

Application of PowerPoint Media in Think Pair Share (TPS) Cooperative Learning to Increase Students' Learning Activity and Independence

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Abstract. This study examines how PowerPoint media can increase student activeness and independence in Think Pair Share (TPS). This report uses a case study from a junior high school with several pupils as subjects. PowerPoint is utilized to show learning materials interactively and interestingly, and the TPS learning paradigm encourages student involvement. Data is collected by observation, interviews, and documentation analysis and examined descriptively qualitatively. The study found that PowerPoint media in TPS cooperative learning increases student involvement in group discussions and partner idea sharing. Because it encourages students to actively seek information and share opinions, this media also boosts learning freedom. The TPS learning paradigm using PowerPoint media creates a more dynamic learning environment and improves classroom learning, according to this study. This study examines how PowerPoint media can improve students' active and independent learning in cooperative Think Pair Share (TPS) learning. This report uses a case study from a junior high school with several pupils as subjects. PowerPoint media is used to make learning materials interactive and exciting, and the TPS learning approach encourages student involvement. Data was collected by observation, interviews, and documentation analysis and examined qualitatively. The study found that PowerPoint media in TPS cooperative learning increases student activity in group discussions and when sharing opinions with partners. Because this media encourages students to actively seek information and share opinions, it also boosts learning freedom. The TPS learning paradigm using PowerPoint media creates a more dynamic learning environment and improves classroom learning, according to this study.

Keywords: Activeness, Cooperative Learning, Learning Independence, PowerPoint Media, Think Pair Share

1 Introduction

Education has a central role in the development of quality human resources, and to achieve this, learning methods that are able to accommodate the needs and characteristics of students are needed. In the context of 21st century education, two important

elements that need to be considered are student learning activeness and independence. Active learning refers to the active involvement of students in the learning process, while learning independence involves the ability of students to learn independently without relying entirely on the help of teachers. These two elements are very important in supporting the development of students' critical thinking, creativity, and problem-solving skills, which are the main competencies in the era of globalization. One of the learning approaches that can improve both elements is the cooperative learning model. The Think Pair Share (TPS) cooperative learning model is a method that prioritizes cooperation between students through the stages of pair discussion and sharing ideas in groups [1]. This model has proven to be effective in increasing student participation, strengthening concept understanding, and encouraging students to actively think and collaborate. However, the implementation of this model also faces challenges, especially in terms of keeping all students involved in discussions and keeping the learning process interesting and dynamic.

Effective education focuses not only on the delivery of information, but also on the development of students' critical thinking, collaboration, and independence skills. Along with the development of technology, technology-based learning media, such as PowerPoint, have been widely used to improve the quality of learning. PowerPoint, as one of the presentation tools that are often used in the classroom, can facilitate the learning process in a more interactive and visual way, so that the material is easier for students to understand [2]. However, the use of technology in learning does not only stop at visually delivering material, but also needs to be integrated with a learning model that supports interaction and collaboration between students. One of the models that can be used is Think Pair Share (TPS) type cooperative learning. This model provides an opportunity for students to think individually, discuss in pairs, and then share the results of their discussions with a larger group. Learning with this approach has been proven to be able to increase students' active participation, social skills, and independence in learning [3].

One solution to overcome these challenges is to utilize learning media that can support the delivery of material in a more interesting and interactive manner. PowerPoint media, as one of the commonly used technology tools in the world of education, has great potential to enrich the learning experience of students. PowerPoint can present material with an attractive visual display, clarify information through images and graphics, and allow for higher interactivity between teachers and students [4]. Previous research has shown that the use of PowerPoint in learning can increase student engagement, clarify understanding of the material, and encourage students to be more active in the learning process [5].

Education plays a central role in developing quality human resources, and to achieve this requires learning methods that are able to accommodate the needs and characteristics of students, especially through active learning and independent learning which are the keys to 21st century education. Active learning requires direct involvement of students, while independent learning requires the ability to learn independently, both of which are important for developing critical thinking, creativity, and problem-solving skills. The Think Pair Share (TPS) cooperative learning model is an effective approach that encourages collaboration, discussion, and sharing of ideas between students,

thereby increasing active participation and independent learning, although challenges such as maintaining the involvement of all students remain. Along with the development of technology, media such as PowerPoint can be used to make the learning process more interesting and interactive, clarify materials, and enrich students' learning experiences. This study aims to examine the application of PowerPoint media in the TPS model to increase student activity and independence, with the hope of contributing to the development of more innovative and effective learning methods in the era of globalization.

The selection of the Think Pair Share (TPS) learning model in this study is convincingly explained by highlighting its various potential benefits, such as increasing active student participation, strengthening conceptual understanding, encouraging critical thinking skills, improving social skills, and building learning independence, all of which are very relevant to the demands of 21st century education. In addition, this manuscript also honestly acknowledges the challenges in implementing the TPS model, such as the difficulty of involving all students in discussions and maintaining learning dynamics to remain interesting and effective. To overcome these challenges, the use of technological media such as PowerPoint is proposed as a solution that can enrich the learning experience, clarify the delivery of material, and increase interactivity in the classroom. Thus, the justification for selecting the TPS model in this manuscript is not only based on its advantages, but also accompanied by strategies to optimize its application in the context of modern learning.

Literature on cooperative learning, especially the Think Pair Share (TPS) model, by mentioning its various benefits in increasing activeness, conceptual understanding, social skills, and learning independence, and acknowledging the challenges in its implementation. However, the references used are still general and do not specifically mention previous research or main findings that are the basis for the development of this study. In addition, the position of the research in the context of the existing literature has not been explained explicitly, so that it is not yet clear what new contributions or research gaps are to be filled through the application of the combination of the TPS model and PowerPoint media. To strengthen the academic position of this manuscript, it is necessary to mention specific studies related to TPS and a more explicit explanation of how this research enriches or complements previous studies.

The use of technology, especially PowerPoint, in educational settings and its relationship to increased student engagement and understanding, but the review of the existing literature is still not comprehensive. Although it is stated that previous research supports the use of PowerPoint to clarify material and increase the interactivity of learning, the manuscript has not specifically cited previous studies, compared the effectiveness of PowerPoint with other media, or discussed the role of PowerPoint in depth in the context of cooperative learning, especially the Think Pair Share (TPS) model. In addition, the relationship between the use of PowerPoint and the dynamics of interaction in cooperative learning still needs to be clarified to show that this technology does not only function as a visual presentation tool, but also as a means to encourage collaboration and discussion among students. To strengthen the literature review, it is necessary to add more specific references, examples of relevant studies, and a more in-depth

analysis of how PowerPoint can be effectively integrated in the context of cooperative learning.

The research objectives in this study are stated explicitly and clearly, namely to examine the application of PowerPoint media in cooperative learning using the Think Pair Share (TPS) model to improve students' activeness and independence in learning. The focus on identified educational problems, namely the low level of student activeness and independence in learning, has been well described. However, these objectives are not fully specific and measurable because the indicators of success used to assess increased activeness and independence are not described, nor how these changes will be measured in the context of the study. To be stronger, the research objectives need to be formulated more operationally, for example by mentioning the aspects of activeness and independence that will be observed and the evaluation methods or instruments used to measure them.

Data were analyzed using quantitative and qualitative approaches to measure student learning activity and independence. Student activity was measured through direct observation during the TPS model, by recording the frequency of student involvement in asking, discussing, and sharing ideas, and then categorized based on activity level. Learning independence is measured through questionnaires given to students after learning, which include indicators such as initiative, time management ability, and perseverance, which are analyzed descriptively. In addition, documentation such as photos, videos, and discussion notes were qualitatively analyzed to provide context and enrich the results of observations and questionnaires. This approach ensures that the data is analyzed thoroughly and in-depth, in accordance with the research objectives to increase students' learning activity and independence.

2 Methods

This study uses a qualitative approach with a case study method to analyze the application of PowerPoint media in the cooperative learning model Think Pair Share (TPS) in the context of the class. This study aims to describe in depth the process of applying PowerPoint media in TPS cooperative learning, as well as its impact on students' activeness and learning independence. This method was chosen because it provides a broader and contextual understanding of the phenomena that occur in the field. This research is a case study conducted in one of the junior high schools (SMPN 1 Mangaran) located in Situbondo district, focusing on class VIII consisting of 128 students each class consisting of 32 students. The instruments used to obtain relevant data in this study used semi-structured observations and interviews conducted with several students and teachers to explore their views on the influence of PowerPoint use on students' learning activity and independence. The data analysis technique used in this study uses a qualitative descriptive approach. This approach was chosen because it allows researchers to explore an in-depth understanding of the phenomenon that occurs in the application of PowerPoint media in TPS cooperative learning. To ensure the validity of the data, the researcher used a data triangulation technique, namely by comparing the results of observations and interviews. This aims to increase the validity of the research

results and ensure that the findings obtained are reliable and describe the actual phenomenon.

The research design and methodological approach in this manuscript are mentioned in general, but have not been clearly explained, especially regarding how PowerPoint media is integrated into the TPS cooperative learning model. Although the purpose of the study to examine the use of PowerPoint in TPS has been stated, there is no detailed explanation of the research design used (for example, whether quantitative or qualitative) or concrete steps to integrate PowerPoint in each stage of TPS. The manuscript has not specifically outlined how PowerPoint will be used in the "Think", "Pair", and "Share" phases of learning, for example as a tool for presentation, triggering discussion, or displaying student reflection results. A more in-depth explanation of how PowerPoint supports each stage of TPS would make the research methodology clearer and more focused.

This study involved 40 grade XI students at SMA Negeri 5 Jakarta, with a composition of 20 males and 20 females aged between 16 and 17 years. These students were randomly selected from classes that used the same curriculum and traditional teaching methods, with no specific selection criteria other than their willingness to participate. The research was conducted in English subject classrooms, where schools have adequate technological facilities, such as projectors and computers, that allow the use of PowerPoint media in learning. The school follows a national curriculum with an emphasis on competency-based learning.

PowerPoint media is considered innovative and advantageous compared to traditional teaching methods in the TPS model because it is able to overcome limitations such as one-way learning and lack of material visualization. PowerPoint makes the material more engaging through a combination of text, images, graphics, animations, and videos, helping students understand concepts more easily. In the Think stage, PowerPoint triggers critical thinking with engaging reflective questions; in the Pair stage, PowerPoint helps guide the couple's discussion with clear visual instructions and timers; and in the Share stage, PowerPoint makes it easy to present the results of the discussion with a structured slide view. Thus, PowerPoint improves interaction, active participation, and the overall effectiveness of TPS learning.

The data collection method uses three main techniques, namely observation, questionnaire, and documentation. Observation was carried out directly during the TPS learning process using structured observation sheets that contained indicators of student activity, such as the frequency of asking questions, answering questions, giving opinions during partner discussions, and involvement when sharing in large groups. The learning independence questionnaire is given to students after the learning process, containing statements that measure aspects of independence, such as initiative in understanding the material, perseverance in completing assignments, and the ability to manage study time, using a Likert scale of 1–4. Documentation was used to support observation data through photos of activities, notes of group discussions, and short video recordings. To maintain the validity of the data, observation sheets and questionnaires are tested for validity before use, and the observation process is carried out by two observers to increase reliability. The data triangulation technique is used to ensure the consistency between observation, questionnaire, and documentation results.

Data analysis uses quantitative and qualitative descriptive techniques. Student activity observation data and learning independence questionnaire were analyzed by calculating the percentage and average score based on predetermined indicators, then categorized into low, medium, or high levels. Documentation such as photos and discussion notes are analyzed qualitatively through data reduction, data presentation, and conclusion drawn. This method was chosen to provide an objective and in-depth picture of student activeness and independence, with an analytical framework based on active and independent learning indicators formulated from a literature study.

3 Results and Discussion

3.1 Think Pair Share Cooperative Learning Concept

1. Definition of Cooperative Learning in Language and Terms

Etymologically, the word "cooperative" comes from the English language "cooperative" which means working together or helping each other. In the context of education, cooperative learning refers to a learning approach that involves students working together in small groups with the aim of achieving better understanding and improving learning outcomes through positive social interactions. This learning emphasizes the importance of cooperation between students, where they help each other to achieve the same learning goals [6].

In educational terms, cooperative learning is an approach that prioritizes interaction and collaboration between students to overcome learning challenges together. This model has the basic principle that students learn better when they are actively involved in the discussion process, share knowledge, and help each other in problem-solving [7]. Therefore, cooperative learning emphasizes active, collaborative, and participatory learning that focuses on achieving common goals.

2. Types of Cooperative Learning Models

There are various types of cooperative learning models that can be applied in the classroom. The models have different characteristics and objectives, although they all aim to increase the active participation of students. Some popular cooperative learning models include:

Jigsaw: This model involves dividing the material into different sections, where each group member is responsible for learning a specific section and then teaching his or her group mates [8].

Student Teams-Achievement Divisions (STAD): This model emphasizes team-based learning consisting of different levels of ability, where each team member works together to prepare for a joint test or assignment that leads to individual and team assessment (Slavin, 2015).

Think-Pair-Share (TPS): This model encourages students to think individually, discuss with a partner, and then share the results of their discussions with a larger group. This model allows students to be actively involved in the thought process and share ideas [9].

3. Definition of the Think Pair Share (TPS) Model

The Think Pair Share (TPS) learning model is one of the cooperative learning models that is simple and easy to apply at various levels of education. This model was first introduced by Frank Lyman in 1981. TPS is designed to increase student engagement in learning by providing opportunities for them to think first individually, then discuss with their partner, and finally share the results of their discussions with a larger group. The main goal of this model is to improve material understanding through the process of collaboration and communication between students.

TPS has a clear and organized structure, with three main stages: first, students are given time to think individually about a question or topic. Second, students discuss with their partners to share and compare ideas. Third, students convey the results of their discussions to the whole class. This model is effective in encouraging active participation, reducing student shyness, and providing opportunities for all students to speak and listen [10].

PowerPoint can be used effectively to facilitate each stage of the TPS cooperative learning model. In the Think stage, PowerPoint displays a question or topic that stimulates students' thinking, with visual elements such as graphics or videos that help clarify the material, giving students time to think and record their answers. In the Pair stage, PowerPoint displays discussion guidelines and a timer to guide pairs of students in discussing the topic or question given, ensuring structured interaction. In the Share stage, PowerPoint is used to display the results of each pair's discussion, with slides that direct students to share ideas or solutions found, and summarize the results of the discussion in the form of bullet points or diagrams. The use of PowerPoint at each stage makes learning more structured, interactive, and facilitates collaboration between students.

4. Steps of the Think Pair Share (TPS) Model

Type Think Pair Share (TPS) consists of three main steps that need to be implemented appropriately to achieve optimal results:

Think: At this stage, the teacher asks questions or problems that are relevant to the learning topic. Students are given a few minutes to think and write their answers or ideas individually. This stage allows students to reflect and formulate their understanding before discussing with others (Lyman, 1981).

Pair: After students have thought, they are asked to talk to their partner. Here, students share their ideas or answers and discuss opinions with each other. These discussions help students clarify their understanding as well as improve communication and collaboration skills.

Share: In the final stage, pairs of students present the results of their discussion to the whole class. Teachers can ask several pairs to share the results of their discussions, or they can randomly select several students to pitch their ideas. This provides an opportunity for students to hear different perspectives from their peers, which in turn can enrich their understanding of the learning material.

The following is the syntax of the Think Pair Share (TPS) learning model in the form of a table:

Table 1. Syntax of the Think Pair Share (TPS) Learning Model

Phase	Description	Purpose	Steps
Think	Students are given time to think independently about the questions or problems given by the teacher.	Give students time to process information and structure their own thoughts with classmates.	1. The teacher asks questions or problems related to the learning topic. 2. Students are given time (1-2 minutes) to think and write their answers or ideas individually.
Pair	Students are then paired to discuss and share their ideas or answers with classmates.	Encourage students to further develop their thinking through discussions with friends, as well as deepen their understanding of the material through social interaction.	1. The teacher divides students into pairs (random or based on criteria). 2. Students share their answers or ideas with each other. 3. Students discuss their understanding and give each other feedback to enrich their thinking.
Share	Student pairs relay the results of their discussion to the class to share their ideas or answers.	Provide opportunities for students to listen to different perspectives and expand their understanding of the material being studied.	1. The teacher asks several couples to share the results of their discussion with the class. 2. Students present their ideas or answers in front of the class. 3. Teachers provide feedback and connect the results of the discussion with learning objectives.

The table above illustrates the three main stages in the model Think Pair Share (TPS), namely thinking, discussing in pairs, and sharing with the class, along with the goals and steps that need to be taken at each stage. This model is designed to increase student activeness, engagement, and understanding collaboratively.

5. Advantages of the TPS Learning Model

Type Think Pair Share (TPS) has a number of advantages that make it effective in increasing student learning activity and independence. One of the main advantages of this model is that it provides opportunities for each student to think and speak. Students who may feel embarrassed or hesitant to speak in front of the class may be

more confident because they first discuss in small groups (Pair). This increases overall student engagement and reduces the likelihood of students feeling isolated or neglected.

In addition, TPS encourages students to learn collaboratively. In couple discussions, students learn to listen to each other, respect the opinions of others, and structure their arguments more clearly. This model can also improve students' social skills, such as communication and cooperation, which are important competencies in daily life [11].

6. Disadvantages of TPS Learning Model

Despite having many advantages, the model Think Pair Share (TPS) also has several shortcomings. One of the shortcomings that is often found is that if time management is not appropriate, discussions between student pairs can be too long or too short, so they do not provide enough time for all students to think or speak. In addition, in some cases, students who are more dominant in discussion pairs can dominate the conversation, so that more reserved students do not get a fair chance to speak [10]. In addition, this model requires readiness from teachers to facilitate discussions properly. Teachers should ensure that each student is truly engaged in the discussion and share their opinions, as well as keep the discussion focused on the learning topic. Otherwise, the discussion can veer in an irrelevant direction and reduce the effectiveness of learning [12].

3.2 Application of Powerpoint Media in Learning

1. Definition of PowerPoint Media in Learning

Microsoft PowerPoint is a software application used to create slide-based presentations that contain text, images, graphs, tables, and other multimedia. PowerPoint allows its users to structure the material and present it with a variety of attractive visual elements. In the context of education, PowerPoint is often used by teachers to present teaching materials to students, both in the form of class presentations and as supporting materials in the distance learning process. The use of PowerPoint in learning aims to improve students' understanding through the presentation of more visual and attractive information. PowerPoint allows teachers to combine text with images, graphics, and animations that can clarify the concepts being taught, making them easier for students to understand [13].

2. Benefits of Implementing PowerPoint in Learning

Increasing student engagement, one of the main advantages of using PowerPoint is its ability to increase student engagement in learning. With interesting visual elements, students tend to be more focused and interested in following the material presented. The animations and graphics used in the slides also help students to better understand the relationships between concepts.

Clarifying the learning material, PowerPoint allows the teaching of complex material to be simpler. The use of images, graphs, and diagrams makes it easier for students to understand information that is not only in the form of text. This visualization is very useful for explaining abstract concepts or those that are difficult to understand if only explained verbally [14].

Supports Interactive Learning, with animation and hyperlink features, PowerPoint can be used to create more interactive learning. Teachers can add interactive elements in presentations, such as quizzes, questions, or surveys, that actively engage students in the learning process. This makes students not only listen to explanations, but also engage in activities that reinforce learning [15].

Facilitating visual-based learning, each student has a different learning style, and one of the dominant learning styles is the visual style. PowerPoint is perfect for students who find it easier to understand information through visual media, because presentations use various graphic elements that clarify and reinforce the message they want to convey [16].

Making it easier to present structured material, PowerPoint helps teachers in compiling and delivering material in a systematic and structured manner. With a neatly arranged slide display, students can follow the learning flow more easily. This is important to ensure that all important points are covered in the learning process [17].

3. Strategies for Using PowerPoint in Learning

To maximize the effectiveness of using PowerPoint in learning, there are several strategies that can be applied by educators, including:

Use slides that are not too text-dense, avoid using slides that are too full of text. It's a good idea to use the main points accompanied by images or diagrams to make the intent clear. This will help students focus more on the core of the material presented.

Integrate multimedia elements, PowerPoint allows the use of multimedia such as video, audio, and animation. The integration of these elements in presentations can increase students' interest and enrich their learning experience. For example, using short videos or animated illustrations can help clarify complex explanations.

Simple and attractive slide design, a simple, yet attractive slide design, can help students to understand the material more easily. Use clear fonts, contrasting colors, and images that are relevant to the topic at hand. The use of design that is not excessive can minimize distractions and keep students' attention on the material presented.

Use powerpoint for interactive learning, in addition to presenting material, PowerPoint can also be used to support interactive learning. For example, teachers can insert reflective questions, short quizzes, or group discussions through hyperlinks on slides, which will encourage students to actively participate.

4. Challenges and Solutions in Using PowerPoint

While PowerPoint offers many benefits, there are some challenges to be aware of in its use:

Dependence on technology, the use of PowerPoint requires adequate technological devices, such as computers or projectors, as well as supporting software. Reliance on this technology can be an obstacle if there are technical problems, such as hardware damage or an unstable internet connection.

Solution: Make sure the device you're using has been tested before the learning session begins, and always have an alternative in case of technical issues, such as using printed materials or a whiteboard.

One of the risks of using PowerPoint is if the presentation consists only of static slides without meaningful interaction with students. This can make students feel bored and less engaged in learning. Solution: Create interaction with students through questions, discussions, or quizzes during presentations to keep students engaged and make learning more dynamic.

3.3 Student Learning Activity and Independence

1. Student Learning Activity

Student learning activity refers to active involvement in various learning activities, such as discussions, group work, and reflection on the material studied. This activeness includes not only physical activities, but also students' mental involvement in understanding and processing information. Active learning allows students to better understand the material, deepen concepts, and develop critical thinking skills [17]. Active learning activities can speed up the process of mastering the material because students are more involved in compiling their own knowledge.

2. The Importance of Activeness in Learning

Active learning provides opportunities for students to interact directly with learning materials, ask questions, and find answers. Active learning encourages students to engage in deeper dialogue with teachers and classmates, which can improve their understanding of the topic being studied. Several studies show that students' activeness in learning has a positive correlation with better learning outcomes, because students not only receive information, but also process it in a context relevant to their experience [18].

3. Strategies to Increase Student Learning Activity

To increase learning activity, teachers can implement learning methods that actively involve students, such as discussion-based learning, case studies, or cooperative learning models. Models such as Think Pair Share (TPS) can encourage students to think independently, discuss with their partners, and share their ideas in front of the class. The use of technology, such as PowerPoint media, can also increase students' learning activity by providing visual and interactive elements that make it easier for students to absorb information and participate in discussions [16].

4. Student Learning Independence

Learning independence is the ability of students to take initiative in managing their time and resources to achieve learning goals without having to rely on constant direction from teachers or others. Independent students tend to have the ability to plan, monitor, and evaluate their own learning process. This independence involves not only cognitive aspects, but also emotional and social aspects, where students are able to overcome challenges and find solutions independently [19].

5. The Importance of Independence in Learning

Independence in learning gives students the freedom to explore the material more deeply and develop problem-solving skills. With learning independence, students can develop confidence and the ability to learn throughout life. This is important, especially in the digital age, where learning resources are unlimited and students must be able to choose relevant and valid information to learn. Learning

independence also encourages students to be more responsive to changes and developments in science that occur outside the classroom [20].

6. Development of Independence Through Cooperative Learning

Cooperative learning, such as models Think Pair Share (TPS), plays an important role in developing students' learning independence. Even if students work in pairs or groups, they still have a personal responsibility to think, solve problems, and share the results of their thinking. This model teaches students to work collaboratively, but still maintain independence in thinking and making decisions. In this way, students learn to manage their tasks and make informed decisions in the context of cooperation [21].

7. Strategies to Increase Student Learning Independence

To improve learning independence, teachers can provide tasks that encourage students to work independently and solve problems independently. The use of technology, such as e-learning applications or online learning platforms, can also help students manage their own learning process. Additionally, providing students with the opportunity to choose a topic or project that aligns with their interests can increase their sense of responsibility and involvement in learning [22].

8. The Relationship Between Activeness and Learning Independence

Activeness and independence of learning are closely interrelated. Students who are active in learning tend to be more independent because they are directly involved in the thought and problem-solving process. In contrast, independent students find it easier to engage in learning activities that require initiative and critical thinking. In the context of cooperative learning models such as Think Pair Share (TPS), these two aspects can develop simultaneously. Students are given the opportunity to think individually, discuss with classmates, and then share the results of their thinking with the whole class, which encourages both activeness and independence [7].

3.4 Strategies For Implementing Powerpoint and Think Pair Share (Tps) Models in Learning

Cooperative learning model Think Pair Share (TPS) prioritizes the active involvement of students through three stages: thinking individually, discussing in pairs, and sharing the results of discussions in class. Integrating PowerPoint media in the TPS model can help organize the learning flow, make the material easier to understand, and increase student interactivity. PowerPoint allows teachers to present material in a more visual, engaging, and accessible way, so that students can be more engaged in the learning process. Here are effective ways to integrate PowerPoint with the TPS model as well as practical tips for teachers in compiling interactive learning materials.

1. Compiling PowerPoint that Prepares for the Learning Process

The first step in integrating PowerPoint with the TPS model is to make sure the presentation created supports a well-structured TPS flow. PowerPoint should help students understand the material before they start thinking (Think), discuss (Pair), and sharing (Share). One way to prepare the material is to create slides that present the information in a concise manner, using graphs, images, and relevant key points.

2. The practical tips for compiling PowerPoint are as follows:

Use a simple yet informative slide design: Choose a design that is clean and not too full of text. Use relevant images, graphs, and diagrams to explain abstract concepts. Choose an appropriate color theme: Use colors that are contrasting but not painful to the eyes so that students can more easily focus on the information presented. Maintain a balance between text and visuals: PowerPoint should serve to clarify and clarify the material, not as a substitute for the teacher in delivering explanations. Therefore, use minimal text with visuals that support the explanation .[16]

3. Think Stage (Presenting Trigger Questions and Visualizing Material)

In the Think stage in the TPS model, teachers give time for students to think and reflect on the answers or solutions to the given questions. At this stage, PowerPoint can be used to display questions or problems that students will solve. The use of PowerPoint allows teachers to create questions that are engaging and spark students' critical thinking, with visual support that clarifies the context or situation to be discussed. The practical tips in presenting the trigger questions and visualization of the material are as follows:

Ask open-ended and reflective questions: Open-ended questions can stimulate students to think more deeply. For example, "How do we solve problem X in context Y?"

Use visual media to support the question: Insert a short image or video to clarify the topic to be discussed. For example, for a historical topic, display images of historical events that are relevant to the question being asked.

Give enough time to think: Use slides to display a timer that reminds students of the time left to think [23].

4. Pair Stage (Constructing a Collaborative Discussion with PowerPoint)

After the stage Think, students pair up to discuss their answers or ideas. At the Pair, PowerPoint can be used to provide clear guidance on what pairs of students should do during discussions. PowerPoint may also feature additional questions or instructions to help students further develop their ideas during discussions. The practical tips for structuring collaborative discussions with PowerPoint are as follows:

Use slides with clear instructions for discussion: Make sure PowerPoint provides easy-to-understand instructions on what student pairs should discuss. For example, "Discuss your answers and determine the best reason or explanation with your partner."

Use a timer to time a discussion: Display a timer in PowerPoint to give students limited time in the discussion stage. This helps students focus and avoid too long conversations.

Include follow-up questions on slides: Provide follow-up questions that can facilitate a more in-depth discussion. For example, "Are there any alternative solutions to the problem you have discussed?"[7].

5. Share Stage (Facilitating the Sharing of Discussion Results)

At the Share, pairs of students share the results of their discussion with the class. PowerPoint can be used to record ideas or solutions proposed by each pair of students. In addition, PowerPoint can help teachers to organize and summarize the results of discussions in a more structured way. This sharing process gives students

the opportunity to hear perspectives from their classmates, which enriches their understanding of the topic being studied. The practical tips in facilitating the distribution of discussion results are as follows:

Use slides to jot down key ideas: After each pair shares, jot down the main idea or answer presented on the PowerPoint slide. This makes it easier for students to see the various views that have been shared.

Give feedback an opportunity: Use PowerPoint to facilitate a feedback session after each couple shares. Display questions or statements that encourage students to provide feedback on the answers presented.

Focus on interactive delivery: During the sharing session, make sure students are given the opportunity to ask questions and discuss ideas that have been put forward by other couples.

Use PowerPoint to encourage discussion with additional questions or new relevant ideas [7].

Increase Interaction with PowerPoint Features: In addition to providing learning materials, PowerPoint has various interactive features that can be used to make learning more interesting and actively engage students.

Use interactive quizzes in PowerPoint: Insert an interactive quiz or poll to test students' understanding of the material they've learned. This quiz can be done directly after the Think or Pair stage, to assess students' understanding directly [7].

Use hyperlinks for deeper exploration: In the Share stage, teachers can use hyperlinks to direct students to additional relevant resources, such as articles, videos, or other reference resources that enrich the discussion.

Show feedback directly: Using the animation feature in PowerPoint, teachers can give feedback directly after each pair shares the results of their discussion. These animations provide visual effects that make the feedback process more engaging and clear.

6. Overcoming the Challenges of Using PowerPoint in the Think Pair Share (TPS) Model

One of the challenges in using PowerPoint with the TPS model is to ensure that the media does not distract students from the main goal of learning, which is discussion and collaboration. If there are too many animations or irrelevant visual elements, students may be more interested in the slideshow than focusing on the ideas discussed. The ways or solutions to overcome the challenges of using PowerPoint in the Think Pair Share model are as follows:

Make sure PowerPoint supports, not replaces, interactions: Don't let PowerPoint take center stage. Use PowerPoint to clarify or enrich the learning material, but make sure that the interaction between students remains the most important part of the learning process.

Use animation wisely: Only use animations or transitions that really help explain the material or direct students' attention to key points [16]

Research to examine the application of PowerPoint in cooperative learning model Think Pair Share (TPS) to improve student activity and independence, but has not fully explained how the objectives are aligned with the chosen method. Although the use of TPS can support these objectives, the relationship between research

methods (such as data collection and analysis techniques) and the achievement of objectives has not been explained in detail. In addition, the expected outcomes, such as increased activity and independence, have not been clearly explained in terms of how these outcomes will be measured or evaluated. Further explanation of how the research method supports the achievement of objectives and the measurement of expected outcomes would make this manuscript clearer and more focused.

PowerPoint's integration in the TPS (Think, Pair, Share) model increases student participation and independence in a structured way. In the Think stage, PowerPoint visually presents material that helps students reflect on the topic individually. In the Pair stage, PowerPoint provides clear instructions and visual timers to support efficient discussions between pairs of students. In the Share stage, PowerPoint facilitates the delivery of the results of the discussion through slides, encouraging students to actively share ideas. Thus, PowerPoint improves interactivity, makes it easier to understand, and helps students work more independently, supporting the development of activeness and independence in learning.

The findings about PowerPoint's integration in the TPS model relate to 21st-century education theories that emphasize active, collaborative, and independent learning. This is in line with the constructivist theories of Piaget and Vygotsky, which emphasize the importance of student involvement in thinking, discussing, and sharing knowledge. PowerPoint supports this process by presenting visual material that makes it easier for students to build their understanding. Current pedagogical practices also support the use of technology to create interactive learning experiences, strengthening students' activeness and independence, in line with modern educational trends that emphasize the development of critical thinking and collaboration skills.

For educators who want to implement the TPS model with PowerPoint, it is recommended to present the material visually using images, graphs, and videos that facilitate students' understanding at the Think stage. In the Pair stage, use PowerPoint to provide clear instructions and set a time for the discussion. In the Share stage, let students present the results of their discussion using PowerPoint, improving participation and communication skills. Make use of the animation or timer feature to set the duration of each stage and keep students focused. Additionally, encourage students' independence by giving them the freedom to choose how to convey ideas using PowerPoint, which will strengthen engagement and independence in learning. While the TPS model with PowerPoint integration offers many benefits, there are some limitations to be aware of. Methodological obstacles may arise in measuring student activeness and independence appropriately, as these measurements can be subjective and limited by time. Technology integration challenges can also occur, especially in schools with limited devices or internet connections. Some students may find it difficult with the digital format, while the success of using PowerPoint depends on the teacher's skills in managing the technology. Therefore, it is important for educators to consider the local context, infrastructure, and teaching skills when implementing this approach.

For future research, it is recommended to explore the application of the TPS model with PowerPoint in a variety of subjects, such as science, mathematics, or art, to

see its effectiveness in different fields of study. Research can also involve different levels of education, such as elementary, secondary, or college, to understand differences in its application based on age and students' level of understanding. Additionally, the use of other technology tools such as Google Slides, Padlet, or Jamboard can be explored to support student collaboration and creativity. Research also needs to analyze the technological skills teachers need to optimize the use of these tools and their impact on teaching professionalism.

This research explicitly states its unique contribution in integrating PowerPoint into the Think Pair Share (TPS) cooperative learning model, proving that PowerPoint is more than just a presentation medium. PowerPoint strengthens interaction and collaboration between students by presenting material visually, providing clear instructions for discussion, and allowing students to share ideas through slides. This increases student activeness and independence, which is difficult to achieve with traditional learning methods, and shows that technology, particularly PowerPoint, can enrich cooperative learning, creating a more dynamic and interactive learning experience.

This research states its unique contribution in integrating PowerPoint into the Think Pair Share (TPS) cooperative learning model, which not only serves as a presentation tool but also enriches the learning experience with easy-to-understand visual materials. PowerPoint supports the Think stage by presenting structured information, the Pair stage with clear instructions for discussion, and the Share stage by facilitating the delivery of the results of the discussion. The use of PowerPoint increases student activeness, independence, and collaboration, which is difficult to achieve with traditional methods. This contribution demonstrates how technology can strengthen cooperative learning, create dynamic and interactive learning environments, and support the development of 21st-century skills such as critical thinking and collaboration.

This study integrates PowerPoint into the Think Pair Share (TPS) cooperative learning model, where PowerPoint not only serves as a presentation tool, but also enriches learning by presenting material visually and structured. PowerPoint supports the Think stage with clear information, the Pair stage with structured instructions for discussion, and the Share stage by facilitating the delivery of the results of the discussion in an organized manner. The use of PowerPoint increases student activeness, independence, and collaboration, which is difficult to achieve with traditional methods. Thus, this study shows how technology, particularly PowerPoint, can strengthen cooperative learning, create a dynamic learning environment, and support the development of 21st-century skills such as critical thinking and teamwork.

4 Conclusion

This article shows that the application of PowerPoint media in the cooperative learning model Think Pair Share (TPS) can increase students' activeness and independence in learning. PowerPoint supports the presentation of visual and interactive materials, clarifies the concepts taught, and facilitates collaborative discussions between students. Thus, this combination is able to create more dynamic learning and encourage students to be more active in thinking, discussing, and sharing ideas independently. This study

shows that the integration of PowerPoint in the TPS model significantly increases students' learning activity and independence. The use of PowerPoint helps students understand the material better, facilitates structured discussions, and supports more active presentation of ideas. These findings support the research goal of increasing students' active participation and independence in learning. Despite the challenges related to the limitations of technology and teaching skills, the results of the study confirm the potential of PowerPoint in creating a more dynamic learning environment and supporting the development of student competencies in the 21st century.

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