



The Influence of PAI Teachers' Pedagogical Competence in Applying Various Learning Models on Student Motivation and Learning Outcomes

Risa Wulandari^{1*}, Ellisa Fitri Tanjung², Nurzannah³ 

^{1,2,3} Universitas Muhammadiyah Sumatera Utara, Indonesia

ARTICLE INFO

Article history:

Received April 28, 2024

Accepted July 10, 2024

Available online July 25, 2024

Kata Kunci :

Hasil Belajar, Kompetensi Pedagogik, Model Pembelajaran, Motivasi..

Keywords:

Learning Outcomes, Pedagogical Competencies, Learning Models, Motivation.



This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.

Copyright ©2024 by Author. Published by Universitas Pendidikan Ganesha

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh kompetensi pedagogik guru PAI dalam menerapkan model pembelajaran bervariasi terhadap motivasi dan hasil belajar siswa. Latar belakang penelitian ini adalah perlunya strategi pembelajaran yang lebih variatif untuk meningkatkan motivasi dan hasil belajar siswa. Penelitian ini menggunakan pendekatan kuantitatif dengan metode regresi ganda. Subjek penelitian adalah siswa kelas VIII di SMPN 2 Beringin Satu Atap, dengan sampel sebanyak 39 siswa yang dipilih melalui teknik total sampling. Data dikumpulkan menggunakan angket atau kuesioner, tes, dan observasi. Hasil penelitian menunjukkan bahwa model pembelajaran bervariasi berpengaruh positif terhadap motivasi dan hasil belajar siswa. Hal ini dibuktikan dengan nilai Sig. (2-tailed) sebesar 0,096 dan 0,156 yang lebih besar dari 0,05. Kesimpulan dari penelitian ini adalah bahwa motivasi dan hasil belajar siswa setelah diberikan model pembelajaran bervariasi lebih baik dibandingkan sebelumnya. Penelitian ini memberikan implikasi bahwa penerapan pembelajaran variatif dapat menjadi acuan bagi guru dalam meningkatkan efektivitas pembelajaran dari segi konten, strategi, metode, dan pendekatan pengajaran.

ABSTRACT

This study aims to determine the influence of the pedagogic competence of PAI teachers in applying varied learning models on student motivation and learning outcomes. The background of this research is the need for more varied learning strategies to improve student motivation and learning outcomes. This study uses a quantitative approach with a multiple regression method. The subject of the study was grade VIII students at SMPN 2 Beringin Satu Atap, with a sample of 39 students selected through the total sampling technique. Data is collected using questionnaires or questionnaires, tests, and observations. The results of the study show that varied learning models have a positive effect on student motivation and learning outcomes. This is evidenced by the Sig. (2-tailed) values of 0.096 and 0.156 which are greater than 0.05. The conclusion of this study is that the motivation and learning outcomes of students after being given the learning model vary better than before. This study has implications that the application of varied learning can be a reference for teachers in improving learning effectiveness in terms of content, strategies, methods, and teaching approaches.

1. INTRODUCTION

Learning variation is crucial because it can transform an uninteresting learning environment into one that is more engaging. One example of this would be differences in learning models (Akbar, 2021; Santos-Meneses & Drugova, 2023). Project Based Learning (PjBL) is one of the learning model modifications. The PjBL learning paradigm, also known as the project-based model, bases its projects and activities on actual experiences with everyday tasks (Alghamdi & Al-Ghamdi, 2021; Sinakou et al., 2022). By allowing students to develop their own knowledge and produce a project based on real experience from working with others in their group and receiving help from the teacher, this learning style is said to give them a more engaging and meaningful learning experience (Lubis et al., 2022; Nurhalimah et al., 2020). The traditional course design places more emphasis on the teacher and less emphasis on the role and actions of the student in the learning process (Aminah, 2014; Enright et al., 2022). Students find

*Corresponding author

E-mail addresses: risarahmanrizqia@gmail.com (Risa Wulandari)

learning to be tedious, difficult to understand, and monotonous, which deters them from learning. There may be a great deal of confusion as a result, which could impact student learning outcomes. In addition, there is currently little interaction between teachers and pupils. When a teacher poses a topic, very few pupils are able to provide an adequate response since many of them are reluctant to ask questions regarding content they don't understand (Anggoro et al., 2018; Beard & Mathias, 2021). A review of the pedagogical skills of PAI teachers in the learning process is required in light of the realities in schools. This is due to the fact that pedagogical competence, which impacts the caliber of learning within and outside of the classroom, is one of the skills that teachers must possess (Badruzaman et al., 2015; Viesca et al., 2022). Teaching variants are one way that teachers can demonstrate their pedagogical skill. Teaching variants begin with the use of active learning techniques and strategies, the updating and upgrading of knowledge and teaching abilities, and the emotional approach to students in order to facilitate their acceptance of the subject. In fact, it was discovered during the preliminary investigation that the PAI teachers at SMPN 2 Beringin Satu Roof were not using variations in their teaching methods to the best of their abilities. Many teachers still only focus on imparting knowledge during the teaching process; they do not attempt to package knowledge in a way that will inspire pupils. It is thought that contextualized learning offers an alternative for achieving the best possible learning results (Destiniar et al., 2020; Rios et al., 2024). To determine the changes that take place in every student, a thorough evaluation of the efficacy and efficiency of learning is conducted. The alterations in question are undoubtedly based not only on test scores or report card grades, but also on the abilities and attitudes of the students during the learning process (Dirgantara et al., 2024; Kalinec-Craig & Rios, 2024). Learning outcomes are thus continuously assessed, beginning with student motor activities, behavioral shifts, and mastery of the instructional content. It is known that student learning outcomes based on the 2023/2024 Odd Semester Test Scores had an average score below the KKM, namely 53 from the Minimum Completeness Criteria, namely 71, according to a preliminary study conducted at SMPN 2 Beringin One Roof. The data indicates that the learning outcomes of students in Islamic Religious Education courses are comparatively low. Additionally, it is evident from transient observations made at SMPN 2 Beringin One Roof that kids are still unmotivated to learn Islamic Religious Education. Students who lack motivation during the learning process become less interested in the subjects they are supposed to be studying. When it comes to finishing their tasks for Islamic Religious Education, students also have a tendency to be lethargic. This occurs as a result of teachers continuing to employ traditional learning approaches.

Evaluations of quality learning frequently focus on the accomplishments and outcomes of the students. Of course, in order to achieve both, a thoroughly planned, arranged, and supervised procedure must be established (Hardiyati et al., 2022; Lee et al., 2023). Additional encouragement from teachers to their students is also necessary to meet the quality standards for learning. In this instance, teachers are supposed to be able to impact students' motivation, sense of achievement, and discipline in adhering to the learning process by their own competency (Jailani, 2023; Siegle et al., 2014). The novelty of this study is to highlight the importance of learning variations in creating a more interesting and effective learning environment compared to traditional methods that tend to be boring and monotonous. The use of Project-Based Learning (PjBL) is one of the innovations in the learning model that allows students to learn through hands-on experiences and real projects, which can increase student engagement and understanding. The purpose of this research is to reduce boredom and monotony in learning that is often felt by students, by applying a variety of learning methods that are more interactive and creative. One of the other important goals is to improve student learning outcomes in Islamic Religious Education subjects, which have been under the Minimum Completeness Criteria (KKM). With the PjBL method, this research also aims to develop students' cooperation skills and social skills, through projects that are carried out in groups. From this research, it is hoped that the following results will be obtained: improving the quality of learning that is more interesting, interactive, and meaningful for students; increasing student motivation so that they become more motivated and interested in learning Islamic Religious Education; increasing the competence of teachers who have better pedagogic skills in applying a variety of learning methods; increase student learning outcomes with increased exam scores and above KKM.

2. METHOD

This research uses a quantitative approach with the multiple regression method, namely a statistical technique that simultaneously develops a mathematical relationship between two or more independent variables and a dependent variable (Assingkily, 2021; Setyosari, 2016). This is aimed at finding out the influence of teachers' pedagogical competence in implementing varied learning models on student motivation and learning outcomes. The variables in this research are the independent variables in the form of varied learning models (variable X), while the dependent variables are motivation (variable

Y1) and learning outcomes (variable Y2). The research setting took place at SMPN 2 Beringin One Roof. The population in this study were all class VIII students at SMPN 2 Beringin Satu Roof, totaling 39 students. The sample is part of the number and characteristics of the population. As for determining the number of samples, the researcher total sampling. Total sampling is a sampling technique, where the number of samples is the same as the population. The reason for taking total sampling was because the population was less than 100. So, the number of samples in this study was 39 respondents. Data collection techniques use questionnaires, tests and observations. Questionnaires were given to PAI teachers at SMPN 2 Beringin Satu Roof to obtain data about pedagogical competence. The questionnaire used in this research is a closed questionnaire (individuals subject to the questionnaire just have to choose the answers provided). The scoring system used is a Likert scale (includes: always = 4, often = 3, sometimes = 2, never = 1). A research instrument is a tool used to collect data or measure the object of a research variable (Assingkily, 2021; Setyosari, 2016). To obtain correct data for conclusions that are in accordance with the actual situation, an instrument is needed that is valid, consistent and precise in providing research data (reliable). Instrument reliability tests include test-retest, equivalent, and internal consistency. The internal consistency test has several testing techniques depending on the type of instrument. These testing techniques include the split half, KR 20, KR 21, and Cronbach's Alpha tests. The validity and reliability values of an instrument are influenced by the subject being measured, the instrument user, and the instrument itself. Thus, validity and reliability must always be tested before the instrument is used.

3. RESULT AND DISCUSSION

Result

The value of the provided Pretest and Posttest results will be discussed along with the research findings. To determine whether or not different learning models have an impact on student motivation and learning outcomes, the pretest and posttest results will serve as a standard or reference. Data analysis is necessary once the data has been gathered. In order for the MANOVA test to serve as the foundation for the estimation that was used subsequently, the researcher employed a precondition test prior to data processing. The normalcy test and the homogeneity test are the two assessments that make up the prerequisite exam. In the meanwhile, do the MANOVA test to evaluate the hypothesis. Two sets of data—the pretest and posttest—from the experimental class and the control class were used to perform the normality test. To determine if something has a normal distribution or not, do the normality test. Assuming the data fulfills the requirements for a significance level greater than 0.05 and is regularly distributed. Using SPSS 26, data normality findings are obtained. The results of the calculations for the normalcy test showed in Table 1.

Table 1. Normality Test of Learning Results

Class		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Learning Results	Pre_Eksperiment	.121	28	.200*	.946	28	.160
	Post_Eksperiment	.140	28	.169	.939	28	.107
	Pre_control	.115	28	.200*	.942	28	.124
	Post_control	.149	28	.114	.931	28	.066

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

The experimental class pretest had a sig value of 0.200 > 0.05, and the experimental posttest had a sig value of 0.169 > 0.05, according to the data results in Table 1. In contrast, the control class pretest had a sig value of 0.200 > 0.05, and the control posttest had a sig value of 0.114 > 0.05. Thus, it may be said that the data on learning outcomes has a normal distribution. Normality Test of Learning Motivation Questionnaire Data showed in Table 2. The learning motivation data was found to be normally distributed based on the results of the Kolmogorov-Smirnov Test presented in Table 2, which indicated that the experimental class pretest and experimental posttest were both 0.200 > 0.05, while the control class pretest and control posttest were both 0.200 > 0.05. To determine if the data is homogeneous or not, apply the homogeneity test. The researcher can move on to more stages of data analysis if homogeneity is met. Using SPSS 26, the researcher tests for homogeneity.

Table 2. Normality Test of Learning Motivation Questionnaire Data

	Class	Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Learning Motivation	Pre_Eksperiment	.132	28	0.200	0.929	28	0.057
	Post_Eksperimen	.098	28	0.200	0.971	28	0.606
	Pre_Control	.132	28	0.200	0.926	28	0.049
	Post_Control	.131	28	0.200	0.939	28	0.107

This test's homogeneity test makes use of posttest score data from both the experimental and control classes. The significant value indicates the homogeneity test findings. A significant value greater than 0.05 indicates that the data is homogeneous. The results of the computations for the homogeneity test for the Islamic Religious Education (PAI) value data. Homogeneity Test of Learning Results showed in Table 3.

Table 3. Homogeneity Test of Learning Results

		Levene Statistic	df1	df2	Sig.
Learning Results	Based on Mean	0.359	1	54	0.551
	Based on Median	0.290	1	54	0.592
	Based on Median and with adjusted df	0.290	1	53.255	0.592
	Based on trimmed mean	0.324	1	54	0.572

It can be inferred from Table 3 stated that the variance of the learning outcomes data for the experimental posttest and control posttest classes is the same or homogeneous. The Based on Mean sig value is $0.551 > 0.05$. Following the experimental class posttest and control class posttest, the learning motivation questionnaire scores of students in class VIII are used for this homogeneity test. The significant value indicates the homogeneity test findings. A significant value greater than 0.05 indicates that the data is homogeneous. The findings of the homogeneity test calculation for the learning motivation questionnaire showed in Table 4.

Table 4. Test of Homogeneity of Learning Motivation

		Levene Statistic	df1	df2	Sig.
Learning Motivation	Based on Mean	3.570	1	54	0.064
	Based on Median	2.941	1	54	0.092
	Based on Median and with adjusted df	2.941	1	52.248	0.092
	Based on trimmed mean	3.492	1	54	0.067

The results of the tests conducted indicated that the significance value was 0.64. The data is deemed homogeneous because the significance value is greater than 0.05, specifically $0.64 > 0.05$. Thus, the two classes that were used for the research have a similar learning motive. To see if there were any changes in the PAI learning outcomes and students' motivation following treatment with different learning models as opposed to prior to receiving (traditional) treatment, researchers employed the MANOVA test. The MANOVA test showed in Table 5.

Table 5. Spss 26 Manova Test Output (1)

	Learning Model	Mean	Std. Deviation	N
Learning Results	Varies	78.57	8.262	28
	Conventional	73.57	7.310	28
	Total	76.07	8.130	56
Learning Motivation	Varies	86.00	3.897	28
	Conventional	82.18	5.085	28
	Total	84.09	4.885	56

The results of the hypothesis testing calculations on students' motivation and PAI learning outcomes, namely classes with 39 students utilizing a variety of learning models, are based on Table 5 above. The average student learning outcomes are 78.57 and the average learning motivation is 86.00. In contrast, students who use the traditional paradigm (lecture) have an average learning outcome of 73.57 and an average learning motivation of 82.18. This demonstrates that students who receive instruction using a variety of learning models have higher levels of motivation and learning outcomes than students who do not receive such instruction. SPSS 26 MANOVA Test Output (2) showed in Table 6.

Table 6. SPSS 26 MANOVA Test Output (2)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Learning Result	350.000	1	350.000	5.752	0.020	0.096
	Learning Motivation	204.446	1	204.446	9.963	0.003	0.156
Intercept	Learning Result	324064.286	1	324064.286	5325.926	0.000	0.990
	Learning Motivation	395976.446	1	395976.446	19296.625	0.000	0.997
Learning Model	Learning Result	350.000	1	350.000	5.752	0.020	0.096
	Learning Motivation	204.446	1	204.446	9.963	0.003	0.156
Error	Learning Result	3285.714	54	60.847			
	Learning Motivation	1108.107	54	20.521			
Total	Learning Result	327700.000	56				
	Learning Motivation	397289.000	56				
Corrected Total	Learning Result	3635.714	55				
	Learning Motivation	1312.554	55				

Several rows make up the results of the hypothesis test output in the test of between-subject effects table; the first row (Corrected Model) assesses the validity of the impact of using different learning models on students' motivation and learning outcomes in PAI learning both before and after using different learning models. The purpose of the second row, called the intercept, is to calculate the value of changes in student motivation and learning outcomes independent of the use of learning methods. The third row, called the class, is used to calculate the impact of using different learning models on student motivation and learning outcomes. The recapitulation results in this research showed in Table 7.

Table 7. Recapitulation of Research Results

Research Hypothesis	Research result	Research Criteria	Interpretation	Conclusion
There is an influence of varied learning models on students' learning motivation in class VIII of SMP Negeri 2 Beringin Satu Roof.	Significant level = 0,096	Significant level = 0,096 > 0,05	H ₀ accepted & H _a rejected	There is an influence of varied learning models on students' learning motivation in class VIII of SMP Negeri 2 Beringin Satu Roof.
There is an influence of varied learning models on student learning outcomes in class VIII of SMP Negeri 2 Beringin One Roof.	Significant level = 0,156	Significant level = 0,156 > 0,05	H ₀ accepted & H _a rejected	There is an influence of varied learning models on student learning outcomes in class VIII of SMP Negeri 2 Beringin One Roof.

Research Hypothesis	Research result	Research Criteria	Interpretation	Conclusion
There is an influence of varied learning models on the motivation and learning outcomes of students in class VIII of SMP Negeri 2 Beringin One Roof.	Significant level = 0,096 and 0,156	Significant level = 0,096 and 0,156 > 0,05	H ₀ accepted & H _a rejected	There is an influence of varied learning models on the motivation and learning outcomes of students in class VIII of SMP Negeri 2 Beringin One Roof.

Discussion

According to previous research quality learning is often assessed from the aspects of student outcomes and achievements (Khusna & Priyanti, 2023; Lee et al., 2023). To obtain both, of course it requires the creation of a process that is planned, organized and monitored comprehensively. In line with this, similar research stated that achieving quality learning also requires extra stimulus from teachers towards students (Li et al., 2021; Siegle et al., 2014). In this case, teachers through their own competence are expected to be able to influence motivation, spirit of achievement and discipline in following the learning process. This study, which was based on research done with class VIII students at SMP Negeri 2 Beringin Satu Roof, employed exams and questionnaires to gather information about the learning outcomes and motivation of the students. Researchers employed a variety of learning models in this study. This study aims to clarify the following points raised in the discussion: first, how different learning models affect learners' motivation and learning objectives. Researchers' significant level values for the impact of different learning models on students' learning outcomes and motivation are 0.156 and 0.069. This value suggests that there is a high level of response to the influence of different learning models on learning outcomes and motivation. The results indicate that different learning models have a significant impact on students' motivation and learning outcomes, with significance levels of 0.096 > 0.05 and 0.156 > 0.05. Therefore, the premise that different learning models have an impact on class VIII students' motivation and learning outcomes at SMP Negeri 2 Beringin One Roof is accepted.

Teachers' efforts to have a positive influence on students, according to previous research it is urgent to do this, especially with regard to aspects of learning motivation, including both intrinsic and extrinsic aspects for students (Crisnawati et al., 2022; Mujiono, 2020). Furthermore, similar research call it a stimulus for students, because there are some students who have high enthusiasm for learning intrinsically (innate), but there are also those who need a stimulus to be enthusiastic about learning (Mikeska et al., 2023; Mutch-Jones et al., 2022). The teacher's example and varied teaching at each meeting will create a fun and meaningful learning atmosphere for students. This means that students do not get bored and discover new things in each learning process. Secondly, the impact of diverse learning models on the motivation to learn. Researchers found that different learning models have a substantial impact on students' learning motivation. This influence was measured at the 0.096 significant level. This number suggests that there is a strong correlation between different learning methods and motivation. In this case, the significance level is 0.096 > 0.05, indicating a substantial impact of different learning models on student motivation. The idea that different learning methods have an impact on class VIII students' learning motivation at SMP Negeri 2 Beringin One Roof is thus accepted. Addressing the importance of contextuality in learning, previous research offers the concept of varied learning as an effort to create a different learning atmosphere in each meeting (Pentury et al., 2021; Zhang et al., 2023). This inspires students' enthusiasm in following the teaching material. Teaching variations can be indicated by a variety of methods, strategies and learning approaches. In fact, previous research added that learning variants can also be complemented by implementing interactive learning quizzes that students are interested in, as well as starting learning using ice breakers (Salim et al., 2020; Sugito, 2021). A varied learning process will increase students' enthusiasm for learning. This enthusiasm or motivation to learn will be the basis for improving student learning outcomes. Similar research state that one consequence of the diversified learning approach will be ease of obtaining learning (Reeves et al., 2021; Samuels & Onuoha-Jackson, 2023). Because they will be more engaged with the teacher's delivery and more motivated to learn. Using diversified learning will also result in an increase in the form of gezagh, or teacher authority. Additionally, according to previous research different learning models offer instructional content in "attractive packaging" that is tailored to the curriculum, the educational background of the students, and the knowledge of the local community (Sujani & Munastiwi, 2022; Vakil & Heled, 2016).

It is essentially possible to draw the conclusion from the previous explanation that student learning motivation is influenced by the presentation of diverse instructional materials. This is

unquestionably crucial to the learning process, particularly for SMP/MTs in the foundational education level. Given that kids at this age are about to enter the transitional phase from childhood to adolescent, it is acceptable to offer engaging instructional resources that spark students' interest in learning and help them develop into successful, creative, and inventive individuals. The impact of different learning models on learning outcomes comes in third. Researchers' analysis of the impact of different learning models on student learning outcomes yielded a significant level value of 0.156. This number suggests that there is a high level of influence from different learning models on learning outcomes. In this case, the significance level is $0.156 > 0.05$, indicating a substantial impact of different learning models on student learning outcomes. Therefore, the hypothesis that different learning models have an impact on the learning outcomes of class VIII students at SMP Negeri 2 Beringin One Roof is accepted.

Based on the results of similar research, the concept was found that varied learning is the basis for increasing students' self-confidence (Pelangi, 2018; Wardoyo et al., 2020). This is achieved through the teacher's readiness to teach and the readiness to receive learning from students. Furthermore, previous research stated that this interaction is really needed before the learning process begins (Suluwetang, 2021; Wulandari & Hendriani, 2021). Teachers must instill awareness of the importance of the sharing process in learning through varied learning at each meeting. For example, students are asked to complete written tests and sudden oral tests to test students' ability to receive learning. Relevant to the research above, other research presented research results with the conclusion that varied learning practices give rise to students' perceptions of guessing what kind of material presentation the teacher will provide (Hati, 2021; Masruroh & Achmad, 2019). Then, this is followed by preparing yourself before studying in class, for example finding out the material that will be discussed at a particular meeting so that you are ready when asked verbally by the teacher in the apperception process (preliminary learning). Regarding the readiness aspect, in their research concluded that varied learning stimulates students to learn with full awareness (the importance of education) and independently, and will also create a culture of learning before entering class or reading books before the teacher explains the material (Aprilia et al., 2020; Rahmawati et al., 2019). With this kind of habit, it will affect student learning outcomes.

The research of similar results refine the previous view, that varied learning models also indicate the quality of teachers from an aspect of pedagogical competence (Raito & Sarita, 2022; Wardoyo et al., 2020). Because, teachers not only know active learning theories, but also practice them during the learning process, coupled with the application of creative learning styles which certainly adds to the teacher's *gezhag* or authority. As a result, other research explained that the varied learning applied by teachers had a significant effect on student learning outcomes (Evita et al., 2019; Sinelnikov et al., 2016). Typically, varied learning uses various active learning methods, creative media and is appropriate to the age level of students. Dialogue and discussion of theoretical opinions and previous researchers' findings further emphasize the novelty of this research, especially from methodological aspects, learning models, research variables, research settings. In the methodological aspect, this research reveals factual and measurable data through a quantitative approach which is proven by numbers, that a significant level of $0.096 > 0.05$ and $0.156 > 0.05$ is obtained, meaning that varied learning models have a significant influence on students' motivation and learning outcomes. A varied learning model was used as a research variable, as well as selecting SMPN 2 Beringin Satu Roof as a research location which had never previously raised a similar research theme or variable.

4. CONCLUSION

The description provided above leads one to the conclusion that different learning methods have an impact on class VIII students at SMPN 2 Beringin One Roof's motivation and learning outcomes in PAI topics. It is established that the two-tailed Sig values, 0.096 and 0.156, are more than 0.05. After using a variety of learning approaches, students' motivation and learning outcomes are therefore better than they were before. This demonstrates how junior high school students' motivation and learning outcomes can be raised through the sensible and efficient use of diversified learning. In addition, this serves as proof of the instructor's pedagogical competency or quality in the classroom. Through the results of this research, it is hoped that it can become a reference for teachers in their efforts to implement varied learning, both in terms of content, strategies, methods and teaching approaches to students.

5. REFERENCES

- Akbar, A. (2021). Pentingnya Kompetensi Pedagogik Guru. *JPG: Jurnal Pendidikan Guru*, 2(1), 23–30. <https://doi.org/10.32832/jpg.v2i1.4099>.

- Alghamdi, A. K., & Al-Ghamdi, N. A. (2021). Elementary Teachers' Thoughts about Distance Education and Learning 21st-Century Skills during COVID Pandemic. *International Journal of Learning, Teaching and Educational Research*, 20(3), 33–50. <https://doi.org/10.26803/ijlter.20.3.3>.
- Aminah, N. (2014). Analisis kemampuan pedagogik dan self confidence calon guru matematika dalam menghadapi praktek pengalaman lapangan. *Euclid*, 1(1), 55–59. <https://doi.org/10.33603/e.v1i1.344>.
- Anggoro, S., Harmianto, S., & Yuwono, P. D. (2018). Upaya Meningkatkan Kemampuan Pedagogik Guru Melalui Pelatihan Pembelajaran Tematik Sains Menggunakan Inquiry Learning Process dan Science Activity Based Daily Life. *JPPM (Jurnal Pengabdian Dan Pemberdayaan Masyarakat)*, 2(1), 29–35. <https://doi.org/10.30595/jppm.v2i1.1844>.
- Aprilia, I., Nelson, N., Rahmaningsih, S., & Warsah, I. (2020). Implementasi Metode Pembelajaran Bervariasi pada Materi SKI di Madrasah Ibtidaiyyah. *Jurnal Ilmiah PGMI*, 6(1), 52–72. <https://doi.org/10.19109/jip.v6i1.6026>.
- Assingkily, M. S. (2021). *Metode Penelitian Pendidikan: Panduan Menulis Artikel Ilmiah dan Tugas Akhir*.
- Badruzaman, A., Nurdin, S., & Aprilia, S. (2015). Pengaruh Penggunaan Media Visual Terhadap Hasil Belajar Siswa Pada Materi Peta. *Pedagogika: Jurnal Ilmiah Pendidikan Guru Sekolah Dasar*, 2(1), 118–128. <https://doi.org/10.17509/pedagogika.v2i1.5794>.
- Beard, J., & Mathias, K. (2021). Can Learning be Enhanced with Active Seating? *Heliyon*, 7(9). <https://doi.org/10.1016/j.heliyon.2021.e08084>.
- Crisnawati, E., Hermansyah, A. K., & Purwanti, R. (2022). Kemampuan Kompetensi Pedagogik Guru Sekolah Dasar dalam Proses Pembelajaran. *Jurnal Bidang Pendidikan Dasar*, 6(1), 56–64. <https://doi.org/10.21067/jbpd.v6i1.6201>.
- Destiniar, D., Mulbasari, A. S., Fuadiah, N. F., Octaria, D., Ningsih, Y. L., Retta, A. M., & Isroqmi, A. (2020). Pelatihan Penyusunan Soal HOTS untuk Mengembangkan Kemampuan Pedagogik Guru. *J-Abdipamas (Jurnal Pengabdian Kepada Masyarakat)*, 4(1), 163–170. <https://doi.org/10.30734/j-abdipamas.v4i1.585>.
- Dirgantara, I. M., Parwata, I. G. L. A., & Swadesi, I. K. I. (2024). Problem Based Learning and Direct Learning Models Influence Learning Outcomes on Basic Soft Ball Game Techniques in View of Critical Thinking Ability. *Jurnal Ilmiah Pendidikan Dan Pembelajaran*, 8(1), 177–186. <https://doi.org/10.23887/jipp.v8i1.69334>.
- Enright, E. A., Toledo, W., Drum, S., & Brown, S. (2022). Collaborative Elementary Civics Curriculum Development to Support Teacher Learning to Enact Culturally Sustaining Practices. *The Journal of Social Studies Research*, 46(1), 69–83. <https://doi.org/10.1016/j.jssr.2021.11.007>.
- Evita, E., Syahid, A., & Nurdin, N. (2019). Understanding Students' Learning Outcomes Differences Through the Application of the Market Place Activity Type of Cooperative Learning Model and the Application of Conventional Learning Models. *International Journal of Contemporary Islamic Education*, 1(1), 67–85. <https://doi.org/10.24239/ijcied.Vol1.Iss1.5>.
- Hardiyati, M., Isnaini, F., Apriani, W., Hasanahti, M., & Hasibuan, P. H. (2022). Strategi Meningkatkan Kinerja Guru yang Profesional. *Cendekiawan: Jurnal Pendidikan Dan Studi Keislaman*, 1(1), 19–25. <https://doi.org/10.61253/cendekiawan.v1i1.12>.
- Hati, S. T. (2021). Social Studies Education Responding to the Challenges of the 21st Century: A Critique of Learning Practices in Elementary Education. *Jurnal Basicedu*, 5(6), 5573–5582. <https://doi.org/10.31004/basicedu.v5i6.1718>.
- Jailani, M. S. (2023). Teknik Pengumpulan Data dan Instrumen Penelitian Ilmiah Pendidikan pada Pendekatan Kualitatif dan Kuantitatif. *IHSAN: Jurnal Pendidikan Islam*, 1(2), 1–9. <https://doi.org/10.61104/ihsan.v1i2.57>.
- Kalinec-Craig, C., & Rios, A. (2024). An Exploratory Mixed Methods Study about Teacher Candidates' Descriptions of Children's Confusion, Productive Struggle, and Mistakes in an Elementary Mathematics Methods Course. *The Journal of Mathematical Behavior*, 73. <https://doi.org/10.1016/j.jmathb.2023.101103>.
- Khusna, R., & Priyanti, N. (2023). Pengaruh Komunitas Belajar Terhadap Kemampuan Pedagogik Guru Di Ikatan NSIN TK Bekasi. *Jurnal Ilmiah Potensia*, 8(2), 252–260. <https://doi.org/10.33369/jip.8.2.252-260>.
- Lee, M., Lee, S. Y., Kim, J. E., & Lee, H. J. (2023). Domain-Specific Self-Regulated Learning Interventions for Elementary School Students. *Learning and Instruction*, 88. <https://doi.org/10.1016/j.learninstruc.2023.101810>.
- Li, H., Zhang, A., Zhang, M., Huang, B., Zhao, X., Gao, J., & Si, J. (2021). Concurrent and Longitudinal Associations between Parental Educational Involvement, Teacher Support, and Math Anxiety: The

- Role of Math Learning Involvement in Elementary School Children. *Contemporary Educational Psychology*, 66. <https://doi.org/10.1016/j.cedpsych.2021.101984>.
- Lubis, F. G., Putri, A. D., & Irvan, R. A. (2022). Guru Profesional Sebagai Komunikator dan Fasilitator Pembelajaran Bagi Siswa. *Cendekiawan: Jurnal Pendidikan Dan Studi Keislaman*, 1(1), 34–38. <https://doi.org/10.61253/cendekiawan.v1i1.25>.
- Masruroh, L., & Achmad, W. (2019). Pengaruh Penerapan Metode Bervariasi Terhadap Peningkatan Prestasi Belajar Siswa pada Mata Pelajaran Al-Qur'an Hadits. *JIE (Journal of Islamic Education)*, 4(2), 179–189. <https://doi.org/http://www.ejournal.stitmuhbangil.ac.id/index.php/jie/article/view/148>.
- Mikeska, J. N., Howell, H., & D, K. (2023). Inside the Black Box: How Elementary Teacher Educators Support Preservice Teachers in Preparing for and Learning from Online Simulated Teaching Experiences. *Teaching and Teacher Education*, 122. <https://doi.org/10.1016/j.tate.2022.103979>.
- Mujiono, H. (2020). Supervisi Akademik Meningkatkan Kompetensi Pedagogik Guru. *JDM (Jurnal Dinamika Manajemen Pendidikan)*, 4(2), 113–121. <https://doi.org/10.26740/jdmp.v4n2.p113-121>
- Mutch-Jones, K., Hicks, J., & Sorge, B. (2022). Elementary Science Professional Development to Impact Learning Across the Curriculum. *Teaching and Teacher Education*, 112. <https://doi.org/10.1016/j.tate.2021.103625>.
- Nurhalimah, N., Baisa, H., & Asmahasanah, S. (2020). Pengaruh Kompetensi Pedagogik Guru Terhadap Motivasi Belajar Siswa di MI l'anatusshibyan. *JPG: Jurnal Pendidikan Guru*, 1(1), 29–41. <https://doi.org/10.32832/jpg.v1i1.2865>.
- Pelangi, H. (2018). Metode Mengajar Bervariasi Dan Upaya Pengembangannya Dalam Meningkatkan Hasil Belajar Pada Bidang Studi Pendidikan Agama Islam Di SMA Muhammadiyah 11 Padangsidempuan. *Al-Muaddib: Jurnal Ilmu-Ilmu Sosial Dan Keislaman*, 3(1). <https://doi.org/10.31604/muaddib.v1i1.368>.
- Pentury, H. J., Rangka, I. B., & Anggraeni, A. D. (2021). Peningkatan Kemampuan Pedagogik Guru dalam Pembelajaran Daring Melalui Penerapan Kuis Interaktif Daring. *Jurnal Surya Masyarakat*, 3(2), 109–114. <https://doi.org/10.26714/jsm.3.2.2021.109-114>.
- Rahmawati, Y., Baeti, H. R., Ridwan, A., Suhartono, S., & Rafiuddin, R. (2019). A culturally responsive teaching approach and ethnochemistry integration of Tegal culture for developing chemistry students' critical thinking skills in acid-based learning. *Journal of Physics: Conference Series*, 1402(5), 055050. <https://doi.org/10.1088/1742-6596/1402/5/055050>.
- Raito, R., & Sarita, D. (2022). Pengaruh Penggunaan Metode Mengajar Bervariasi Terhadap Prestasi Belajar Siswa dalam Mata Pelajaran PAI di SMK Ciledug Al-Musaddadiyah Garut. *Masagi*, 1(1), 276–284. <https://doi.org/https://journal.stai-musaddadiyah.ac.id/index.php/jm/article/view/311>.
- Reeves, S. M., Crippen, K. J., & McCray, E. D. (2021). The Varied Experience of Undergraduate Students Learning Chemistry in Virtual Reality Laboratories. *Computers & Education*, 175. <https://doi.org/10.1016/j.compedu.2021.104320>.
- Rios, G. N., Mendoza, K. G., Fabian, H. M., Realis, K., & Pertuz, D. D. C. O. (2024). Methodological Strategies and Techniques Implemented by Teachers in the Teaching-Learning Process of English in Spanish-Speaking Students. *Procedia Computer Science*, 231, 508–513. <https://doi.org/10.1016/j.procs.2023.12.242>.
- Salim, S., Jamiludin, J., Darnawati, D., Abubakar, S. R., Nurhayati, N., & Irawaty, I. (2020). Pelatihan Pengembangan Desain Instruksional untuk Meningkatkan Kemampuan Pedagogik Guru PAUD. *JPKMI (Jurnal Pengabdian Kepada Masyarakat Indonesia)*, 1(2), 95–105. <https://doi.org/10.36596/jpkmi.v1i2.34>.
- Samuels, W. E., & Onuoha-Jackson, N. (2023). Learning to Care: An in-School Humane Education Program Improves Affective and Cognitive Empathy among Lower-Elementary Students. *International Journal of Educational Research Open*, 5. <https://doi.org/10.1016/j.ijedro.2023.100292>.
- Santos-Meneses, L. F., & Drugova, E. A. (2023). Trends in Critical Thinking Instruction in 21st – Century Research and Practice: Upgrading Instruction in Digital Environments. *Thinking Skills and Creativity*, 49. <https://doi.org/10.1016/j.tsc.2023.101383>.
- Setyosari, H. P. (2016). *Metode penelitian pendidikan & pengembangan*. Prenada Media.
- Siegle, D., Rubenstein, L. D., & Mitchell, M. S. (2014). Honors students' perceptions of their high school experiences: The influence of teachers on student motivation. *Gifted Child Quarterly*, 58(1), 35–50. <https://doi.org/10.1177/0016986213513496>.
- Sinakou, E., Donche, V., & Petegem, P. V. (2022). Action-Oriented in Education for Sustainable Development: Teachers' Interest and Instructional Practices. *Journal of Cleaner Production*, 370. <https://doi.org/10.1016/j.jclepro.2022.133469>.

- Sinelnikov, O. A., Kim, I., Ward, P., Curtner-Smith, M., & Li, W. (2016). Changing beginning teachers' content knowledge and its effects on student learning. *Physical Education and Sport Pedagogy*, 21(4), 425–440. <https://doi.org/10.1080/17408989.2015.1043255>.
- Sugito, S. (2021). Pengenalan Ice Breaking dalam Meningkatkan Semangat Belajar Siswa. *Jurnal Bahasa Indonesia Prima (BIP)*, 3(2), 145–150. <https://doi.org/10.34012/bip.v3i2.1717>.
- Sujani, E. H., & Munastiwi, E. (2022). Manajemen Tadrib Asatidz dalam Mengembangkan Kemampuan Pedagogik Guru. *Jurnal ISEMA: Islamic Educational Management*, 7(1), 63–74. <https://doi.org/10.15575/isema.v7i1.16229>.
- Suluwetang, M. (2021). Peningkatan Hasil Belajar Pendidikan Agama Islam Materi Ajar Makanan dan Minuman Halal dan Haram Melalui Metode Pembelajaran Ceramah Bervariasi (Tanya Jawab, Diskusi, Penugasan) di Kelas VIII UPTD SMP Negeri Ilawe. *Jurnal Ilmu Pendidikan (JIP)*, 6(1). <https://doi.org/10.59098/jipend.v6i1.514>.
- Vakil, E., & Heled, E. (2016). The effect of constant versus varied training on transfer in a cognitive skill learning task: The case of the Tower of Hanoi Puzzle. *Learning and Individual Differences*, 47, 207–214. <https://doi.org/10.1016/j.lindif.2016.02.009>.
- Viesca, K. M., Teemant, A., Alisaari, J., Ennsner-Kananen, J., Flynn, N., Hammer, S., Perumal, R., & Routarinne, S. (2022). Quality Content Teaching for Multilingual Students: An International Examination of Excellence in Instructional Practices in Four Countries. *Teaching and Teacher Education*, 113. <https://doi.org/10.1016/j.tate.2022.103649>.
- Wardoyo, C., Satrio, Y. D., & Ratnasari, D. A. (2020). An analysis of teachers' pedagogical and professional competencies in the 2013 Curriculum with the 2017-2018 revision in Accounting subject. *REiD (Research and Evaluation in Education)*, 6(2), 142–149. <https://doi.org/10.21831/reid.v6i2.35207>.
- Wulandari, R. S., & Hendriani, W. (2021). Kompetensi pedagogik guru sekolah inklusi di Indonesia (Suatu pendekatan systematic review). *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran, Dan Pembelajaran*, 7(1), 143–157. <https://doi.org/10.33394/jk.v7i1.3152>.
- Zhang, Y., Wang, Y., Xia, Y., & Chen, W. (2023). A Deep Learning Approach to Estimate the State of Health of Lithium-Ion Batteries under Varied and Incomplete Working Conditions. *Journal of Energy Storage*, 58. <https://doi.org/10.1016/j.est.2022.106323>.