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Enhancing Collaboration Skills of Elementary Students through The Think-Pair-Share Model

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Abstract

This study aims to improve students' collaboration skills using the Think-Pair-Share (TPS) learning model supported by digital media Canva and Wordwall. Background of this study is low low-ability collaborative student third grade at an elementary school in West Bandung Regency. Research use approach quantitative with pre-experimental one group pretest- posttest design. Subjects study consists of of 30 students, and data was collected through observation as well as analyzed using SPSS and Microsoft Excel. The research results show existence improvement significant on skills collaborative student after implementation of the IT- based TPS model. The average score before treatment is 49.03 and increasing to 86.03 after treatment, with N-Gain value of 0.73 which is included category high. Increase visible throughout indicator skills collaboration, including contribution, work same, solution problems, and evaluation performance group. The TPS learning strategy has been proven capable create atmosphere active, fun, and learning facilitate involvement student in a way emotional and social. In addition, this model give room for student For each other exchange ideas, build trust self, and develop a sense of responsibility answer together in a collaborative and meaningful learning process. This model also supports creation environment learn more participatory, interactive, and reinforcement - oriented skills important 21st century in general comprehensive and sustainable through innovation relevant modern learning.

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INTRODUCTION

21st-century education can be defined as education adapted to the conditions of the 21st century. In this digital era, collaboration skills have become one of the essential competencies that students must master to achieve success in their academic and professional lives. 21st-century education aims to create individuals who possess critical intellectual skills, creative thinking,

ethical social skills, and character in life (Agustin & Pratama, 2021). These skills are known as the 4Cs in 21st-century learning, one of which is collaboration. Collaboration is a skill that teaches working together to achieve certain goals (Aditya & Wahyudi, 2024). Collaboration skills can help students better understand the educational goals they will achieve (Kusumawati & Kristin, 2023).

The importance of collaboration skills is further emphasized by curriculum alignment requirements. Indicators of collaboration skills include the ability to contribute, manage time, solve problems, collaborate, conduct research, maintain work quality, stay focused, demonstrate readiness, and evaluate group performance (Suharti et al., 2024). These indicators are directly aligned with competency standards outlined in the current Indonesian elementary curriculum, making collaboration skills development not just beneficial but mandatory for student success.

Classroom observation reveals significant gaps in current collaboration practices. Elementary school is an important stage in developing collaboration skills, because at this time students begin to learn to work together and interact with classmates in an organized learning environment (Purnomo et al., 2024). As explained by (Pothou et al., 2024), in Turkey, some model schools apply peer approach and learn together in small groups in the classroom, so that elementary school teachers there see that this method helps shy students become more confident and more active in participating in group activities.

However, based on the PISA (Programme for International Student Assessment) study (OECD, 2023), Indonesian students are still lagging behind in terms of collaboration and communication skills compared to other countries. Additionally, based on classroom observations at elementary schools in West Bandung Regency, specific evidence reveals concerning patterns: only 9 out of 32 students showed active participation during group work, with teachers reporting that most students either dominated discussions or remained completely passive. Further data collection through structured observation showed that students' collaboration skills are still low, indicated by several facts: 1) students still have difficulty working together in groups; 2) students tend to dominate or conversely be passive in group activities; 3) students are not yet able to respect the opinions of their group mates; 4) students do not yet have a sense of responsibility for group assignments.

Teachers still use conventional learning methods dominated by lectures, resulting in very minimal interaction between students. Interviews with students revealed that they tend to be reluctant to interact with friends other than their close friends, further limiting collaborative skill development. To overcome this, a suitable learning model is needed, one of which is TPS (Think, Pair, and Share). TPS is a collaborative learning technique that aims to involve students actively and comprehensively in the learning process (Yotha et al., 2024). The TPS model encourages students to learn actively by linking new material to their existing knowledge, so that they are not only recipients of information, but also directly involved in the learning process (Safitri & Tresnawati, 2020). This model allows students to develop critical thinking skills, reasoning, and find solutions independently to the problems they face, while creating a collaborative and mutually supportive learning environment. According to Robertson, (Theabthueng et al., 2022) the TPS model has three stages, including 1) *think* teachers can ask questions, directions, or observations; 2) *pair* discuss with their group friends to find answers to previous questions; 3) *share* the results of previous discussions with their friends in front of the class. The TPS model provides several

benefits, including encouraging students to learn independently while working together, increasing active involvement, and providing opportunities for students to show their participation in groups (Sutopo et al., 2020).

Several previous studies have demonstrated the effectiveness of the TPS learning model in improving students' collaboration skills. Research conducted by Putri et al., (2021) showed that the implementation of the TPS model successfully improved the collaboration skills of fourth-grade elementary school students from the adequate category (65.3%) to the good category (82.7%). Similarly, research by Wulandari,(2022) shows that the TPS learning model can improve elementary school students' collaboration skills by a percentage increase of 23.5%. Other research conducted by Marsela et al., (2024) also found that the implementation of the TPS model is effective in improving students' collaboration skills.

Previous research that only used the conventional TPS model, this study integrates Canva and Wordwall as technological mediators that facilitate the collaboration process in children aged 6-7 years. *Canva* is an application that provides various features that can be used by teachers to create interactive and engaging learning media (Kurniawan et al., 2024). Meanwhile, *Wordwall* is a website *that* can be used as a learning resource, interesting learning media, and assessment tool so that it can increase student motivation and learning outcomes in the classroom (Yulianti et al., 2024). From the above understanding, *Canva* and *Wordwall* can help teachers to improve student motivation and learning outcomes.

As research has been conducted by, Andriyani et al., (2025) it was found that learning using *Canva* and *Wordwall media* can increase student learning motivation in Pancasila Education subjects. Another study conducted by Utami et al., (2024) found that after implementing *Canva* and *Wordwall* in student learning, there was an increase in science lessons, this was seen in cycle I, where the average score was 78 and cycle II, where the average score was 89. In addition, students also felt happy and enthusiastic in learning so that it could increase student learning focus.

Based on the description above, this study aims to improve the collaboration skills of third-grade students by implementing the TPS learning model. Support from previous research results strengthens the fact that TPS is able to create an active, reflective, and cooperative learning atmosphere, thereby improving students' collaboration skills in the classroom. The TPS learning model aligns with Vygotsky's Zone of Proximal Development (ZPD) concept. This theory states that social interactions, such as those that occur in pair and group discussions, help students complete tasks that would initially be too difficult to complete alone. Thus, TPS provides a platform for students to learn and grow with peer support (Lestari et al., 2025).

METHOD

This study used a quantitative approach with a pre-experimental one-group pretest-posttest design. The quantitative approach was chosen to measure the effectiveness of the TPS learning model in improving students' collaboration skills through the analysis of testable numerical data statistically (Waruwu, 2024). The pretest-posttest design allows researchers to compare the condition of students' collaboration skills before and after the implementation of the TPS model with the help of Canva and Wordwall media, so that they can identify changes that occur as a result of the learning intervention provided.

Figure 1.

The population in this study were all third-grade students at an elementary school in West Bandung Regency. The research sample consisted of 30 third-grade students selected using purposive sampling techniques based on specific criteria. The sample selection criteria included: (1) students not yet accustomed to collaborative learning in daily learning, (2) still in the early stages of developing social and interpersonal skills, (3) having varied academic, social, and learning experience backgrounds, and (4) not having physical or cognitive limitations that could hinder participation in collaborative activities. This sample selection was based on the consideration that the students involved had characteristics that were in accordance with the research objectives to develop collaborative skills through the TPS learning model.

This study involved two main variables. The independent variable was the implementation of the TPS learning model with the aid of Canva and Wordwall media, implemented throughout the learning process. The dependent variable was students' collaboration skills, measured through nine indicators: the ability to contribute, manage time, solve problems, collaborate, conduct research, maintain work quality, stay focused, demonstrate readiness, and evaluate group performance (Suharti et al., 2024).

Analysis descriptive quantitative done with using SPSS and Microsoft Excel for analyze the data that has been collected from results observation , pretest, and posttest . For measure enhancer skills collaborations student done before and after implementation of the TPS model with help Canva and Wordwall . Using Independent Sample T-Test and NGain For know significance and effectiveness from the assisted TPS model canva and wordwall assisted with using SPSS version 26.

The results of the data obtained nature quantitative data collected through non- test instruments in the form of sheet observations consisting of from indicator skills collaboration . Instruments are provided before and after treatment . The indicators used is as following (Suharti et al., 2024):

Table 1. Instrument Skills Collaboration

Aspect	Indicator
Ability contribute	Student give contribution in form of ideas, solutions, or supporting opinion achievement objective together as member group.
Manage time	Student utilise time for finish given problem.
Solve problem	Student do discussion together with Friend his group.
Cooperate	Students coordinate well between group members, supported by smooth communication and mutual respect.
Do research	Student show initiative in look for source information addition in a way independent through read book
Maintaining work quality	Students not only complete assignments correctly, but demonstrate thoroughness, orderliness, and conformity to expected standards.
Stay focus	Student capable guard attention to ongoing task done although in dynamic group

Aspect	Indicator
Show readiness	Student has prepare self with notice explanation from the teacher and write down what is considered important at the moment the teacher's explanation is shown through Canva and Wordwall
Evaluate performance group	Student presenting results discussion with member his group and give input or question to other groups

TPS model stages with help canva and wordwal , as following:

Table 2. TPS Model Stages with the Help of Canva and Wordwall

TPS Syntax	Implementation with Canva and Wordwall
Think	Students are invited to pay attention to Canva and Wordwall
Pair	Students are invited to discuss with their group members to solve problems in Canva and Wordwall.
Share	Student presenting results discussion they based on source from Canva and Wordwall

RESULTS AND DISCUSSION

Results

The research used quantitative descriptive analysis, and obtained results before and after implementing the TPS model with the help of Canva and a word wall. The results obtained were as follows: is as following:

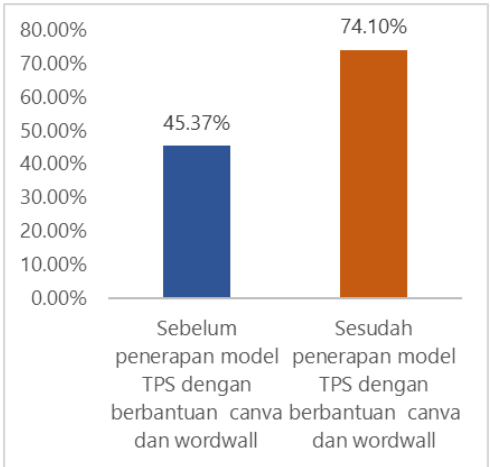

Figure 2. Average Skill Comparison Collaboration Before and after Implementation of the TPS Model

Figure 2 shows an increase in collaboration scores after applying the TPS model to learning. So it can be said that students' collaboration skills have improved after implementing the TPS model with the help of Canva and Wordwall. To prove this, a t-sample test was carried out using SPSS version 26 with a significance level of $\alpha = 0.05$. The results of the analysis are presented in the table below.

Table 3. Average Skill Comparison Collaboration Before and after Implementation of the TPS Model

	N	Mean	Standard Deviation	Sig (2-Tailed)
Results before implementing the TPS model with the help of Canva and Wordwall	30	49.03	6,054	0.000
Results after applying the TPS model with the help of Canva and Wordwall	30	86.03	6,250	

Based on the SPSS results, the average value before applying the TPS model with the help of canva and wordwall was 49.03 and the average after applying the TPS model with the help of canva and wordwall was 86.03. From the Sig (2-Tailed) value, the result was 0.000 which means it is lower than $\alpha = 0.05$. So H_0 is rejected and H_i is accepted, descriptively it can be concluded that there is a difference in the average statistical value between before and after applying the TPS model with the help of canva and wordwall.

Observations were also conducted to determine students' collaborative activities before and after implementing the TPS model with the help of Canva and a word wall. The observations showed that students' collaboration skills improved. The average for each indicator was 1. skills collaboration, namely:

Table 4 Comparison Profile Skills Collaboration Based on 9 Indicators

Aspect	Before	After
Ability contribute	58,33	93,33
Manage time	53,33	72,50
Solve problem	48,33	71,57
Cooperate	49,17	70,83
Do research	33,33	73,33
Maintaining work quality	58,33	90,83
Stay focus	57,50	74,27
Show readiness	57,50	80,83
Evaluate performance group	56,67	72,50

The image illustrates the before and after implementation of the TPS model with the help of Canva and a word wall. None of the nine indicators experienced a decrease; each indicator showed an increase. To determine the effectiveness of the TPS model with the help of Canva and a word wall, an N-Gain analysis was conducted, which calculated the students' pretest and posttest. The following are the results of the N-Gain calculation:

Table 5 Comparison Profile Skills Collaboration Based on 9 Indicators

Results	N-Gain	Category	Level of Effectiveness
Pretest and Posttest	0.73	Tall	Quite Effective

Based on the results presented in Table 4, it can be concluded that there was an increase in students' collaborative skills from pretest to posttest after implementing the TPS model using Canva and Wordwall. The N-Gain value of 0.73 is considered high, indicating that the learning intervention was significantly effective in improving students' collaborative skills.

Discussion

From the research conducted through interviews, observations, and documentation on third grade students at elementary school in West Bandung Regency, initial findings revealed that students experienced difficulty collaborating with peers due to social comfort zones, preferring to work only with close friends. Before using the learning model, students demonstrated passive behavior and limited classroom engagement. Collaboration skills are essential for students in the current era of technological and informational development. Through collaboration skills, students can develop teamwork abilities, active listening to peers' opinions, knowledge sharing, and building mutually beneficial relationships (Barokah & Untung, 2024).

To activate collaboration skills, researchers applied the TPS learning model through three stages systematic . Observation results during The implementation of the TPS model using Canva and wordwall showed a significant increase in students' collaboration skills. In the indicators First ability contribute student Already start visible , where they discuss For finish problems given by the teacher. On indicators This TPS syntax think model is used . Through the selection process appropriate theory , application of data analysis, and provision of practically usable feedback contribute to the development of a deeper understanding of active listening skills (Huang & Ochoa, 2025).

The second indicator of time management is seen in how the group is able to complete the task within the allotted time. This effectiveness indicates that students are aware of how to utilize their time optimally. The scores above show that students can complete the task on time. According to Claessens (Bargmann & Kauffeld, 2023), time management is a form of directed behavior aimed at optimizing the efficient use of time in completing activities oriented towards achieving goals. This concept includes the actions of setting goals, developing work plans, setting priorities, and monitoring the implementation of planned activities.

third indicator solve problem can done with okay , where student can discuss with member his group with Good . According to the OECD (He et al., 2023), collaborative problem-solving skills can be understood as a person's competence in participating actively and effectively in a collaborative process with other individuals, with the aim of solving a problem through the exchange of knowledge, skills, and joint contributions to reach an agreed solution. The fourth indicator that is work together , students start show ability adapt themselves with the various characters of group members and help each other to complete shared responsibilities. This seen when discuss student shoulder to shoulder For finish the assigned task . On the indicator all four TPS syntax pair models are used .

The fifth indicator is to do research , some student Already show initiative in independently (Rodriguez-Salvador & Castillo-Valdez, 2023) seek additional sources of information through reading books. This indicates an awareness of enriching the group's understanding with relevant data and references, which in turn improves the quality of the work. According to Campo et al., students rate various activities such as debates, projects, real-world practice, research, cooperative learning, and case studies as the most influential in helping them develop critical thinking skills.

The sixth indicator is maintaining quality work , students start do problem with as good as Possible until they can finish it . It looks from score in indicator where students can be serious when working on assignments together with their group. Indicators to seven student still focus in finish problem although in different groups . Focus This Supported by a clear division of roles and mutual reminders among team members to stay on track. Through shared activities, they are able

to maintain concentration on the task at hand and are less distracted by external factors (Xiaojun et al., 2022).

Indicator eighth student Already show readiness when finish problem with member the group . And indicators final that is evaluate performance group Already increases . Every group do evaluation to results work and work processes that have been carried out ongoing through presentation Where students who are presentation will assessed by other groups with method give Question . The TPS share syntax is applied to the indicator This .

After implementing the TPS model with the help of Canva and a word wall, students' enthusiasm during learning was very high. The implementation of the TPS model is effective. in increase skills collaboration student school basic . They don't only accept Not only material , but also new experiences in technology. Furthermore, using the TPS model with the help of IT media can improve students' collaboration skills. As research conducted by Samaila et al., (2024) obtained The implementation of the TPS model combined with the flipped classroom (IT media) is able to improve the quality of the learning process in the classroom and encourage students to interact more actively, both with their peers and with the teacher. The TPS model also contributes to increasing the effectiveness of discussions in the classroom, because students have previously thought about the material they will present to their peers, and this approach also encourages students' enthusiasm to be actively involved in problem-solving activities and helps them provide better quality responses (Alsmadi et al., 2023).

The results of this study are in line with Vygotsky's Zone of Proximal Development (ZPD) theory. According to Vygotsky's theory, a child's learning process begins in the ZPD, or zone of proximal development. In this zone, a child experiences development where he or she is not yet able to complete a task or problem independently, but can do so with the help of others, such as teachers, peers, or adults. So in other words, the ZPD is a bridge for children between what they have achieved independently and what they have achieved with assistance. The ZPD describes a student's potential to solve a problem with the help of adults or through collaboration with friends who have higher abilities. This concept shows the developmental stages that students can achieve through the learning process or educational intervention (Ni, 2022).

CONCLUSION

The implementation of the TPS model proved highly effective in improving elementary school students' collaboration skills. Through systematic thinking, discussing, and sharing stages, students demonstrated significant development in working together, respecting opinions, and taking responsibility in groups. The use of Canva and Wordwall media contributed substantially to creating an active and enjoyable learning environment. Research results showed dramatic collaboration skills increase with N-Gain of 0.73, indicating high effectiveness across all nine collaboration indicators.

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