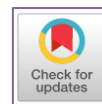


## Effectiveness of Think-Pair-Share on active participation of elementary teacher education students



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**Abstract:** Student participation in class discussions in the Elementary School Teacher Education (PGSD) program is often still low, indicating the need for an instructional model that actively engages students. This study aims to examine the effectiveness of the Think-Pair-Share (TPS) learning model in increasing the active participation of PGSD students in class discussions. The study employed a quantitative approach using a quasi-experimental One Group Pretest-Posttest Design involving 35 PGSD students. Data were collected through pretest-posttest instruments and observation sheets of student active participation and analyzed using descriptive statistics, paired sample t-test, and Cohen's d effect size. The results showed a significant increase in students' pretest and posttest scores, with a t-statistic of 19.18 and a p-value far below 0.05. The effect size analysis yielded a Cohen's d value of 3.24, indicating a very strong effect of the TPS model. Observation results also demonstrated an improvement in all indicators of active participation from the fairly active category to very active. In conclusion, the Think-Pair-Share learning model is effective in enhancing active participation and creating a more interactive and collaborative learning environment for PGSD students.

**Keywords:** Think-Pair-Share, active participation, cooperative learning, elementary teacher education, instructional effectiveness

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## INTRODUCTION

Education is a process aimed at shaping and developing students' potential so they grow into faithful, knowledgeable, creative, and independent individuals (MS et al., 2025). At the elementary education level, teachers play a key role in fostering an active, creative, and enjoyable learning environment (Miftah & Syamsurijal, 2024). Therefore, prospective elementary school teachers need to be equipped with sound teaching skills from their studies (Yuanita, 2019).

As future educators, Elementary School Teacher Education (PGSD) students are expected to possess communication skills, collaborate, and play an active role in learning activities (Untari, 2017). However, initial observations of a Learning Models course in elementary school indicate that a number of students remain passive during class discussions (Oktaviani, 2022). They prefer to wait for others to express their opinions, demonstrate little courage in expressing ideas, and are inactive in asking questions (Fikri et al., 2024). This situation indicates that student engagement is still low (Srifalensia et al., 2023).

Student passivity in lecture discussions is not an incidental phenomenon but tends to occur repeatedly, where only a small number of students actively participate while the majority remain silent, hesitant to express ideas, or rely on dominant peers. This condition has implications for the quality of learning, as limited participation can reduce the effectiveness of discussions, inhibit the development of critical thinking and communication skills, and weaken professional preparedness of PGSD students as future elementary school teachers. Although this issue has been widely recognized, empirical studies that explicitly examine how structured learning models reduce student passivity and increase active participation particularly in Learning Models courses in elementary teacher education remain limited. This indicates a clear research gap regarding the effectiveness of specific instructional strategies in addressing student passivity and improving the quality of classroom interaction.

One learning model that can be implemented to increase student engagement is Think-Pair-Share (TPS) (Purwanti et al., 2024). Lyman (1981) developed the TPS model, which is classified as a cooperative learning approach (Kusuma & Aisyah, 2012). This model emphasizes the stages of independent thinking (think), discussion with a partner (pair), and presentation of discussion results to the group (share) (Nuzalifa, 2021). Through this three-stage process, students can develop their own ideas, discuss them with their partners, and then present the results of their discussions to the class (Pangestuti, 2017). Therefore, all students have an equal opportunity to participate actively (Rochana et al., 2021).

The implementation of the Think-Pair-Share model in lectures is expected to foster a more interactive and collaborative learning environment (Pomeistia, 2025). Students not only act as listeners, but also as active participants in the learning process (Kholik et al., 2025). Therefore, research is needed to assess the effectiveness of the Think-Pair-Share model in increasing the active participation of Elementary School Teacher Education (PGSD) students in the Learning Models in Elementary School course (Umar et al., 2025).

This study was formulated to examine the level of active participation of Elementary School Teacher Education (PGSD) students before and after implementing the Think-Pair-Share learning model and to test its effectiveness in increasing student activeness in class discussions (Rambe, 2022). In line with this formulation, the purpose of this study is to provide an empirical description of student active participation in the pre-implementation and post-implementation stages of Think-Pair-Share, and to scientifically confirm the model's effectiveness as a learning strategy capable of increasing student active engagement in the lecture process.

The Think-Pair-Share (TPS) learning model is a cooperative strategy introduced by Frank Lyman in 1981, which emphasizes individual thinking processes, pair discussions, and sharing ideas in large groups (Yuliza et al., 2021). Through this three-stage series, students can understand the material individually, discuss it with a partner, and finally present the results of the discussion to the class (Sekarinasih, 2022). The characteristics of TPS, which provide time for thinking, opportunities for pair discussions, and opinion-sharing sessions, make this model effective in increasing student activeness, especially in discussion activities (Purwanti et al., 2024). In addition to improving critical thinking skills and independence, TPS also helps develop communication skills, collaboration, self-confidence, and responsibility for the learning process and outcomes (Marsela et al., 2024). Although it has several weaknesses, such as requiring adequate

time and readiness for cooperation between pairs, this model is still considered suitable for realizing more active and participatory learning (Liber et al., 2024).

Active student participation in learning includes physical and mental engagement, such as asking questions, answering questions, expressing opinions, collaborating, and demonstrating enthusiasm during learning activities (Ruslandi et al., 2025). The level of student engagement is influenced by various factors, such as the learning model implemented by the lecturer, learning motivation, classroom conditions, communication skills, and peer support (Khozen & Setyowati, 2025). In this context, the TPS (Test Participation Model) is considered directly related to increased active participation because it provides equal opportunities for every student to think, discuss, and express their ideas (Anggalia, 2024). The think stage helps students process information critically, the pair stage strengthens interaction and collaboration, while the share stage encourages courage in public speaking (Purwanti et al., 2024). Thus, TPS has the potential to reduce the dominance of certain students in discussions and encourage the involvement of previously less active students (Pomeistia, 2025).

Conceptually, the TPS model is positioned as an independent variable that is expected to influence the dependent variable, namely active student participation in class discussions (Mutia, 2020). This framework emphasizes that the implementation of TPS is expected to bring positive changes to student participatory behavior in lecture activities (Munthe et al., 2024). Based on this foundation, the research hypothesis is formulated that the Think-Pair-Share learning model is effective in increasing the activeness of PGSD students in participating in class discussions (Nasution, 2019).

Based on the problems identified, this study is directed to examine student active participation before and after the implementation of the Think-Pair-Share (TPS) learning model in the Learning Models in Elementary School course. The main purpose of this research is to analyze the effectiveness of the Think-Pair-Share model in increasing the active participation of Elementary School Teacher Education (PGSD) students during class discussions. Accordingly, the research is guided by the following research questions: (1) how is the level of PGSD students' active participation before and after the implementation of the Think-Pair-Share learning model, and (2) to what extent is the Think-Pair-Share model effective in improving students' active participation in class discussions.

## **METHODS**

This study employed a quantitative approach with a quasi-experimental method using a One Group Pretest-Posttest Design. This design was selected to examine changes in student active participation before and after the implementation of the Think-Pair-Share (TPS) learning model within an authentic classroom context (Abraham & Supriyati, 2022; Hidayah, 2019). The independent variable in this study was the Think-Pair-Share learning model, while the dependent variable was students' active participation in class discussions. Conceptually, active participation is understood as students' physical and mental involvement in learning activities, which includes asking questions, answering questions, expressing opinions, collaborating with peers, and demonstrating enthusiasm during the learning process (Darajat et al., 2024; Ruslandi et al., 2025). These indicators formed the theoretical basis for the development of the research instruments.

The population of this study consisted of all Elementary School Teacher Education (PGSD) students enrolled in the Learning Models in Elementary School course in the

2025/2026 Academic Year. A sample of 35 students was selected using a purposive sampling technique. Data were collected using several techniques, namely tests, observations, and documentation (Ardiansyah et al., 2023). The research instruments included a pretest and posttest to measure learning outcomes related to discussion materials, as well as an active participation observation sheet developed based on the indicators of participation, including asking questions, answering questions, expressing opinions, cooperation, and enthusiasm (Yeni, 2021). The observation sheet used a scaled assessment to capture the level of student engagement during learning activities.

Data analysis was conducted using descriptive and inferential statistical techniques. Descriptive statistics were used to describe the distribution of pretest and posttest scores as well as the level of student active participation. Inferential analysis was carried out using a paired sample t-test to determine the significance of differences between pretest and posttest scores, as this test is appropriate for comparing two related measurements within a single group (Taupik & Fitria, 2021). In addition, the magnitude of the treatment effect was calculated using Cohen's d to determine the strength of the influence of the Think-Pair-Share model on student active participation and learning outcomes (Sakti et al., 2024). This combination of analytical techniques provides a comprehensive evaluation of both the statistical significance and practical impact of the learning model implemented in this study.

## RESULT AND DISCUSSION

### Result

#### Comparison Results of Pretest and Posttest Scores of the TPS Model

This research was conducted on third-semester Elementary School Teacher Education (PGSD) students at a state university in Indonesia. The research was carried out in the Elementary School Learning Models course over two sessions. The total number of subjects was 35 students, and the study used a pre-experimental design (One Group Pretest–Posttest Design). The study began with a pretest, followed by learning using the Think-Pair-Share (TPS) model, and concluded with a posttest and observations of student activity during class discussions.

The comparison of pretest and posttest scores shows a consistent pattern of improvement across all participants. Pretest scores ranged from 7 to 11, while posttest scores increased to a range of 11 to 13. No participant experienced a decrease in score after the implementation of the TPS model. This consistent increase indicates that the intervention had a strong impact on improving participants' learning outcomes.

**Table 1.** Comparison of Pretest and Posttest

Statistics	Pretest	Posttest
Mean	9.46	12.77
Standard Deviation	0.89	0.55
Minimum Value	7	11
Maximum Value	11	13

Table 1 presents descriptive statistics of the pretest and posttest results. The average score increased from 9.46 in the pretest to 12.77 in the posttest, indicating an improvement of 3.31 points. The standard deviation decreased from 0.89 to 0.55, showing that posttest scores became more homogeneous. The minimum score

increased from 7 to 11, while the maximum score increased from 11 to 13, indicating consistent improvement across all participants.

Inferential analysis using a paired sample t-test showed a t-statistic value of 19.18 with a p-value of  $8.29 \times 10^{-20}$ , which is far below the significance level of 0.05. This result indicates a statistically significant difference between pretest and posttest scores. Furthermore, the effect size calculation using Cohen's d yielded a value of 3.24, indicating a very large effect.

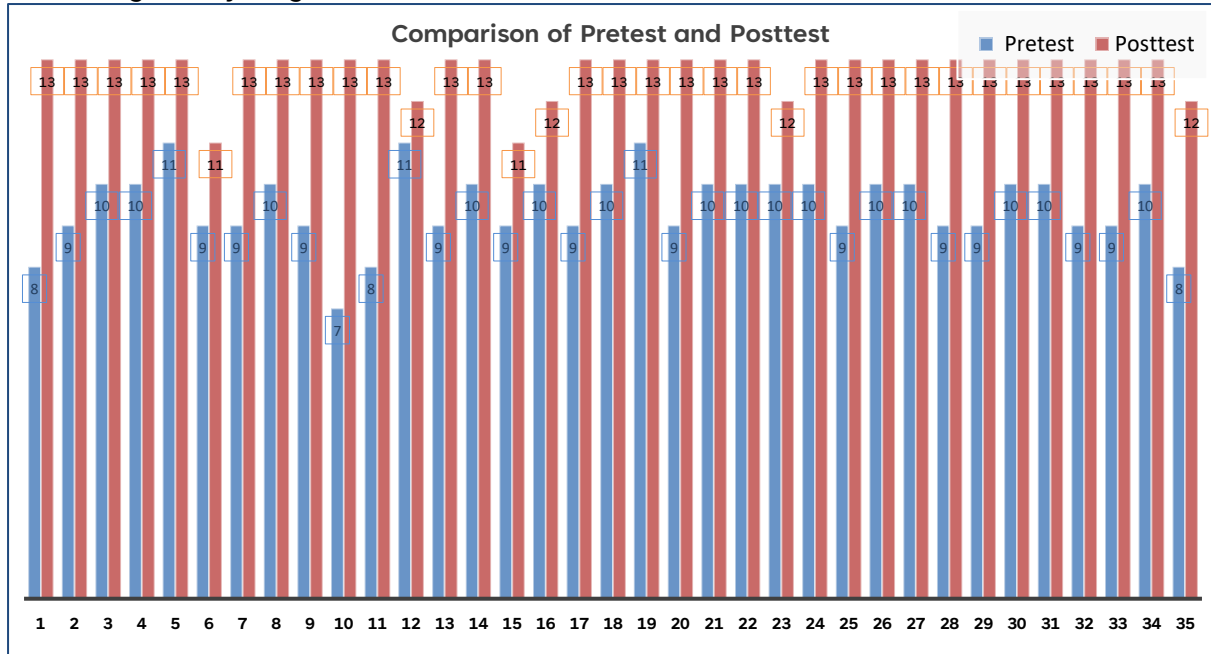


Figure 1. Comparison of Pretest and Posttest Scores of the TPS Model

### Effectiveness of the Think-Pair-Share Model on Students' Active Participation

Observational data revealed a significant increase in all indicators of student active participation after the implementation of the Think-Pair-Share model. The overall average participation score increased from 2.3 (fairly active) in the pretest to 3.8 (very active) in the posttest.

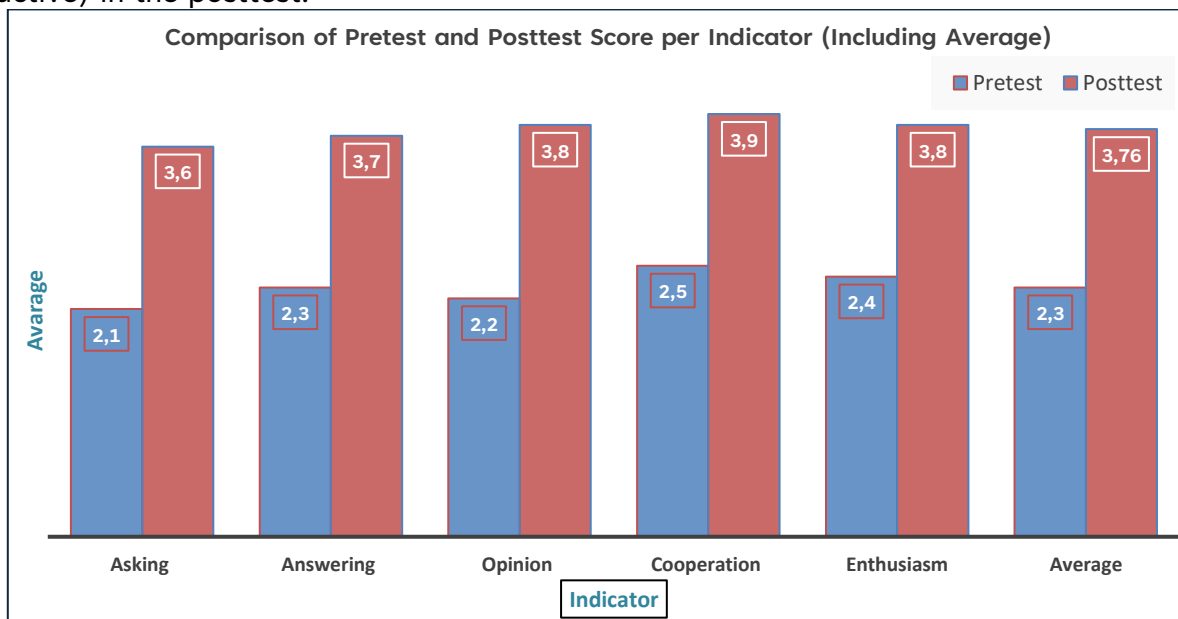


Figure 2. Effectiveness of the Think-Pair-Share Model on Active Student Participation

When examined by indicator, the largest increase occurred in expressing opinions, with an improvement of 1.6 points. Other indicators, including asking questions, answering questions, cooperation, and enthusiasm, showed increases ranging from 1.4 to 1.5 points. These results indicate that TPS positively influences multiple dimensions of student participation in classroom discussions.

The comparison of pretest and posttest results shows a consistent improvement in student learning outcomes after the implementation of the Think-Pair-Share (TPS) learning model. All students experienced an increase in scores, reflected in the rise of the mean score and supported by statistically significant test results and a very large effect size. These findings indicate that the application of TPS was followed by measurable learning gains across the entire sample.

Observation results also reveal an increase in all indicators of student active participation after the implementation of TPS. Participation levels improved from fairly active to very active, with notable increases in expressing opinions, asking questions, answering questions, cooperation, and enthusiasm. These results show that the use of TPS was accompanied by more active and evenly distributed student involvement during class discussions.

## **Discussion**

The results of this study demonstrate that the Think-Pair-Share (TPS) learning model is highly effective in improving both learning outcomes and active participation of PGSD students in class discussions. The significant increase in pretest to posttest scores, supported by a very large effect size, indicates that TPS has a strong impact on students' understanding and mastery of course material. These findings are in line with (Guntoro, 2024; Nurlaika et al., 2024) that reported improvements in learning outcomes following the implementation of TPS in higher education and teacher education contexts. Alsmadi et al. (2023) has shown that the structured stages of thinking, pairing, and sharing encourage deeper cognitive processing and enhance students' comprehension of learning materials.

In terms of active participation, the observational findings reveal that TPS effectively increases students' involvement across all participation indicators. The highest improvement in expressing opinions indicates that the think and pair stages provide students with sufficient time and a supportive environment to formulate and validate ideas before sharing them in larger forums. This finding is consistent with earlier studies highlighting that peer-based discussion can reduce anxiety and increase students' confidence in participating actively. However, compared to some previous research that reported moderate or gradual improvements in participation, the magnitude of improvement observed in this study was relatively higher. This difference may be influenced by the characteristics of PGSD students, who are trained as prospective teachers, as well as the discussion-oriented nature of the Learning Models course.

Some previous studies have noted limitations of TPS related to time management and uneven student readiness, which may reduce its effectiveness in certain contexts. In contrast, such limitations did not significantly emerge in this study, as evidenced by the consistent improvement across all participation indicators. This suggests that TPS was implemented in a manner that was appropriate to the learning context and student characteristics, allowing its advantages to be maximized while minimizing potential constraints.

Importantly, the findings of this study are closely aligned with the data collection techniques employed. Improvements in learning outcomes were obtained from pretest and posttest data, while changes in student participation were identified through systematic classroom observations using predefined indicators. The convergence between quantitative test results and observational data strengthens the credibility of the findings, indicating that the reported improvements are empirically grounded and not based on perception alone. This alignment confirms that the Think-Pair-Share model not only enhances cognitive achievement but also effectively promotes active and participatory learning behavior among PGSD students.

The findings of this study confirm that the Think-Pair-Share (TPS) learning model is effective in increasing both learning outcomes and active participation of PGSD students, as reflected in the significant improvement of pretest and posttest scores as well as observational data. This result is consistent with the theoretical foundation of TPS as a cooperative learning model that emphasizes individual thinking, peer interaction, and collective sharing. Through these structured stages, students are encouraged to engage cognitively and socially, which supports deeper understanding and more active involvement in discussion-based learning.

The increase in all indicators of active participation, particularly in expressing opinions, aligns with previous studies that highlight TPS as a strategy capable of reducing student passivity and increasing confidence in communication. The pair stage provides a safe space for students to clarify ideas before sharing them publicly, which helps minimize anxiety and hesitation often found in conventional discussion settings. Compared to findings from earlier research that reported gradual or moderate improvements, the relatively high level of participation observed in this study suggests that TPS is especially suitable for discussion-oriented courses in teacher education programs.

Furthermore, the consistency between quantitative test results and observational findings strengthens the validity of this study's conclusions. Learning improvements identified through pretest-posttest analysis are supported by observable changes in student behavior during classroom discussions. This convergence indicates that the effectiveness of TPS is not limited to cognitive outcomes but also extends to participatory learning processes. Therefore, these results reinforce existing empirical evidence that positions Think-Pair-Share as an effective instructional model for promoting active, interactive, and collaborative learning among prospective elementary school teachers.

## CONCLUSION

This study shows that the Think-Pair-Share (TPS) learning model is very effective in increasing the active participation of PGSD students in class discussions. There was a significant increase from the pretest to the posttest score, which is supported by the results of the t-test with a very small p-value and a Cohen's d effect size of 3.24, which is included in the very large category. All indicators of active participation, namely asking questions, answering, expressing opinions, cooperation, and enthusiasm, experienced a consistent increase, indicating that TPS encourages overall student involvement, both cognitively and affectively. Thus, TPS is an effective, relevant cooperative learning model and is able to create a more interactive and collaborative discussion atmosphere in PGSD lectures.

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