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Enhancing student engagement and learning outcomes through the PENTAS instructional model

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Abstract

This study is motivated by low student engagement and learning outcomes. The poor learning outcomes are attributed to a lack of enthusiasm and motivation to participate in the learning process. Furthermore, students' comprehension of the material tends to be slow and superficial, primarily due to inadequate understanding of concepts and the continued reliance on traditional lecture-based teaching methods. This study implements the PENTAS learning model, which integrates problem-based learning, example non-example, and the talking stick method. This study analyses teacher activities, student learning activities, and outcomes. This research employs a qualitative approach using Classroom Action Research (CAR). The findings indicate a significant improvement in teacher activity, with scores increasing from 16 in the first session to 32 in the fourth session. Similarly, student engagement improved from 41% in the first session to 100% in the fourth session. Additionally, student learning outcomes achieved 100% mastery in cognitive, affective, and psychomotor aspects. Based on these results, it can be concluded that the PENTAS learning model effectively enhances teacher activity, student engagement, and overall student learning outcomes.

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1. Introduction

Education has an important role in the life of the nation. Education plays a role in changes that occur in a person's life. Changes occur through education because of efforts made by a person. According to Suriansyah (2011), education is an effort made by a person consciously. This means that educational activities are preceded by mature, systematic, and directed planning activities through procedures and mechanisms and certain tools to support the smooth implementation of the procedures. With the development of technology in the current era, which is already very advanced, education must also adapt to the development of technology that is happening today through TPACK. According to Mishra and Koehler, TPACK stands for technological pedagogical content knowledge, which means skills that teachers must master to incorporate technology into teaching and learning activities (Rahmad, 2019).

Social studies education in elementary schools is a subject that plays a role in the lives of students. According to (Oktaviani, Marini, and Fitriyani, 2022), the subject of social studies has the aim of directing students to become a democratic society, instilling in them a sense of responsibility as citizens and making students become peace-loving citizens. Social studies learning has ideal conditions that must be achieved. The ideal conditions for social studies learning according to the 2013 curriculum are that students are actively involved in social studies learning activities, students have enthusiasm and motivation to participate in the social studies learning process, students can develop social studies concepts that can be applied in everyday life and an engaging learning process in social studies subjects. This is in line with Parni's opinion (2020), namely that in social studies learning, it is hoped that students can work together in groups and choose, search for, process, and use information to develop themselves.

Students are passive and less active in the learning process, lack enthusiasm and motivation to participate in the learning process, and are less trained to understand the concepts of the lessons (Veriansyah, 2022); in social studies learning, students are required to be active in the learning process. To develop their potential, students must learn actively. One way to increase student activity is for teachers to use interesting and varied learning models. If the problems that occur are not resolved, they will impact students. The impacts are low activity and learning outcomes for students, and student's understanding of a material is slow and less mastered. Low student learning activity is the impact of students who are passive and less active in the learning process. Low student learning outcomes are the impact of students who lack enthusiasm and motivation to participate in the learning process. Furthermore, students understanding of the material is slow, and they do not master it well, which is the impact of students not being trained enough to understand the concepts of the lessons being taught and the learning model used by the teacher being only lecturing.

To overcome the problems, the PENTAS learning model is used, a combination of the problem-based learning (PBL) learning model with example non-example and a talking stick. According to Gallow (2001), the PBL model can encourage students to participate in discussion activities. Students can solve the problems given (Assegaff and Sontani, 2016). According to Istarani (2012), there are several advantages of using the example non example learning model itself, namely that learning becomes more interesting, students faster in understanding the material taught by the teacher, and increasing cooperation between students (Habibah, 2016). According to Nilayanti and Gunamantha (2019), talking sticks can increase student activity in the learning process. With this model, students can be directly involved in the learning process, making them more active. This study also aims to analyze student activities during the same lessons and assess improvements in student learning outcomes on the topic through the TPACK-based PENTAS model.

2. Literature Review

2.1 Problem-Based Learning (PBL), Example Non Example, Talking Stick (PENTAS)

The problem-based learning (PBL) model emphasizes that students should think when solving problems the teacher gives. In addition, this learning model also emphasizes students' cooperation, use of communication, and use of existing resources, such as the surrounding environment, to develop ideas and develop their skills. This is in line with Glazer's opinion (2001), which states that problem-based learning (PBL) emphasizes learning as a process that involves problem-solving and critical thinking in a real context (Nafiah, 2014). Furthermore, the Example Non Example learning model is a learning model that emphasizes student's use of existing examples. Examples can be obtained from images that are relevant to basic competencies. Through this learning model, teachers can provide examples to students through images or demonstrations of a procedure that students can carry out. It is in line with Rochyandi's opinion (2004), who stated that the example non-example learning model is a type of learning that activates students by educators attaching sample images that are learning objectives and other images that are relevant to learning objectives. Students are asked to

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analyze them and discuss the results of their analysis so that students can create essential concepts (Oennus, Erni, and Habibie, 2019).

The problem-based learning (PBL) model emphasizes that students should think when solving problems the teacher gives. In addition, this learning model also emphasizes students' cooperation, use of communication, and use of existing resources, such as the surrounding environment, to develop ideas and develop their skills. This is in line with Glazer's opinion (2001), which states that problem-based learning (PBL) emphasizes learning as a process that involves problem-solving and critical thinking in a real context (Nafiah, 2014). Furthermore, the Talking Stick learning model is a learning model that uses the help of a stick, which functions as a tool that will determine whether students will answer the questions given. This learning model will require students to play an active role during the learning process. This is in line with Shoimin's opinion (2014), which states that the Talking Stick learning model is one of the cooperative learning models (Pantas and Surbakti, 2020). This learning strategy is carried out with the help of a stick; whoever holds the stick is required to answer questions from the teacher after students have studied the primary material.

2.2 TPACK

The problem-based learning (PBL) model emphasizes that students should think critically when solving problems the teacher gives. In addition, this learning model also emphasizes students' cooperation, use of communication, and use of existing resources, such as the surrounding environment, to develop ideas and develop their skills. This is in line with Glazer's opinion (2001), which states that problem-based learning (PBL) emphasizes learning as a process that involves problem-solving and critical thinking in a real context (Nafiah, 2014). Akhwani and Rahayu (2021) stated that TPACK is divided into seven components, namely: 1) Content Knowledge (CK), 2) Pedagogical Knowledge (PK), 3) Technological Knowledge (TK), 4) Pedagogical Content Knowledge (PCK), 5) Technological Content Knowledge (TCK), 6) Technological Pedagogical Knowledge (TPK), and 7) Technological Pedagogical and Content Knowledge (TPACK) (Nurhayani, Yuanita, Permana, and Eliza, 2022).

Technological Knowledge (TK) is the teacher's knowledge of various technologies that can be used in learning, from ordinary technology, such as pencils and paper, to high-level technology, such as laptops or computers. Content Knowledge (CK) is the teacher's knowledge of the material or content, teaching materials, and learning resources that will be given to students. In this case, a teacher must learn before teaching. Pedagogical Knowledge (PK) is the teacher's ability to learn techniques, strategies, methods, and procedures, including learning management activities from learning planning, implementation, assessment, and evaluation of learning and development of learning activities for the future. Pedagogical Content Knowledge (PCK) is a teacher's ability to know the teacher's learning content and how to teach the content to students. PCK is a combination of knowledge of the content of the learning material and the way the teacher delivers the teaching. TCK is the teacher's ability to provide teaching content through relevant media or technology and can represent material that will make it easier for students to understand the material. Technological Content Knowledge (TCK) is the teacher's ability to use technology in the procedure and implementation of learning planning. This technology can make it easier for teachers to teach and change their teaching daily so that teaching is not monotonous for students. TPACK is related to the teacher's ability to connect the three main aspects: material, technology, and pedagogy (Quddus 2020) quoted from (Nurhayani, Yuanita, Permana, and Eliza, 2022).

3. Method

Problem-based learning (PBL) model emphasizes that students should think critically when solving problems the teacher gives. In addition, this learning model also emphasizes students' cooperation, use of communication, and use of existing resources, such as the surrounding environment, to develop ideas and develop their skills. This is in line with Glazer's opinion (2001),

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which states that problem-based learning (PBL) emphasizes learning as a process that involves problem-solving and critical thinking in a real context (Nafiah, 2014).

The research approach used by the researcher is qualitative, with the type of classroom action research. This classroom action research was conducted or implemented at SDN Alalak Selatan 1 with the subjects of this research being 17 fourth-grade students of SDN Alalak Selatan 1 consisting of five males and 12 females, social studies subjects on the material of time unit conventions for days, weeks and months semester II of the 2022/2023 academic year. Three factors are studied, namely teacher activities, student activities, and student learning outcomes obtained from teachers and students with a combination of PENTAS learning models (problem-based learning, example non-example, talking stick) in the learning process of social studies subjects.

The technique of using data and instruments used is with teacher activity data taken through observation by observing teacher activities in teaching and learning about multiplication material with a combination of problem-based learning (PBL) learning models with example and talking stick, student activity data taken through observation of student activities in learning about the material of converting time units in days, weeks, and months. Student learning outcome data is obtained from written values when completing the student worksheets (LKK), and evaluation is at the end of each learning. The technique of analyzing teacher activity data, student activities, and student learning outcomes (cognitive, affective, and psychomotor) is done by calculating the percentage of each aspect carried out by teachers and students. This is done using the formula:

$$\frac{number\ of\ scores\ obtained}{maximum\ score} \times 100$$

This Classroom Action Research (CAR) is considered successful if the teacher's activity in learning is categorized as successful if it reaches a score on the observation sheet with a range of 26-31 with a very good category. Student activities are categorized as successful if 100% of the total students have achieved a score with a very good category with a range of 13-15. The completeness of student learning outcomes is said to be successful (complete) if the student's learning outcomes reach a minimum score of ≥70 individually, and the classical completeness of students reaches a score of 100% of students reaching a score of ≥70.

4. Results

This CAR was conducted in two cycles of four meetings on social studies with the material of diversity of community economic activities of class IV SDN Alalak Selatan 1 using the PENTAS learning model. Using the PENTAS learning model can increase and improve teacher activities, student activities, and student learning outcomes in social studies with the material on the diversity of community economic activities. The results of the study using the PENTAS learning model to improve teacher activities, student activities, and student learning outcomes in four meetings are as follows:

Table 1. Teacher activity results

Meeting	Score	Criteria
1	16	Quite Good
2	20	Good
3	26	Very Good
4	32	Very Good

Based on **Table 1** above, it can be seen that at meeting one, the teacher's activity got a score of 16 with the criteria of "Quite Good", which means that the teacher still has to improve his/her skills in teaching in class so that the teacher's activity can increase. In the next meeting, the teacher's activity continued to increase. At meeting two, the teacher got a score of 20 with the criteria of "Good"; at

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meeting three, the teacher got a score of 26 with the criteria of "Very Good", and at meeting four, the teacher got a score of 32 with the criteria of "Very Good". The continuous increase occurred because of reflection, and the teacher implemented the steps of the PENTAS learning model in class IV of SDN Alalak Selatan 1 well so that the teacher's activity could increase and achieve the expected criteria and scores. With the increase in teacher activity, the teacher's quality of learning at each meeting also increased. Furthermore, student learning activities can be seen as follows:

Table 2. Student activity results

Meeting	Score	Criteria
1	41	Less Active
2	59	Quite Active
3	76	Active
4	100	Very Active

Table 2 above shows that at meeting 1, student activity scored 41% with the criteria "Less Good," which means that students have not achieved the desired indicators. However, it can be seen that at each meeting, student activity always increases. At meeting 2, student activity scored 59% with the "Quite Active" criteria. At meeting 3, student activity scored 76% with the criteria "Active"; at meeting 4, student activity scored 100% with the criteria "Very Active". Student activity by observing pictures and forming groups makes students more active in learning, increasing student activity at each meeting. The increase also occurs due to an increase in the quality of learning carried out by the teacher. With an increase in the quality of learning, student activity also increases. Furthermore, student learning outcomes can be seen as follows:

Table 3. Student learning outcomes

Meeting	Cognitive	Affective	Psychomotor
1	41%	36%	41%
2	65%	59%	59%
3	88%	82%	76%
4	100%	100%	100%

Student's learning outcomes consist of cognitive, affective, and psychomotor aspects, with a minimum completion of KKM ≥70 individually and classical completion of students reaching a score of 100% of all students. In the cognitive aspect, students achieved a score of 41% at meeting one, which continued to increase in subsequent meetings, whereas at meeting two, students achieved a score of 65%. At the meeting, three students achieved a score of 88%, and at the meeting, four students achieved a score of 100%. For the affective aspect at meeting 1, students achieved a score of 36%, which continued to increase in subsequent meetings. Where at meeting 2, students achieved a score of 59%; at meeting 3, students achieved a score of 82%; and at meeting 4, students achieved a score of 100%. For the psychomotor aspect at meeting 1, students achieved a score of 41%, which continued to increase in subsequent meetings, where at meeting 2, students achieved a score of 59%; at meeting 3, students achieved a score of 76%, and at meeting 4 students achieved a score of 100%. The increase at each meeting was due to increased student learning activities. In addition, the increase that occurred was also caused by students who were already able and capable of mastering the subject matter given by the teacher, students who already had attitudes that began to develop and become part of the culture in the learning process carried out by the teacher, and students who already had skilled and very skilled attitudes in the learning process carried out by the teacher.

Based on the results of the observations that have been presented, it can be seen that teacher activities, student learning activities, and student learning outcomes using the PENTAS learning model in class IV SDN Alalak Selatan 1 with the material diversity of community economic activities in the

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subject of social studies continued to increase at each meeting. The tendency of each aspect at each meeting can be seen in the following **Figure 1**.

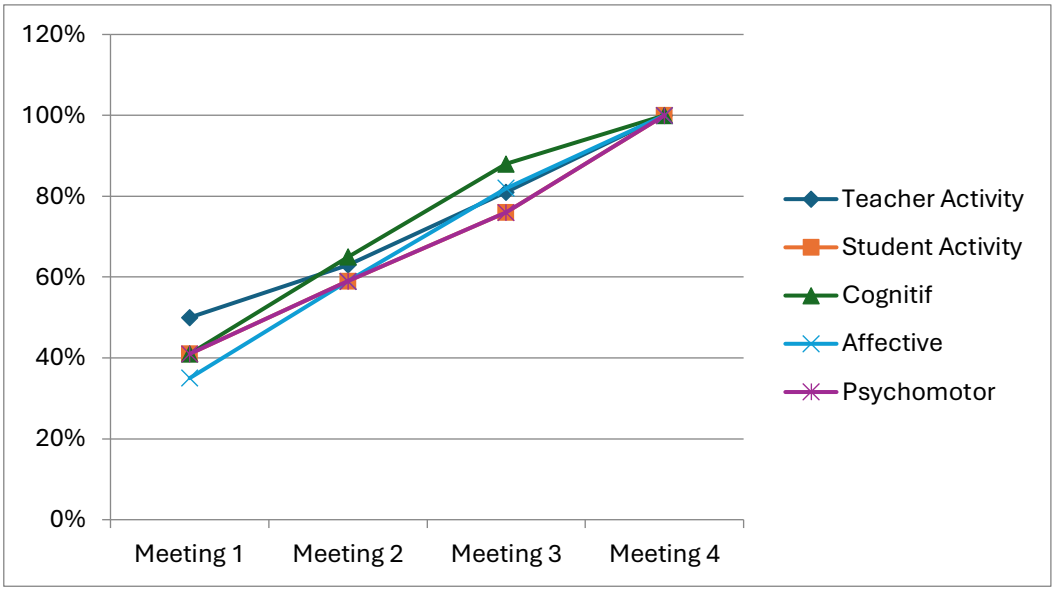

Figure 1. Tendency of all aspects of each meeting

Based on **Figure 1** above, it can be seen that teacher activity, student learning activity, and student learning outcomes have increased at each meeting. There is an increase in every aspect at each meeting because of improvements and reflections made for the next meetings. If teacher activity increases, student activity will also increase. With the increase in teacher and student activity, student learning outcomes will also increase.

5. Discussion

This discussion is conducted based on the formulation of the problem that has been determined. Through observations that researchers have conducted, field data were obtained regarding teacher activities, student activities, and student learning outcomes using the PENTAS learning model in social studies learning with the material "diversity of community economic activities" of class IV SDN Alalak Selatan 1. In terms of teacher activity, there has been an increase in each meeting. The increase in teacher activity impacts increasing student activity and learning outcomes. This increase in teacher activity is due to the reflection carried out at each meeting. This is by Dervent (2015), who stated that teacher reflection can improve the development of teacher professionalism. The same thing was also conveyed by Suriasyah, Aslamiah, and Sulistiyana (2015), who stated that professional teachers reflect on learning activities in each learning activity. The increase in teacher activity scores was caused by teachers who had designed learning steps using steps from the PENTAS learning model. The shortcomings of the primary learning model are covered by the supporting learning model so that they become a complementary unit by covering the shortcomings of each learning model.

A learning model must be adjusted to the characteristics of elementary school-aged children who like to play, move, and work together. The same was conveyed by Hayati, Neviyarni, and Irdamurni (2021), who stated that elementary school-aged students' needs are those who like to play, move, work together in groups, and do direct demonstrations. In line with this explanation, the teacher uses a learning model, namely problem-based learning (PBL), because it adjusts to the characteristics of students who like to work in groups and solve problems in their groups. An example non-example is a learning model that makes students identify an image the teacher displays. A talking stick is a learning model that allows students to play while learning.

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The increase in teacher activity also causes student learning activities to increase at each meeting. Student activities are observed using observation sheets, and aspects have been determined. These aspects are determined based on the steps of the PENTAS learning model. Student activities in social studies learning with the material "diversity of community economic activities" continue to experience significant increases from meeting 1 to meeting 4. The increase occurs both individually and classically. The increase in student learning activities at each meeting shows that the activities carried out by students in learning are gradually progressing well. This increase in student learning activities also occurs because teachers continuously reflect, make improvements at each meeting, and continue to encourage and motivate students.

Using interesting learning models that follow the character of elementary school-age students also affects increasing student activity. If teachers can understand the characteristics of elementary school-age children, then teachers will be able to design interesting and appropriate learning models quickly. This is in line with the opinion of Hayati, Neviyarni, and Irdamurni (2021), which states that a professional teacher must be able to design or create and implement a learning model by paying attention to the characteristics of children's development according to their age. Because they have understood the characteristics of elementary school students, teachers design the PENTAS learning model that involves students in activities appropriate to their age characteristics. The PENTAS learning model will stimulate students to be more active in learning. The three models, PBL, example non example, and talking stick, have the advantage of making students active in learning activities, working together, playing while learning, and making students move and think.

To improve student learning outcomes, teachers must first increase student learning activities. It is in line with Rizana (2017), who states that it is necessary to increase student learning activities. Increasing student learning activities is also inseparable from the role of teacher activities. With the increase and improvement of teacher activities at each meeting, it will increase student learning activities. This is in line with the opinion of Arisanti (2012), who stated that the role of teachers is significant in creating a pleasant learning atmosphere in the classroom and causing students to be actively involved in the learning process (Sumini, 2022).

With the increase in learning activities, there will be an increase in student learning outcomes. The increase in student learning outcomes can be seen at each meeting. Student learning outcomes continue to increase at each meeting so that it can be said to be successful because learning has achieved the objectives of social studies learning in elementary schools as stated by Hidayati et al. (2009), namely the objectives of social studies education on student behavior, namely; (1) knowledge and understanding, (2) attitude to learning, (3) social values and attitudes, (4) skills (Metroyadi and Maulida, 2015). The increase in learning outcomes can be seen in the evaluation carried out by the teacher (Idrus, 2019), who stated that with the evaluation of students, it would be known to what extent students understand the material delivered and studied. The increase in student learning outcomes can be seen in students' cognitive, affective, and psychomotor aspects at each meeting.

Improving student learning outcomes cannot be separated from the role of teachers who strive to improve student learning activities to increase student learning outcomes. Reflections carried out by teachers at each meeting also play a role in improving student learning activities. With the efforts made by teachers, there is an increase in student learning outcomes at each meeting. Teachers also use appropriate learning models to improve student learning outcomes. According to Mukminah et al. (2020) who stated that the use of appropriate learning models following the material and subjects being implemented will have an impact on student learning outcomes, and this is one way to improve student learning outcomes and improve the quality of the teaching and learning process (Saradela, Hannan, Suraya, and Syaharuddin, 2021). The PENTAS learning model has been proven to improve student learning outcomes, as seen at each meeting, where students constantly experience increased learning outcomes. The use of cooperative learning also plays a role in improving student learning outcomes. The use of cooperative learning has many positive impacts on student learning outcomes. Communication about the material between students will make students understand the material faster. In addition, through cooperative learning, students will be trained to respect the opinions of

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others. Therefore, using the PENTAS learning model will support cooperative learning carried out in the learning process in social studies with the material "diversity of community economic activities" class IV SDN Alalak Selatan 1.

6. Conclusion and Implications

Based on the Classroom Action Research (PTK) conducted with fourth-grade students of SDN Alalak Selatan 1 on the topic of diversity of community economic activities in social studies, the results indicate that teacher activities, student engagement, and learning outcomes were effectively implemented using the PENTAS learning model based on TPACK. The research showed a 100% achievement rate, placing the outcomes in the "Very Good" category and demonstrating individual and classical mastery of the learning objectives.

In light of these findings, several recommendations can be made. For school principals, it is suggested that this research be used to encourage teachers to adopt various learning models, such as the combination of PBL, example non-example, and talking stick, as they effectively enhance student participation and outcomes in social studies lessons. Teachers are advised to select appropriate learning models to meet educational goals, as using such combinations can boost student activity and achievement. Additionally, for future researchers, the results of this study can serve as a valuable reference for further exploration, offering opportunities to expand on these findings to improve the quality of elementary education. This study implies that integrating these models can enhance teaching and learning quality in elementary schools, particularly in Social Studies, by incorporating technology and innovative instructional strategies.

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