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The Think-Pair-Share Model on Correlation Analysis: An Analysis of Student Learning Outcomes Improvement

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ABSTRACT: *This study aims to analyze the effectiveness of the Think Pair Share (TPS) learning model in improving student learning outcomes and participation. The method used is quantitative research with a pretest-posttest design. The research subjects consisted of students who participated in learning with the TPS model, while the instruments used included learning outcome tests and student activity observation sheets. The results of the study showed that the application of the TPS model was able to significantly improve student learning outcomes, which was shown by the increase in average scores and the acquisition of N-Gain in the medium to high category. In addition, student participation in the learning process has also increased, especially in discussion and opinion delivery activities. However, there is a variation in improved learning outcomes between students, which shows that not all students experience an equal improvement. The conclusion of this study is that the Think Pair Share learning model is effective in improving student learning outcomes and participation, and can be used as an alternative innovative learning strategy to create more active and collaborative learning.*

Keywords: *Cooperative, Student Learning Outcomes, Student Participation, Think of it as a pair.*

I. INTRODUCTION

Mathematics holds a central position in education as a discipline that fosters the ability to think logically, analytically, and critically. However, the quality of mathematics learning at the junior and senior high school levels in

Indonesia is still a serious concern. Based on the results of the Programme for International Student Assessment (PISA) 2022, Indonesia ranks 70th out of 81 countries with an average score of 366, far below the OECD average of 472 [1]. In addition, almost none of the students reach Level 5 or 6, which demands a high level of reasoning and data interpretation skills [1].

These weaknesses are related to learning on the topic of correlation analysis, which essentially requires the ability to interpret relationships between variables and competency data-based reasoning that is also the focus of PISA assessments, especially in the domain of uncertainty and data [1]. However, correlation learning in schools often focuses on the procedure of calculating coefficients without understanding the meaning of the relationship. As a result, students have difficulty interpreting the direction and power of correlation and relating it to context [2].

Some studies on school students also show that the main difficulty lies in understanding concepts rather than calculations. For example, students often mistakenly interpret correlations as causal relationships or are unable to read the relationship patterns of scatter plots [3]. To overcome this, learning that involves active interaction such as the cooperative model has proven to be more effective. Research by shows that cooperative learning in students can improve critical thinking skills and data interpretation, which is important in understanding the concept of correlation. Thus, the low achievement of PISA can be attributed to the lack of optimal learning in materials such as correlation analysis which is still procedurally oriented, so that students have not developed in their ability to reason and interpret data in depth [4].

A teacher-centered approach to teaching and prioritizing procedural steps over conceptual understanding has long been recognized as a major contributor to low math achievement among students. When classroom teaching does not actively engage students in the learning process, their ability to build genuine conceptual understanding becomes severely constrained. Students who remain passive in the classroom tend to miss out on the opportunity to form meaningful connections between abstract mathematical ideas and practical applications, which in turn results in surface-level learning and reduced enthusiasm for learning ([5];[6];[7]).

In response to these challenges, cooperative learning models have gained increasing attention as a more student-centered alternative. Among them, the Think-Pair-Share (TPS) model is a well-structured cooperative strategy in which students are first given time to think individually about a problem, then pair up with classmates to discuss their thoughts, and finally share their ideas with the rest of the class. This sequential three-phase process is designed to encourage deeper cognitive processing, encourage peer-to-peer dialogue, and develop students' ability to communicate mathematical thoughts, as documented by [8]. Empirically, TPS has been shown to increase the frequency and depth of student participation relative to conventional teacher-led question and answer patterns [8]. It was also found that mathematics learning activities at the secondary level increased after the implementation of TPS[9].

Although research on the effectiveness of the Think-Pair-Share (TPS) cooperative learning model has developed widely in mathematics education, studies that specifically examine its application to correlation analysis materials at the high school level are still limited, as shown by recent studies that focus more on improving general skills such as problem-solving and mathematical communication than on the context of specific statistical material. Previous research has shown that learning statistics at the school level is still relatively less attention than other topics such as algebra and arithmetic, especially in the development of students' conceptual understanding ([10];[2]).

More specifically, various studies in high school students show that correlation material is still a difficult topic to understand, especially in interpreting the strength and direction of relationships between variables. Students also often experience misconceptions, such as thinking of correlations as cause-and-effect relationships as well as difficulty reading patterns on scatter diagrams ([11]; [12]). These findings show that learning still tends to be procedurally oriented and has not been optimal in developing students' statistical reasoning [13].

This condition is in line with the results of PISA 2022 which shows that the main weakness of students lies in the ability to interpret data and reasoning in the context of uncertainty. Thus, students' difficulties in understanding the concept of correlation can be seen as a concrete representation of the low mathematical

literacy measured in PISA [1]. However, until now there have been very few studies that have empirically tested the effectiveness of cooperative learning models such as TPS specifically on correlation analysis materials at the secondary school level ([14];[15]).

Based on this description, this research is important to be carried out because there is still a gap between the demands of reasoning and data interpretation skills as measured in PISA and learning practices in the classroom that tend to be procedural, especially in correlation analysis materials. In addition, the limitations of research that specifically examined the effectiveness of the Think-Pair-Share (TPS) model on correlation topics at the secondary school level indicate the need for more contextual empirical evidence. Therefore, this research is expected to contribute to optimizing more meaningful statistical learning and improving student learning outcomes through a cooperative approach that encourages active engagement and conceptual understanding.

II. METHOD

This study adopts a quantitative methodology and is categorized as a pre-experimental study. The research design applied was One Group Pretest-Posttest Design where only one group of participants was observed without the inclusion of a comparison group [16]. Based on this design, all students completed a pretest before instructional treatment and a posttest afterward, allowing researchers to measure changes in learning outcomes. The notation for this design is as follows.

$$O_1 - X - O_2$$

Description:

O1 : Pretest

X : implementation of the TPS model in the Correlation Analysis material

O1 : Posttest

However, this design has methodological limitations that need to be considered. According to the pre-experimental design, neither the control group nor randomization involved, so the level of control over the external variables was relatively low and implicated in weak internal validity. This condition causes changes in learning outcomes that cannot be fully attributed to the treatment given, but have the potential to be influenced by other factors outside of the treatment [17]. Theoretically, this design is also vulnerable to various internal

validity threats such as history, maturation, testing effect, and regression to the mean. Therefore, the interpretation of the results of the study should be done carefully and not directly concluded as a strong causal relationship.

The research participants consisted of 35 students in class XI-2 at SMAN 4 Jember. This class was selected through purposive sampling techniques, which are sample determination techniques based on certain considerations relevant to the research objectives. The selection of classes is based on several reasons, including, (1) the class has reached the curriculum stage that contains Correlation Analysis material so that it is in accordance with the needs of the research, (2) the characteristics of homogeneous and representative students to observe the application of the Think Pair Share cooperative learning model (TPS), and (3) ease of access to researchers because the research is carried out at the location of the teaching assistant, so that data collection can be carried out optimally and controlled [17].

This purposive sample selection is in line with the opinion that purposive sampling is carried out by selecting individuals or research locations that are considered the most capable of providing relevant information to the research problem [17]. In addition, this technique allows researchers to obtain samples that have special characteristics in accordance with the research objectives, so that the data obtained becomes more meaningful and in accordance with the needs of the analysis [16].

The research process is carried out in three stages. The preparation stage includes curriculum analysis of Correlation Analysis material, preparation of lesson plans based on the Think Pair Share model, and instrument validation. The implementation stage began with a pretest, then continued with four learning meetings (2 × 45 minutes each). The first meeting discussed the basic concept of correlation and its types, the second meeting on the calculation of correlation coefficients, the third meeting on the interpretation of correlation results and the fourth meeting focused on solving contextual problems. The Think Pair Share (TPS) model at each meeting is systematically applied through three main stages. In the think stage, which lasts about 5 to 10 minutes, students first work on individual correlation problems to build initial understanding. Next, in the pair

stage for 10 to 15 minutes, students discuss with their partners to compare, correct, and refine their answers.

The last stage is a share that lasts for 15 to 20 minutes, where the student pairs present the results of their discussion in front of the class, then continue with clarification and reinforcement of concepts together. This stage is in line with the characteristics of TPS which emphasizes individual thinking, discussion in pairs, and classically sharing results. After all sessions are over, a posttest is carried out with a level of difficulty equivalent to the pretest. The final stage includes data analysis and reporting of research results.

The assessment instrument used in this study is in the form of an essay test developed based on competency indicators in correlation analysis materials. Items include the ability to understand the concept of correlation, read and interpret scatter plots, calculate Pearson correlation coefficients, and draw conclusions about the strength and direction of relationships. Pretest and posttest questions are designed with an equal level of difficulty. The validity of the instrument is carried out by the teacher of mathematics subject and has been declared valid in terms of content (content validity).

The results of the analysis showed that Cronbach's Alpha value was -0.244. The negative value is caused because the data analyzed is a pretest and posttest score which conceptually are not items in the same construct, but two different measurement times. Therefore, internal reliability tests such as Cronbach's Alpha are not appropriately used. Therefore, the analysis focused on comparing learning outcomes through the gain test and the difference test using the non-parametric Wilcoxon Signed-Rank Test to compare two paired data when the assumption of normality was not met

Data analysis was carried out quantitatively through four stages. First, descriptive statistics that include mean values, standard deviations, minimums, maximums, ranges, amounts, and variances are calculated for pretest and posttest scores. Second, the normality test was performed using Shapiro–Wilk because the sample count was less than 50 (N = 35). Third, hypothesis testing was carried out using the Wilcoxon Signed-Rank Test through IBM SPSS Statistics 25 as a non-parametric alternative to the paired sample t-test for paired data because the data was not normally distributed ($p < 0.05$), In addition, to determine the magnitude

of the effect of the treatment, the effect size was calculated with the formula , where Z was obtained from the output SPSS and N are the sum of the samples. The use of effect measures is important because it not only shows statistical significance, but also provides information regarding the magnitude and practical significance of the effect of the treatment (Jackie, 1998). The r-value is interpreted as a small (≥ 0.10), medium (≥ 0.30), and large (≥ 0.50) effects. Fourth, the improvement in learning outcomes was analyzed using an N-Gain score based on the formula, namely with the categories of high ($g \geq 0.7$), medium ($0.3 \leq g < 0.7$), and low ($g < 0.3$). All analyses were conducted using IBM SPSS Statistics version 25.e.

III. RESULT AND DISCUSSION

This section presents the analysis of pretest and posttest score data from 35 students in grade XI-2, which were collected before and after the Think-Pair-Share (TPS) cooperative learning model was applied to the Correlation Analysis material. Data were examined through four analysis procedures: descriptive statistics, normality testing using Shapiro-Wilk, Wilcoxon-marked rating test, and N-Gain score calculation.

Descriptive Statistics

Descriptive statistical analysis was carried out to provide an overview of the distribution of pretest and posttest scores. The results are presented in Table 1.

Table 1. Descriptive Statistics of Pretest and Posttest Scores

	N	Range	Minutes	Max	Quantity	Means	Std. Dev.	Variance
Prates	35	42.00	0	42.00	569	16.2571	9.13411	83.432
Post-tests	35	60.00	40.00	100.00	3053	87.2286	13.20001	174.240

Based on Table 1, the number of research subjects is 35 students. Descriptively, the average pretest score was 16.2571 with a minimum value of 0 and a maximum of 42, and a standard deviation of 9.13411. This shows that students' initial abilities are still relatively low and the data dissemination is quite varied. After being given treatment, the average posttest score increased significantly to 87.2286 with a minimum score of 40 and a maximum of 100, as

well as a standard deviation of 13.20001. This increase in average scores indicates a considerable change in ability after learning.

In addition, the range of scores also increased from 42 in the pretest to 60 in the posttest, which indicates that the variation in student learning outcomes after the treatment became wider. Overall, the comparison between pretest and posttest scores shows a fairly high increase in student learning outcomes. Descriptively, this analysis only describes the condition of the data before and after treatment without drawing inferences, but can be an early indication of the influence of learning on improving student learning outcomes

Normality Test

Before the hypothesis test is carried out, a prerequisite test is first carried out in the form of a normality test on pretest and posttest data. This normality test used the Shapiro–Wilk method because the sample count was less than 50 ($n \leq 50$). The Shapiro–Wilk test aims to test whether the data is normally distributed with the zero (H_0) hypothesis stating that the data is normally distributed. The decision-making criterion is that if the significance value (Sig.) > 0.05, then the data is distributed normally, while if Sig. ≤ 0.05, the data is not distributed normally.

Table 2. Shapiro-Wilk Normality Test Results

	Statistics (W)	df	Sig.
Prates	0.920	35	0.014
Post-tests	0.825	35	0.000

Based on Table 2, the significance value for the pretest was 0.014 with a statistical value of W = 0.920, and for the posttest of 0.000 with a statistical value of W = 0.825. Both significance values are less than 0.05 (Sig. < 0.05). This shows that H_0 is rejected, so it can be concluded that both the pretest and posttest data are not normally distributed. Thus, the assumption of normality in the analysis is not met. Because the data do not meet the assumption of normality, the advanced analysis cannot use parametric tests. Therefore, an alternative to non-parametric tests, namely the Wilcoxon test, is used, which is more suitable for data that is not normally distributed.

Wilcoxon Signed-Rank Test

After it was found that the pretest and posttest data were not normally distributed, the hypothesis test was carried out using a non-parametric test, namely the Wilcoxon Signed-Rank Test. This test is used to find out if there is a significant difference between the two paired data, especially in pre- and post-treatment conditions. The zero hypothesis (H_0) in this study states that there is no significant difference between the pretest and posttest results, while the alternative hypothesis (H_1) states that there is a significant difference between the two. The decision-making criterion is that if the significance value (Asymp. Sig. 2-tailed) ≤ 0.05, then H_0 is rejected.

Table 3. Wilcoxon Signed-Rank Test Results

	Test Statistics (W)	Asimpa. Sig. (2 tails)
Posttest – Pretest	0.000	0.000

Based on Table 3, the Asymp. Sig. (2-tailed) value of 0.000 is obtained, which is smaller than 0.05 (0.000 < 0.05). Thus, H_0 is rejected and H_1 is accepted. This shows that there is a significant difference between pretest and posttest scores. A test statistical value (W) of 0.000 indicates that the differences between the data pairs tend to be consistent in one direction, thus reinforcing the changes that occur after the treatment. Conceptually, the test tests whether the median difference between two conditions is equal to Wilcoxon zero; When the significance value is below 0.05, it can be concluded that there is a noticeable change between the two conditions. Thus, the results of the analysis show that the treatment provided has a significant influence on improving student learning outcomes.

N-Gain Score Analysis

Analysis using normalized gain (N-Gain). N-Gain is used to measure the magnitude of the score increase from pretest to posttest taking into account the maximum score that can be achieved. The interpretation of the N-Gain value refers to the Hake criteria, namely: g values ≥ 0.7 belong to the high category, 0.3 ≤ g < 0.7 to the medium category, and g < 0.3 to the low category. The results of the N-Gain analysis are descriptively presented in Table 4 and the categorical distribution in Table 5.

Table 4. Descriptive Statistics of N-Gain Score

	N	Minimum	Maximum	Means	Std. Dev.
N-Gain Score	35	0.3182	1.0000	0.8429	0.16201

Based on Table 4, the average value (mean) of N-Gain is 0.8429, with a minimum value of 0.3182 and a maximum of 1.0000, as well as a standard deviation of 0.16201. The average N-Gain value of 0.8429 was in the high category ($g \geq 0.7$). This shows that in general there is a high increase in student learning outcomes after being given treatment. In addition, a minimum score that is still above 0.3 indicates that all students have experienced minimal improvement in the medium category, even most of them reach the high category.

Table 5. Distribution of Students by N-Gain Category

Categories	Criteria	Number of Students	Percentage (%)
Height	g 0.7≥	29	82.9%
Medium	0.3 < g 0.7≤	6	17.1%
Low	g < 0.3	0	0%
Quantity		35	100%

Based on Table 5, the distribution of students by N-Gain category shows that most students are in the high category. Of the total 35 students, 29 students (82.9%) obtained an N-Gain score in the high category, while 6 students (17.1%) were in the medium category, and there were no students in the low category. This category refers to the N-Gain classification according to which the value of $g \geq 0.7$ belongs to the high category, $0.3 \leq g < 0.7$ medium category, and $g < 0.3$ to the low category.

The distribution shows that the improvement in student learning outcomes is dominated by the high category, so it can be indicated that the learning applied is able to provide optimal improvement for most students. In addition, the absence of students in the low category corroborated that all students experienced improved ability after treatment, albeit with different levels of improvement. Overall, these results show that the learning interventions provided have high effectiveness in improving student learning outcomes.

Discussion

The results of this study show that the application of the Think-Pair-Share (TPS) cooperative learning model provides a considerable improvement in student learning outcomes in the Correlation Analysis material. This is shown by the jump in the average score from 16.26 in the pretest to 87.23 in the posttest, as well as the average N-Gain value of 0.8429 in the high category. However,

considering that the research design used is pre-experimental, these findings are more appropriately seen as preliminary evidence that supports the effectiveness of TPS in this learning context, so further research with a stronger experimental design is still needed to generalize the results.

These findings are in line with research showing that TPS is able to increase student participation through paired interactions that encourage active engagement in learning [8]. In addition, the implementation of TPS has also been proven to significantly improve student learning outcomes and activities through a structured and collaborative discussion process [18]**.** Other support also shows that the TPS model contributes positively to improving students' thinking abilities and learning outcomes in various learning context [9]. Thus, the results of this study strengthen the previous finding that TPS is a potential learning model in improving the quality of mathematics learning.

The effectiveness of the TPS model can be understood through several theoretical and pedagogical lenses. First of all, the Thinking phase stimulates the student's individual metacognitive process by requiring each student to independently utilize their prior knowledge and establish an initial understanding of the problem before peer interaction occurs [19]. When applied to Correlation Analysis, this stage of individual thinking is particularly beneficial because it encourages students to reflect on the nature of their own variable relationships before opening a discussion. Such active cognitive engagement is in stark contrast to the passive acceptance of the content delivered by teachers, which is widely considered a significant barrier to genuine conceptual understanding in mathematics [20].

In addition, the Pair phase in the TPS model provides a collaborative space for students to express and discuss mathematical reasoning with peers. Research shows that student involvement in explaining ideas as well as responding to other people's thoughts is positively correlated with improved learning outcomes [21]. This is in line with the findings that the activity of explaining material to others can strengthen deeper understanding and retention of learning [22]. In the context of mathematics learning, interaction and discussion between students also contribute to the development of thinking and understanding through the process of exchanging ideas and clarifying concepts. Thus, the Pair phase not only serves

as a means of exchanging answers, but also as a mechanism for building conceptual understanding through interaction and clarification of ideas [23].

In addition, the Share phase provides students with the opportunity to present the results of their thinking in front of the class, which contributes to increased student participation in learning [8]. Research shows that the implementation of TPS can increase student engagement, particularly in terms of the courage to participate in class discussions. Other findings also show that the TPS model contributes to an increase in learning outcomes and student activities during the learning process. Thus, the Share phase is more appropriately understood as a means to encourage student participation and involvement in [24].

The fact that 6 students (17.1%) were still in the medium N-Gain category, with the lowest score of 0.3182, suggests that the improvement in learning outcomes did not occur equally among all students. These findings are in line with research that shows that in cooperative learning there are still variations in learning outcomes between individuals [8]. Other studies also reported that in the implementation of TPS, student participation in learning activities can vary so that it has the potential to affect the learning outcomes obtained. In addition, research on TPS-based mathematics learning shows that the improvement achieved by students is in a varied, not entirely high category [25]. Thus, the variation in results found in this study is more appropriately understood as part of the general characteristics of cooperative learning, where the improvement in learning outcomes is not always uniform in each student [24].

IV. CONCLUSION

Based on the results of the study, it can be concluded that the application of the Think Pair Share (TPS) learning model has proven to be effective in improving learning outcomes and student participation. This increase can be seen from the increase in the average value and the N-Gain category which is at medium to high levels. In addition, the TPS model is also able to encourage active involvement of students in the learning process through independent thinking activities, discussion in pairs, and sharing the results of thinking in the classroom. Although there is variation in improved learning outcomes between students, it is a common characteristic of cooperative learning. Thus, the TPS model can be

used as an alternative to innovative and effective learning strategies to improve the quality of learning, especially in creating an active, collaborative, and meaningful learning atmosphere.

Further research is recommended to use a more robust experimental design, such as pure experiments with control groups, so that the results can be generalized more broadly. In addition, research can be developed by involving a larger and more diverse number of subjects to see the consistency of the effectiveness of the TPS model on various student characteristics. The next researcher is also advised to study the application of TPS to different materials or levels of education, and combine it with other learning models or media to obtain more optimal results. In addition, it is necessary to conduct more in-depth research related to the factors that affect the variation in the improvement of student learning outcomes in cooperative learning.

V. REFERENCES

[1]. OECD, "PISA 2022 Results Factsheets Indonesia PUBE," 2023. [Online]. Available: https://oecdch.art/a40de1dbaf/C108.

[2]. C. Batanero, M. M. Gea, M. del M. Lopez-Martin, and P. Artega, "An□isis de los conceptos asociados a la correlaci□n y regresi□n en los textos de bachillerato," *Didacticae*, no. 1, 2017, doi: 10.1344/did.2017.1.60-76.

A. Petersen, "Developing Students' Intuition on the Impact of Correlated Outcomes," *Journal of Statistics and Data Science Education*, vol. 30, no. 2, pp. 154–164, May 2022, doi: 10.1080/26939169.2022.2074584.

[3]. N. Suharto, S. Sukmawati, and M. Assaibin, "Ethnomathematics-Based Contextual Learning to Improve Students' Mathematical Reasoning Ability," *Kognitif: Jurnal Riset HOTS Pendidikan Matematika*, vol. 6, no. 2, pp. 552–564, May 2026, doi: 10.51574/kognitif.v6i2.5005.

[4]. M. Bächtold, P. Roca, and K. De Checchi, "Students' beliefs and attitudes towards cooperative learning, and their relationship to motivation and approach to learning," *Studies in Higher Education*, vol. 48, no. 1, pp. 100–112, Jan. 2023, doi: 10.1080/03075079.2022.2112028.

[5]. J. G. Tullis and R. L. Goldstone, "Why does peer instruction benefit student learning?," *Cogn. Res. Princ. Implic.*, vol. 5, no. 1, p. 15, Dec. 2020, doi: 10.1186/s41235-020-00218-5.

[6]. N. Michinov, É. Anquetil, and E. Michinov, "Guiding the use of collective feedback displayed on heatmaps to reduce group conformity and improve

learning in Peer Instruction," *J. Comput. Assist. Learn.*, vol. 36, no. 6, pp. 1026–1037, Dec. 2020, doi: 10.1111/jcal.12457.

[7]. L. Mundelsee and S. Jurkowski, "Think and pair before share: Effects of collaboration on students' in-class participation," *Learn. Individ. Differ.*, vol. 88, p. 102015, May 2021, doi: 10.1016/j.lindif.2021.102015.

[8]. N. H. Marhaeni, S. V. Ramos, T. Triyadi, and B. Sudarmaji, "The Effect of Think Pair Share Learning Model to Improve Studentâ€™s Problem-Solving Ability," *Jurnal Mercumatika : Jurnal Penelitian Matematika dan Pendidikan Matematika*, vol. 6, no. 2, Nov. 2022, doi: 10.26486/jm.v6i2.3032.

[9]. K. I. L. Storm, L. K. Reiss, E. A. Guenther, M. Clar-Novak, and S. L. Muhr, "Unconscious bias in the HRM literature: Towards a critical-reflexive approach," *Human Resource Management Review*, vol. 33, no. 3, p. 100969, 2023, doi: https://doi.org/10.1016/j.hrmr.2023.100969.

[10]. R. W. Khairunisa and Basuki, "Perbandingan Kemampuan Komunikasi Matematis Siswa antara Model Pembelajaran Kooperatif Tipe TPS dan CIRC," *Plusminus: Jurnal Pendidikan Matematika*, vol. 1, no. 1, pp. 113–124, Mar. 2021, doi: 10.31980/plusminus.v1i1.881.

[11]. M. Mernawati, Y. N. Harahap, and R. Susanti, "Pengaruh Kemampuan Komunikasi Matematika Melalui Model Pembelajaran Think Pair Share (TPS)," *FARABI: Jurnal Matematika dan Pendidikan Matematika*, vol. 4, no. 1, pp. 74–79, Jun. 2021, doi: 10.47662/farabi.v4i1.92.

[12]. Y. D. Hommy, C. S. Ayal, and D. A. Ngilawajan, "PERBANDINGAN HASIL BELAJAR SISWA YANG DIAJARKAN DENGAN MODEL PEMBELAJARAN KOOPERATIF TIPE THINK PAIR SHARE (TPS) DAN MODEL PEMBELAJARAN KONVENSIONAL," *Sora Journal of Mathematics Education*, vol. 2, no. 2, pp. 42–49, Oct. 2021, doi: 10.30598/sora.2.2.42-49.

[13]. C. Büscher, "Students' Development of Measures," 2019, pp. 27–50. doi: 10.1007/978-3-030-03472-6_2.

[14]. T. L. Toh, "School calculus curriculum and the Singapore mathematics curriculum framework," *ZDM – Mathematics Education*, vol. 53, no. 3, pp. 535–547, Jun. 2021, doi: 10.1007/s11858-021-01225-6.

[15]. Sugiyono, "METODE PENELITIAN KKUANTITATIF KUALITATIF DAN R&D," 2013.

[16]. J. W. . Creswell, *Educational research : planning, conducting, and evaluating quantitative and qualitative research*. PHI Learning Private Limited, 2013.

[17]. E. Firmansyah and A. Ikhwan, "Inclusive Education as a Catalyst for Social Transformation: A Systematic Literature Review."

[18]. K. M. Cooper, J. N. Schinske, and K. D. Tanner, "Reconsidering the Share of a Think–Pair–Share: Emerging Limitations, Alternatives, and Opportunities for Research," *CBE—Life Sciences Education*, vol. 20, no. 1, p. fe1, Mar. 2021, doi: 10.1187/cbe.20-08-0200.

[19]. Tarisa Putri, Joni Albar, and Kasihani Lestari, "The Effect of Think Pair Share (TPS) Cooperative Learning on Students' Conceptual Understanding in IPAS Learning at SDN 28," *Journal Innovative Practices in Education (JIPE)*, vol. 1, no. 3, pp. 179–183, May 2026, doi: 10.58540/jipe.v1i3.1612.

[20]. N. M. Webb *et al.*, "Engaging with others' mathematical ideas: Interrelationships among student participation, teachers' instructional practices, and learning," *Int. J. Educ. Res.*, vol. 63, pp. 79–93, 2014, doi: 10.1016/j.ijer.2013.02.001.

[21]. V. Hoogerheide, L. Deijkers, S. M. M. Loyens, A. Heijltjes, and T. van Gog, "Gaining from explaining: Learning improves from explaining to fictitious others on video, not from writing to them," *Contemp. Educ. Psychol.*, vol. 44–45, pp. 95–106, Jan. 2016, doi: 10.1016/j.cedpsych.2016.02.005.

[22]. J. Dunlosky, K. A. Rawson, E. J. Marsh, M. J. Nathan, and D. T. Willingham, "Improving Students' Learning With Effective Learning Techniques," *Psychological Science in the Public Interest*, vol. 14, no. 1, pp. 4–58, Jan. 2013, doi: 10.1177/1529100612453266.

A. Triyono, R. H. Nuary, N. Permatasari, Y. Yuni, and T. Wibowo, "The Level of Effectiveness of TPS and Conventional Methods Judging from Students' Geometry Learning Results Using the N-Gain Test," *AlphaMath : Journal of Mathematics Education*, vol. 10, no. 1, p. 125, May 2024, doi: 10.30595/alphamath.v10i1.21530.

[23]. G. M. Reed, W. D. Spaulding, and L. F. Bufka, "The relevance of the International Classification of Functioning, Disability and Health (ICF) to mental disorders and their treatment," *Alter*, vol. 3, no. 4, pp. 340–359, 2009, doi: https://doi.org/10.1016/j.alter.2008.11.003.

[24]. Tobroni, T., & Firmansyah, E. (2022). Tipologi manajemen tradisional dan modern dalam perkembangan pendidikan pesantren. *Research and Development Journal of Education*, *8*(1), 333-338.

[25]. Firmansyah, E. (2023). Various Paradigms in Islamic Educational Thought: Fundamentalism, Modernism, and Liberalism. *International Journal of Health, Economics, and Social Sciences (IJHESS)*, *5*(2), 139-145.

[26]. Bakar, M. Y. A., Firmansyah, E., & Abdeljelil, M. B. (2024). Legal framework analysis of Islamic religious education policy implementation. *International Journal of Law and Society*, *3*(3), 217-237.

[27]. Tobroni, T., Firmansyah, E., Rajindra, R., & Fadli, N. (2023). Spirituality as a paradigm of peace education. *Multicultural Islamic Education Review*, 23-32.
[28]. Firmansyah, E., Tobroni, T., & Rusady, A. T. (2023). Internalisasi Ajaran Islam Dalam Aktivitas Budaya Etnik Kaili Prespektif Antropologi Pendidikan Islam. *Research and Development Journal of Education*, *9*(1), 285-299.
[29]. Firmansyah, E., Anwar, S., & Khozin, K. (2023). Anthropological Approach to Islamic Education: Establishing Noble Spirituality in Overcoming Social Conflict. *Al-Hayat: Journal of Islamic Education*, *7*(1), 163-172.
[30]. Firmansyah, E., Tobroni, T., & Romelah, R. (2023). Anthropology of Islamic Education as A Socio-Cultural-Religious Modernization Strategy in Alam Al-Kudus Islamic Boarding School. *Edukasi Islami: Jurnal Pendidikan Islam*, *12*(03).
[31]. Jamil, A. I. B., & Firmansyah, E. (2025). Embracing diversity: Navigating religious identity in multicultural societies. *Online Journal of Research in Islamic Studies*, *12*(1), 37-60.
[32]. Firmansyah, E., Khozin, K., & Masdul, M. R. (2022). Implementasi Piaud Terhadap Anak–Anak Suku Kaili Pedalaman Di Desa Kalora Kabupaten Sigi. *Research and Development Journal of Education*, *8*(1), 386-390.
[33]. Faridi, F., & Firmansyah, E. (2024). Kelembagaan pendidikan Islam di Nusantara: Surau, meunasah, masjid, pesantren, madrasah. *Iqra: Jurnal Ilmu Kependidikan Dan Keislaman*, *19*(1), 93-97.
[34]. Firmansyah, E., & Idris, A. (2024). Moderation as a Solution to Religious Harmony in Poso Central Sulawesi. *International Journal of Law and Society*, *3*(1), 1-9.
[35]. Firmansyah, E., & Khozin, K. (2022). Teologi dan filsafat sebagai basis Pengembangan Kurikulum pendidikan agama Islam. *Research and Development Journal of Education*, *8*(2), 546-550.
[36]. Firmansyah, E., & Khozin, K. (2022). Teologi dan filsafat sebagai basis Pengembangan Kurikulum pendidikan agama Islam. *Research and Development Journal of Education*, *8*(2), 546-550.
[37]. Tobroni, T., Firmansyah, E., Masdul, M. R., & Anwar, S. (2024). Strengthening Islamic Education Values through Kaili Da'a Local Ethnic Cultural Symbol. *Al-Hayat: Journal of Islamic Education*, *8*(1), 113-122.
[38]. Firmansyah, E., Sumantri, P. A. H., Mutmainna, N., & Azizah, N. (2025). Implementasi Ta'awun dan Ukhuwah Wathaniyah melalui Tradisi Gotong Royong di Desa Pombewe. *Iqra: Jurnal Ilmu Kependidikan Dan Keislaman*, *20*(1), 14-25.

[39]. Syah, E. F., Khozin, K., & Haris, A. (2023). Merenda The History of Sheik Sya'ban in The Framework of Banggai Ethnic Islamic Educational Anthropology 8th Century Ad. *Edukasi Islami: Jurnal Pendidikan Islam*, *12*(03).

[40]. Firmansyah, E., & Humaidi, M. N. (2022). Penerapan Media Pembelajaran Berbasis Teknologi dalam Menghadapi Turbulensi Pendidikan yang Berkemajuan. *Research and Development Journal of Education*, *8*(2), 660-665.

[41]. Firmansyah, E., Arifin, S., & Humaidi, M. N. (2023). Kebijakan Pendidikan Agama Islam di Sekolah Umum Zaman Jepang. *JIIP-Jurnal Ilmiah Ilmu Pendidikan*, *6*(12), 10446-10453.

[42]. Firmansyah, E., & Romelah, R. (2022). Implementasi Pembelajaran Pai Dengan Metode Discovery Learning Dalam Upaya Melatih Kemandirian Siswa (Studi Kasus: Sd Alam Ar-Rohmah Kec. Dau, Kab. Malang). *Research and Development Journal of Education*, *8*(1), 322-326.

[43]. Masdul, M. R., Firmansyah, E., Kuliawati, K., & Suardi Wekke, I. (2024). Transformation of Islamic Religious Education Through The Use of E-Learning and Interactive Technology. *ScienceOpen Preprints*.

[44]. Khozin, K., & Firmansyah, E. (2024). Development of a holistic spiritual education model in higher college: A multidisciplinary perspective. *International Journal of Health, Economics, and Social Sciences (IJHESS)*, *6*(3), 591-594.

[45]. Yazid, S., & Firmansyah, E. (2022). Analisis problematika dan solusi atas motivasi belajar peserta didik dalam pendidikan Islam. *Research and Development Journal of Education*, *8*(1), 339-344.

[46]. Setiyawan, R., Hamsiah, W., Wahyuni, H. I., Ramadhan, S., & Firmansyah, E. (2026). Local Kyai's Religious Elite Transformation and Governance Paradox: A Comparative Study of Indonesia and Iran. *International Journal of Law and Society*, *5*(2), 290-306.

[47]. Nurhakim, M., Tobroni, T., Hasan, I., & Firmansyah, E. (2023). TRANSFORMASI PEMIKIRAN JAMAAH SALAFI DALAM MERESPON TUNTUTAN PEMBAHARUAN KURIKULUM PENDIDIKAN AGAMA ISLAM: Paham. keagamaan, transformasi. pemikiran, pimpinan pesantren. Salafi. *TAJDID: Jurnal Pemikiran Keislaman Dan Kemanusiaan*, *7*(2), 195-205.

[48]. Firmansyah, E., & Romelah, R. (2022). Tanggapan Guru Terhadap Perannya Dalam Melaksanakan Pembelajaran Di Sdit Al-Qolam Kecamatan Marawola Kabupaten Sigi. *Research and Development Journal of Education*, *8*(1), 345-353.

[49]. Syamsuddin, S. D., & Firmansyah, E. (2025). Developing Khuluqin'Adzim Through Tarbiyah Yaumiyah Program. *Al-Hayat: Journal of Islamic Education*, *9*(4), 766-781.

[50]. Nasution, M. F. R., & Firmansyah, E. (2026). Kemampuan Literasi Digital Siswa Madrasah Tsanawiyah Madinatussalam pada Materi Bahasa Indonesia. *Jurnal Pendidikan dan Pembelajaran Indonesia (JPPI)*, *6*(1), 206-216.

[51]. Firmansyah, E., & Ikwan, A. (2026). Inclusive Education as a Catalyst for Social Transformation: A Systematic Literature Review. *SUNDANO: International Journal of Education, Society and Cultural Transformation*, *1*(01).

[52]. Firmansyah, E., Tobroni, T., Lasawali, A. A., & Marhum, A. M. A. (2022). MERANGKAI PERKEMBANGAN LEMBAGA PENDIDIKAN PESANTREN DAN USAHANYA DALAM MELAHIRKAN TOKOH-TOKOH TERBAIK BANGSA. *Research and Development Journal of Education*, *8*(2), 702-706.

[53]. Firmansyah, E. (2026). Determinants of Social Inclusion from a Gender Perspective Among Vulnerable Populations. *SUNDANO: International Journal of Education, Society and Cultural Transformation*, *1*(01).

[54]. Firmansyah, E., & Wardati, N. A. (2022). Implementasi Pendidikan Muhammadiyah di Sekolah Dasar Muhammadiyah 6 Kota Batu. *Iqra: Jurnal Ilmu Kependidikan dan Keislaman*, *17*(2), 75-80.

[55]. Firmansyah, E., & Nurhakim, N. (2022). Strategies for Instilling Muhammadiyah Values within the Faculty of Islamic Religion, University of Muhammadiyah Palu. *International Journal of Health, Economics, and Social Sciences (IJHESS)*, *4*(2), 91-98.

[56]. Firmansyah, E., & Khalil, A. I. M. (2026). Epistemic Reclamation of Indigenous Local Wisdom as a Counter-Narrative to Anthropocentrism in Planetary Crisis Governance. *International Journal of Education and Cultural Transformation*, *1*(01).

[57]. Elmirna, N., Sahara, L., & Firmansyah, E. (2026). MANAJEMEN SUPERVISI AKADEMIK KEPALA SEKOLAH SEBAGAI UPAYA PENINGKATAN KOMPETENSI PEDAGOGIK GURU SMA NEGERI 02 BOMBANA. *Research And Development Journal Of Education (RDJE)*, *12*(01), 098-110.

[58]. Firmansyah, E., Ummah, M., & Tsaqiif, N. (2025). REPRESENTASI IDENTITAS BUDAYA LOKAL DALAM DESAIN KEMASAN PRODUK UMKM. *Chester: Art and Design Journal*, *1*(1), 1-13.

[59]. Firmansyah, E., & Wardati, N. A. (2022). Implementation of Islamic Morning Stories in Implementing Student's Religious Character in SD Alam

Ar-Rohmah. *International Journal of Health, Economics, and Social Sciences (IJHESS)*, *4*(3), 180-186.

[60]. Firmansyah, E., & Lasawali, A. A. (2022). Kiat-kiat yang dilakukan Fakultas Agama Islam Universitas Muhammadiyah Palu dalam Menciptakan Lulusan Berkualitas dan Berkemajuan. *Iqra: Jurnal Ilmu Kependidikan dan Keislaman*, *17*(1), 26-31.

[61]. Yazar, F., Farhan, F. A., Faqih, A., & Firmansyah, E. (2026). THE ROLE OF SOCIAL MEDIA IN SHAPING GENDER IDENTITY AMONG GENERATION Z. *H-Luminia: Education, Psychology and Social Behavior Research Journal*, *1*(01).

[62]. Firmansyah, E. (2026). The Constitutional Court in Guaranteeing Citizenship Rights in Indonesia. *Journal of Law and Society Review (JLSR)*, *1*(1), 12-21.

[63]. Firmansyah, E., Anwar, S., & Khozin, K. (2023). Anthropological Approach to Islamic Education: Establishing Noble Spirituality in Overcoming Social Conflict. *Al-Hayat: Journal of Islamic Education*, *7*(1), 163-172.

[64]. Masdul, M. R., Firmansyah, E., Kuliawati, K., & Wekke, I. S. (2024). Islamic Religious Education and Its Transformation through The Implementation of E-Learning and Interactive Technology. *Available at SSRN 4737464*.

[65]. Firmansyah, E. (2026). Legal Protection of Children's Right to Education. *Journal of Law and Governance*, *1*(02).

[66]. Firmansyah, E. (2026). Reviving the Spirit of Kenusantaraan: Transformation of Educational Institutions as the Foundation for a Civilized National Identity. *International Journal of Education and Cultural Transformation*, *1*(02).

[67]. Firmansyah, E. (2026). Integrative Islamic Education: A Bayani-Burhani-Irfani Epistemological Framework for Balancing Spirituality and Academic Excellence. *International Journal of Education and Cultural Transformation*, *1*(02).

[68]. Rajindra, R., & Firmansyah, E. (2026). Knowledge Management Perguruan Tinggi.

[69]. Romelah, R., & Firmansyah, E. (2026). EKOP Model of Islamic Cultural History (SKI) Learning for Islamic Religious Education Teacher Candidates. *Tafkir: Interdisciplinary Journal of Islamic Education*, *7*(1), 219-233.

[70]. Firmansyah, E., Hamka, H., & Khalil, A. I. M. (2025). TRANSFORMATIVE DIALOGUE OF PESANTREN THROUGH TASAWUF VALUES IN POST-CONFLICT DERADICALIZATION IN POSO REGENCY. *Edukasi Islami: Jurnal Pendidikan Islam*, *14*(001), 195-204.

[71]. Angkasa, M. B. B., Kurniawan, D., & Firmansyah, E. (2025). PROYEK MADING SEBAGAI STRATEGI PEMBELAJARAN LITERASI SISWA DI SDN KELING 2 KEDIRI. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, *10*(04), 112-119.

[72]. Eka Firmansyah, E. (2025). *Akulturasi Nilai-nilai Islam dengan Budaya Lokal Etnik Kaili Da'a Melalui Pesantren Alam* (Doctoral dissertation, Universitas Muhammadiyah Malang).

[73]. Purmasari, I., Rahma, U., & Firmansyah, E. (2025). Pengaruh motivasi belajar terhadap emosional dan prestasi akademik siswa SMP Negeri 1 Uluiwoi. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, *10*(04), 368-377.

[74]. Suryadinata, A. M. I., Pratama, M. W., & Firmansyah, E. (2025). MODEL PEMBELAJARAN PAI INTERDISIPLINER BERBASIS PEACE EDUCATION DAN DERADIKALISASI DI PONDOK PESANTREN MODERN AL-ISTIQAMAH NGATABARU. *Research and Development Journal of Education*, *11*(2), 780-785.

[75]. Faridi, F., & Firmansyah, E. (2024). Kelembagaan pendidikan Islam di Nusantara: Surau, meunasah, masjid, pesantren, madrasah. *Iqra: Jurnal Ilmu Kependidikan Dan Keislaman*, *19*(1), 93-97.

[76]. Marhum, A. M. A., & Firmansyah, E. (2026). Transformational Leadership in Education: The Role of Organizational Culture in Improving School Quality. *International Journal of Education and Cultural Transformation*, *1*(02).

[77]. Firmansyah, E. (2026). Integration of Sufistic Epistemology in the Development of Islamic Religious Education Curriculum to Foster Students' Spiritual and Social Piety. *International Journal of Education and Cultural Transformation*, *1*(02).

[78]. Firmansyah, E., & Masdul, M. R. (2026). Pesantren at the Crossroads of Time: The Anthropology of Islamic Education in the Negotiation of Local Identity and Global Citizenship in Indonesia. *International Journal of Education and Cultural Transformation*, *1*(02).

[79]. Firmansyah, E., Khalil, A. I. M., Zakin, N. Z., & Alwalid, M. A. (2026). Pesantren Alam as a Transformative Da'wa Strategy in the Phases of Islamization of the Kaili Da'a Ethnic Community in Central Sulawesi. *Journal of Social Sciences and Humanities*, *1*(01).

[80]. Setiyawan, M. I., Vhalery, R., & Haq, M. N. (2026). An Integrative Model of Moral Education: Ibn Miskawaih, Al-Ghazali, and Ibn Khaldun and Their Relevance to Student Character Education:-. *The Nexus-Education and Society Research Journal*, *1*(1).

[81]. Vhalery, R., Haq, M. N., Setiyawan, M. I., & Firmansyah, E. (2026). Implementation of Islamic Religious Education Based on Religious Moderation Through Digital Literacy in Preventing Radicalism Among Students in Indonesia: Study in Indonesia. *The Nexus-Education and Society Research Journal*, *1*(1).

[82]. Setiyawan, I., Firmansyah, E., Haq, M. N., & Vhalery, R. (2026). Implementation and Application of Public Relations Management at SMA Negeri 1 Batu:-. *The Nexus-Education and Society Research Journal*, *1*(1). Setiyawan, I., Firmansyah, E., Haq, M. N., & Vhalery, R. (2026). Implementation and Application of Public Relations Management at SMA Negeri 1 Batu:-. *The Nexus-Education and Society Research Journal*, *1*(1).

[83]. Hendra, H., Vhalery, R., Haq, M. N., Firmansyah, E. F., & Setiyawan, M. I. (2026). Integrative Model of Moral Education in the Perspective of Ibn Miskawaih, Al-Ghazali, and Ibn Khaldun and Its Relevance to Student Character Education:-. *The Nexus-Education and Society Research Journal*, *1*(1).

[84]. Haq, M. N., & Firmansyah, E. (2026). DESAIN PEMBELAJARAN BERBASIS YOUTUBE KIDS PADA MATERI DOA SEHARI-HARI DI TK SURYA GEMILANG. *KAJIAN PENDIDIKAN ALAM DAN SOSIAL (KAPAS)*, *1*(01), 24-33.

[85]. Haq, M. N., Firmansyah, E., & Alwan, M. (2026). DERADIKALISASI MODERASI BERAGAMA MELALUI PENDIDIKAN ISLAM DI ERA DIGITAL: SISTEMATIS LITERATUR REVIEW. *KAJIAN PENDIDIKAN ALAM DAN SOSIAL (KAPAS)*, *1*(01), 34-41.

[86]. Firmansyah, E., & Haq, M. N. (2026). IMPLEMENTASI PEMBELAJARAN PAI DALAM BINGKAI HOMESCHOOLING DI FIB SCHOOL OF TALENTS JOYOGREEN MALANG. *KAJIAN PENDIDIKAN ALAM DAN SOSIAL (KAPAS)*, *1*(01), 42-47.

[87]. Nurafiah, N., Lestariningsih, O. S., Balan, O. F., & Firmansyah, E. (2026). PERSEPSI GURU TERHADAP IMPLEMENTASI DEEP LEARNING DALAM PEMBELAJARAN BAHASA INDONESIA DI MTS DIPONEGORO KOTA BLITAR. *Research And Development Journal Of Education (RDJE)*, *12*(01), 123-133.

[88]. Aminah, S., Humaira, H., & Firmansyah, E. (2026). DINAMIKA SOSIOLINGUISTIK PEMBELAJARAN BAHASA DI SMP IT ZURRIYATUL QURANI ALMAARIF KOTA LHOKSEUMAWE. *Research And Development Journal Of Education (RDJE)*, *12*(01), 073-084.

[89]. Dianang, M. T. R., Hidayat, N., & Firmansyah, E. (2026). Integration of Andragogy and Pedagogy Approaches In Improving Student Learning Capabilities. *KREDO: Jurnal Ilmiah Bahasa dan Sastra*, *9*(2), 87-95.

[90]. Alamin, R. L., Febriyanti, A. P., & Firmansyah, E. (2026). Building the Foundation of Education through Learning Philosophy and Theory: A Study on Strengthening the Educational Function of Libraries. *Journal of English Language and Education*, *11*(2), 56-64.

[91]. Widyatama, W., & Firmansyah, E. (2026). PENGARUH PENGGUNAAN MEDIA PODCAST TERHADAP KEMAMPUAN MENYIMAK SISWA KELAS X SMK NEGERI 1 POGALAN. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, *11*(01), 92-102.

[92]. Rismawati, S., Lasawali, A. A., Firmansyah, E., & Anirah, A. (2025). PROBLEMATIKA PENERAPAN KURIKULUM MERDEKA DI SMP ISLAM TERPADU BINA INSAN PALU. *Research and Development Journal of Education*, *11*(2), 760-770.

[93]. Firmansyah, E., Tobroni, T., & Khozin, K. (2024). Anthropological Approach as a Strategy to Increase Interest in Learning Islamic Education. *JIE (Journal of Islamic Education)*, *9*(1), 114-125.

[94]. Firmansyah, E., Tobroni, T., & Romelah, R. (2023). Anthropology of Islamic Education as A Socio-Cultural-Religious Modernization Strategy in Alam Al-Kudus Islamic Boarding School. *Edukasi Islami: Jurnal Pendidikan Islam*, *12*(03).

[95]. Firmansyah, E., Setiyawan, M. I., & Vhalery, R. (2026). Ralph W. Tyler Curriculum Model in Instilling Islamic Values Through Storytelling Method for Children Aged 4-5 Years at the Early Childhood Education Level:-. *The Nexus-Education and Society Research Journal*, *1*(1).

[96]. Firmansyah, E., Marhum, A. M. A., & Masdul, M. R. (2022). The Efforts of the Palu Odoj Community in Creating a Generation of Al-Quran Love for Odoj Members of Palu City, Central Sulawesi (Case Study: Secretariat Odoj Palu). *International Journal of Health, Economics, and Social Sciences (IJHESS)*, *4*(1), 1-8.

[97]. Masdul, M. R., Firmansyah, E., Lasawali, A. A., & Marhum, A. M. A. (2022). Problematika Madrasah Terhadap Kurikulum yang Seringkali Berubah-ubah di MTS Aisiyah Kota Palu Sulawesi Tengah. *Iqra: Jurnal Ilmu Kependidikan dan Keislaman*, *17*(1), 1-6.