes Evangelist Seminary SMAK, Asmat Regency, South Papua Province, which is a boarding school in the remote, frontier, and outermost (3T) areas. The research location was chosen because it has learning characteristics that integrate academic education, character building, and boarding life, thus providing a relevant context for testing the research model.

The research population was all active students of the Asmat Yohanes Evangelist Seminary SMAK in the 2025/2026 Academic Year. The population size is relatively limited; the study used a saturated sampling technique (census sampling) so that all 81 students became research respondents.

Primary data was collected using a closed questionnaire with a five-level Likert scale, namely 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. Based on the indicators of each variable that were modified from earlier studies and tailored to the features of the seminary school, the research instrument was built. Before being used in research, the instrument has undergone validity and reliability testing to ensure that each indicator is able to measure the research construct consistently.

This research involves four constructs, namely cognitive collaborative learning (X1), character coaching (X2), facilities and infrastructure (X3), and student achievement (Y). Cognitive collaborative learning is measured based on indicators that describe learning interactions, group discussions, joint problem solving, and active student

involvement. Character coaching is measured through indicators of developing discipline, responsibility, integrity, leadership, and habituating character values. Facilities and infrastructure are measured based on the availability of learning facilities, study rooms, learning media, laboratories, libraries, and other supporting facilities. Student achievement is measured based on indicators of academic achievement, ability to understand material, learning evaluation results, and achievement of learning competencies.

Data analysis was carried out using Partial Least Squares-Structural Equation Modeling (PLS-SEM) with the help of SmartPLS 4 software. Because it can simultaneously assess the link between latent variables, is appropriate for predictive research models, and still yields stable results in very small sample sizes, the PLS-SEM method was selected.

The analysis phase includes two main stages. The first stage is the evaluation of the measurement model (outer model), which consists of testing convergent validity using outer loading values (>0.70) and Average Variance Extracted (AVE >0.50), discriminant validity using the Fornell-Larcker criteria and Heterotrait-Monotrait Ratio (HTMT), and construct reliability using Composite Reliability (>0.70) and Cronbach's Alpha (>0.70). The second stage is the evaluation of the structural model (inner model) through testing the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), model fit (SRMR), and hypothesis testing using the bootstrapping procedure. The hypothesis is declared accepted if the t-statistic value is > 1.96 and the p-value is < 0.05 at a significance level of 5%.

Ethical research principles were followed throughout the entire process. The researcher informed each responder of the study's goals and secured permission from the school before beginning data collecting. Respondent participation is voluntary, respondent identities are kept confidential, and all data is used for academic purposes only.

Tabel 1

Operational Variables

Variables	Indicator	Item Code	Number of Items
Cognitive Collaborative Learning	Discussion, interaction, problem solving, collaboration	X1.1-X1.10	10
Character Coaching	Discipline, responsibility, integrity, leadership	X2.1-X2.8	8
Facilities and infrastructure	Class fees, laboratory, library, learning media	X3.1-X3.9	9
Student Achievement	Academic achievement, competency mastery, evaluation results	Y1.1-Y1.6	6

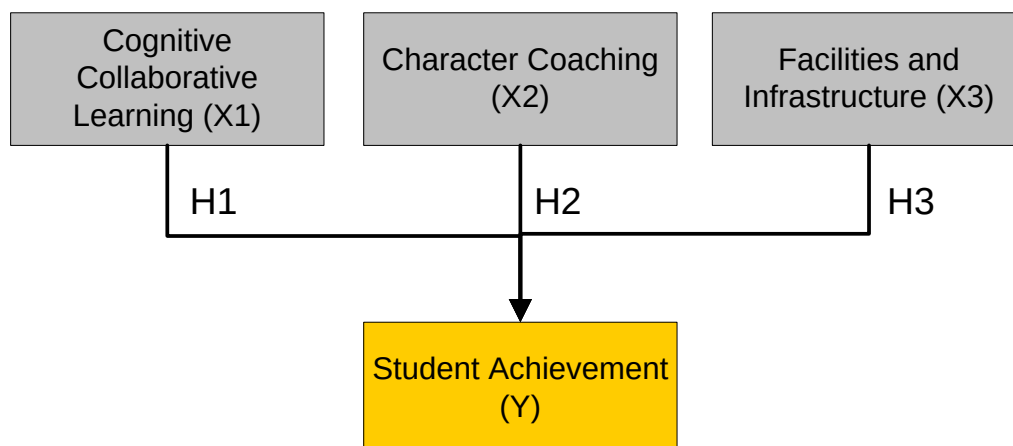


Figure 1 Conceptual Research Model

Information:

X1 = Cognitive Collaborative Learning

X2 = Character Coaching

X3 = Facilities and infrastructure

Y = Student Achievement

H1 = The Influence of Cognitive Collaborative Learning on Student Achievement

H2 = The Influence of Character Coaching on Student Achievement

H3 = The Influence of Facilities and Infrastructure on Student Achievement

Result

3.1 Respondent Characteristics

This study involved 81 students from the Yohanes Evangelist Asmat Seminary High School as respondents. All respondents were active students participating in the learning process during the 2025/2026 academic year. Respondent characteristics were analyzed based on class level, age, and gender to provide an overview of the distribution of the research sample. The distribution of respondents shows that all samples are able to represent the research population because they use a saturated sampling technique (census sampling).

Table 2

Characteristics of Respondents

Characteristics	Frequency	Percentage
Class X	46	56,79
Class XI	35	43,21
Male	55	67,90
Female	26	32,10

3.2 Measurement Model

Measurement model evaluation was conducted to ensure that each indicator was able to measure the research construct validly and reliably. Convergent validity was evaluated using outer loading values and Average Variance Extracted (AVE). All indicators have outer loading values above 0.70, thus fulfilling the convergent

validity criteria. In addition, all constructs have AVE values greater than 0.50, indicating that the constructs are able to explain more than 50% of the indicator variance.

3.2.1 Convergent Validity

Convergent validity is evaluated using outer loading values and Average Variance Extracted (AVE). All indicators have an outer loading value above 0.70, which indicates that each indicator is able to represent the measured latent construct well. In addition, all constructs obtained AVE values greater than 0.50, indicating that each construct was able to explain more than 50% of the variance in its indicators. The results of the convergent validity test are presented in Table 3.

Tabel 3

Convergent Validity Results

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
X1	0.568	0.702	0.712	0.712
X2	0.749	0.775	0.817	0.319
X3	0.771	0.794	0.811	0.317
Y1	0.753	0.780	0.815	0.317

3.2.2 Discriminant Validity

Discriminant validity was evaluated using the Heterotrait-Monotrait Ratio (HTMT) value to ensure that each construct had an adequate level of discrimination. Each concept has excellent discriminant validity and can be experimentally separated from other constructs, according to the test findings, which are shown in Table 4. All HTMT values are below the 0.90 threshold.

Tabel 4

Results of Discriminant Validity Test (HTMT)

Constructs	X1	X2	X3	Y1
X1	0.500			
X2	0.628	0.565		
X3	0.495	0.762	0.563	
Y1	0.663	0.596	0.532	0.5653

3.2.3 Reliability

Construct reliability was evaluated using Cronbach's Alpha and Composite Reliability (CR) values to measure the internal consistency of each research construct. Generally speaking, a construct is deemed dependable if its Composite Reliability and Cronbach's Alpha values are higher than 0.70. The test results show that all constructs have a Composite Reliability value above 0.70, while the Cronbach's Alpha value ranges from 0.568 to 0.771. The Composite Reliability score of 0.712 shows that the Cognitive Collaborative Learning construct (X1) still has sufficient internal

consistency even though its Cronbach's Alpha value is less than 0.70. Thus, all constructs were certified reliable and eligible for use in structural model analysis. The results of the reliability tests are provided in Table 5.

Tabel 6
 Reliability Test Results

Construct	Cronbach's Alpha(CA)	Composite Reliability(CR)	Description
X1	0,568	0,712	Reliabel
X2	0,749	0,817	Reliabel
X3	0,771	0,811	Reliabel
Y1	0,753	0,815	Reliabel

3.3 Structural Model

Structural model evaluation is carried out to examine the model's ability to explain the link between latent variables through the Coefficient of Determination (R^2), Predictive Relevance (Q^2), Standardized Root Mean Square Residual (SRMR), and Effect Size (f^2).

3.3.1 Coefficient of Determination (R^2)

The ability of exogenous variables to explain endogenous variables is measured by the R^2 value. According to the test results, the Student Achievement variable's R^2 value is 0.612. This value indicates that Cognitive Collaborative Learning, Character Coaching, and Facilities and Infrastructure simultaneously explain 61.2% of the variation in student achievement, while the remaining 38.8% is influenced by factors outside the research model. This value indicates that the model has moderate to strong explanatory power.

3.3.2 Predictive Relevance (Q^2)

The Q^2 value is used to evaluate the prediction power of the model versus endogenous factors. The test results show that the Student Achievement variable has a Q^2 value of 0.103. The model has positive predictive relevance, meaning it can forecast student accomplishment characteristics based on the study's constructs because the value is greater than zero ($Q^2 > 0$).

3.3.3 Model Fit (SRMR)

Model fit was evaluated using the Standardized Root Mean Square Residual (SRMR) value. The test results showed an SRMR value of 0.116. This value exceeds the ideal limit of 0.08 and is also above the generally acceptable limit of 0.10. Thus, the model shows a level of fit that is not optimal, so the analysis results need to be interpreted by considering the limitations of the model.

3.3.4 Effect Size (f^2)

The Effect Size (f^2) value is used to measure the contribution of each exogenous variable to the endogenous variable. Interpretation of the f^2 value refers to the following criteria: $0.02 \leq f^2 < 0.15$ indicates a small effect, $0.15 \leq f^2 < 0.35$ indicates a medium effect, and $f^2 \geq 0.35$ indicates a large

effect. The results of the effect size test are presented in Table 6.

Table 6

Effect size test results

	X1	X2	X3	Y1
X1				0,273
X2				0,020
X3				0,023
Y1				

RESULTS AND DISCUSSION

4.1 The Influence of Cognitive Collaborative Learning on Student Achievement

The results of the study reveal that cognitive collaborative learning has a favorable and significant effect on student achievement. These results suggest that enhancing student-to-student learning interactions can promote greater conceptual comprehension, critical thinking abilities, and cooperative problem solving, all of which have an impact on raising academic attainment. In a boarding seminary setting, student interactions occur not just in the classroom during the learning process but also in the dorm on a regular basis. This condition provides greater opportunities for students to discuss, help each other understand the material, and build a culture of learning together.

The findings of this study are in line with the Social Constructivism Theory put forward by Vygotsky, which emphasizes that knowledge is constructed through social interaction and collaboration. In addition, the results of this study are also consistent with several previous studies which concluded that collaborative learning is able to improve academic achievement by increasing active participation and the quality of learning interactions. at order to improve student achievement at boarding schools in the 3T region, this research supports empirical evidence that cognitive collaborative learning methodologies should be given top priority.

4.2 The Influence of Character Coaching on Student Achievement

In contrast to initial expectations, the research results showed that character coaching did not have a significant effect on student achievement. This finding indicates that character development implemented in schools has not directly improved students' academic achievement. One explanation could be that character coaching has a bigger impact on learning behavior, discipline, attitudes, and responsibilities than it does on academic performance. To put it another way, the impact of character coaching on student accomplishment is probably indirect due to other factors like learning motivation, learning discipline, or student participation in the learning process.

The results of this study present a new perspective that the success of character education is not always reflected in short-term advances in academic achievement. The development of students' behavior, leadership, integrity, and social skills should therefore be taken into account as equally significant educational outcomes in addition to academic value indicators when assessing the efficacy of character coaching.

4.3 The Influence of Facilities and Infrastructure on Student Achievement

This study shows that facilities and infrastructure do not have a significant effect on student achievement. This finding indicates that the availability of learning facilities alone is not enough to improve academic achievement if it is not accompanied by effective learning strategies and active student involvement in the learning process. Learning styles, academic culture, and the level of instructor support all have an impact on how educational facilities are used in boarding seminaries. Therefore, rather than just being available, the success of infrastructure and facilities depends more on how they are used to support the learning process. The study's findings support the idea that, in order to have the best possible effect on student achievement, investments in educational facilities must be balanced with advancements in the caliber of the learning process and teacher competency.

4.4 Research Implications

This research provides theoretical and practical contributions to the development of educational management, particularly in boarding schools in the 3T region. Theoretically, this study strengthens Social Constructivism Theory by showing that cognitive collaborative learning is the most dominant factor in improving student achievement. On the other hand, this study shows that character coaching and infrastructure have not had a direct influence on academic achievement, thus opening up opportunities for further research to test the indirect relationship mechanism through mediating or moderating variables.

Practically speaking, the study's findings give school managers a foundation for giving collaborative learning practices top priority as part of initiatives to raise educational standards. Infrastructure development and character coaching programs still need to be put into place, but in order to have the best possible influence on student accomplishment, they must be more successfully integrated with the educational process.

CONCLUSION

This study aims to analyze the influence of cognitive collaborative learning, character coaching, and infrastructure on student achievement at SMAK Seminari Yohanes Evangelist Asmat, South Papua. The results of the study show that cognitive collaborative learning is the only variable that has a positive and significant influence on student achievement. However, there was no discernible direct impact of infrastructure or character coaching on student progress. In addition, the research model was able to explain 61.2% of the variation in student accomplishment, whereas the remaining 38.8% was influenced by various factors outside the research model. These findings indicate that the improvement in student achievement at boarding seminary schools in remote, frontier, and outermost (3T) areas is more influenced by the quality of the collaborative learning process than by character development or the direct availability of facilities and infrastructure. In order to improve the quality of learning, it is necessary to prioritize the creation of learning strategies that promote interaction, discussion, problem solving, and active student involvement. The Social Constructivism Theory, which emphasizes the value of social interaction in the learning

process to enhance learning outcomes, is theoretically strengthened by this research. Practically, the research results provide input for school administrators and policy makers to prioritize strengthening collaborative learning, without ignoring the importance of character development and providing infrastructure as supporting factors in creating an effective learning environment.

This research has limitations because it was only conducted at one seminary school with a relatively limited number of respondents, so the research results cannot be generalized to all secondary schools in Indonesia. It is recommended that further research involve more schools with different characteristics, expand the sample size, and develop the research model by adding mediating or moderating variables, such as learning motivation, student involvement, teacher competence, or school culture, so that the mechanism of the relationship between variables can be explained more comprehensively.

REFERENCES

- Assefa, E. A. (2026). *Infrastructure matters: How school facilities influence quality education*. 16(May), 73–95.
- Chookerd, N., Wanchai, A., Juychum, D., Tawanwongsri, W., Eden, C., Kaeophanuek, S., & Nantakat, B. (2026). Awareness, knowledge, and educational determinants of Sustainable Development Goal 4 (Quality Education) among university students: a systematic review. *Frontiers in Education*, 11(June). <https://doi.org/10.3389/feduc.2026.1863951>
- Huwaida, N., Aini, Q., Jinan, M., Salim, H., Anggraini, F. N., & Najib, F. M. (2025). A Systematic Literature Review on the Influence of Religious Education on Character Development and Academic Achievement in Middle School Students. *Proceeding ISETH (International Summit on Science, Technology, and Humanity)*, 1471–1481. <https://proceedings.ums.ac.id/iseth/article/view/6949>
- Imawan, O. R., & Ismail, R. (2023). Analysis of Character Education Values on the Learning Achievement of Elementary School Teacher Candidates. *International Journal of Mathematics and Mathematics Education*, 1, 103–131. <https://doi.org/10.56855/ijmme.v1i02.331>
- Iqbal, M., Faheem, A., & Bilal, S. (2025). Building Success: The Role of Academic Facilities and Teaching Techniques in Shaping Secondary Level Students Performance in Pakistan. *Interdisciplinary Journal of Emerging and Social Sciences*, 2(3), 284–294. <https://doi.org/10.62460/ijeass/2025.48>
- Isnaeni, D. S. (2026). *Analysis of Effectiveness, Equity, and Capability in the Implementation of Free Education Policy in Subang Regency for the 2024 – 2025 Academic Year*. 4(1).
- Jaya, A., Hartono, R., Wahyuni, S., & Yulianto, H. (2025). *The Power of Collaborative Learning: How Peer Interaction Improves Student Learning Outcomes?*. *Journal of Education and Applied Teaching (JEAT)*, 1(1), 1–10. 1, 1.
- Mardiana, M., Ananda, R., & Rifa'i, M. (2025). Curriculum Management in Madrasah Aliyah Islamic Boarding Schools to Enhance Character Education. *Journal of General Education and Humanities*, 4(3), 1133–1146. <https://doi.org/10.58421/gehu.v4i3.639>
- Martins, F., Cezarino, L. O., Challco, G. C., Liboni, L., Dermeval, D., Bittencourt, I., Paiva, R., da Silva, A., Marques, L., Isotani, S., & Bittencourt, I. I. (2025). The Role of Hybrid Learning in

- Achieving the Sustainable Development Goals. *Sustainable Development*, 33(4), 4792–4809.
<https://doi.org/10.1002/sd.3374>
- Maya Oktaviani. (2024). International Education Trend issues. *International Education Trend Issues*, 2(2), 317–328.
- Novkovic, D., Kompen, R. T., & Petchamé, J. (2026). Active learning strategies in business and information & communication technology engineering higher education: A scoping review. *Review of Education*, 14(2). <https://doi.org/10.1002/rev3.70158>
- Rahimie, M., & Karim, A. (2026). SOCIO-ECONOMIC OUTCOMES: A SYSTEMATIC LITERATURE. 13(1), 27–45.
- Rashdi & Attaweel. (2022). *Journal of Educational*. 525–552. *مج - ال لة - ترب - وي*
<https://doi.org/10.58218/jes.v6i1.3442>
- Safitri, N., & Hafidz, H. (2025). Artificial Intelligence-Based Learning Innovations: A Systematic Review of the Influence of AI Technology in Education. *Proceeding ISETH (International Summit ... , 2020, 759–774.*
<https://proceedings.ums.ac.id/iseth/article/view/6876%0Ahttps://proceedings.ums.ac.id/iseth/article/download/6876/6221>
- Saidi, S., Sulistiono, D., Subaeri, A. H., Huda, N., Zainul, M., & Haris, A. (2025). Developing a Mentoring Program for Shaping Students' Islamic Character. *Nazhruna: Jurnal Pendidikan Islam*, 8(1), 195–213. <https://doi.org/10.31538/nzh.v8i1.120>
- Shengqiang, L., Srikhao's, S., & Nankhantee, A. (2025). Combining inquiry-based learning and collaborative learning: a new model for improving students' teamwork and problem-solving skills. *Journal of Education and Educational Development*, 12(1), 13–38.
<https://doi.org/10.22555/joeed.v12i1.1296>
- Zhang, Z. (2023). Collaborative Learning in Social Constructivism: Promoting English Learning in a Secondary Classroom in China. *Journal of Education and Educational Research*, 3(3), 1–5.
<https://doi.org/10.54097/jeer.v3i3.9509>