

Efforts to Improve Local Wisdom-Based Science Learning Outcomes With The TGT Model For Grade IV Students at SDN 128 Palembang

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Abstract: This study aims to improve the learning outcomes of 15 fourth grade students in science material based on local wisdom with the Teams Games Tournament (TGT) model with the type of classroom action research (PTK) to analyze learning outcomes from the pre-cycle and pre-cycle. then apply treatment with the Teams Games Tournament (TGT) model in cycle I and cycle II. The results of the study showed that after the pre-cycle the average student learning score was 35%, in cycle II the average score was 79.3% and in cycle II the average score was 87%. In conclusion, there is a significant increase in the implementation of the independent curriculum of the Teams Games Tournament (TGT) model on social studies learning outcomes based on local wisdom. The participatory learning model has a positive impact on the development of effective learning.

Keywords: Teams Games Tournament (TGT), Local Wisdom, Learning Outcomes.

PRELIMINARY

Elementary school teacher education has a curriculum change, namely the independent curriculum, which requires teachers to create a learning process that is in favor of students and frees them, such as by providing a sense of security and comfort in the learning process. To create learning activities that support students, it is necessary to create breakthroughs in effective learning models to improve student learning outcomes. In the independent elementary school curriculum, there is Natural and Social Sciences (IPAS) learning that combines IPS and IPA materials. The purpose of combining these subjects is to bring these subjects closer to the students' environment. Therefore, the presentation of physical concepts using contextual strategies is considered more optimal. (Indarta, Jalinus, Waskito, Samala, Riyanda, & Adi, 2022). This phenomenon strengthens the importance of local content-based learning that needs to be developed. In addition, the learning process in the classroom can be developed by relying on the advantages and uniqueness of a region (Hasibuan, Aufa, Khairunnisa, Siregar, & Adha, 2022).

Learning that is often done in schools in the subject of science and natural sciences which studies national culture or local wisdom and does not specifically study local wisdom from the area where they live. In agreement with (Yulia, Fithriyah, & Faizah, 2024) that learning support tools usually consist of teaching modules, LKS and media containing cultural material where the content of the material is dominated by physical and cultural wealth in the national environment, not the area around their place of residence. Therefore, to make it easier for students to understand science and natural sciences learning, it is very appropriate to link science and natural sciences material with local wisdom in the area where they live.

Cultural heritage is a noble value that exists in society and is specific to regions and traditional cultures in the form of contextual knowledge that is considered more optimal, norms, values, ethics, customary law, social institutions, cultural products, aesthetics, and belief systems that have been passed down from the past to the present. With the development of the times and technological advances as the next generation of the nation, it is necessary to know and be able to preserve local wisdom in the area where you live so that it does not fade away due to foreign customs. In line with research (Oktavianti & Ratnasari, 2019) states that the influence of globalization and technology can shift local wisdom with foreign cultures so that local wisdom must be oriented into Indonesian education. With the development of the times and technological advances as the next generation of the nation, it is necessary to know and be able to preserve local wisdom in the area where you live so that it does not fade away due to foreign customs. Local wisdom has a wise nature and becomes a way of life in the form of concepts, ideas, and ideas from local culture. By linking material with everyday cultural life, it can influence the improvement of students' cognitive abilities. In line with this, according to (Septia, Murjainah, & Rachmawati, 2022) that local wisdom-based education is a solution to improve students' competence to stay close to their surroundings. Local wisdom can be in the form of traditions, traditional clothing, tribes, traditional dances, musical instruments, traditional foods and customary laws that have become hereditary habits. Utilizing local wisdom in science learning has proven to be effective in encouraging student learning achievement.

The low learning outcomes of students can be influenced by several factors, one of which is the learning model, where the learning model is a method or step in creating

a pleasant learning atmosphere. According to (Khoerunnisa & Aqwal, 2020) the learning model is an approach or method that applies the learning process to achieve certain goals. The learning model is designed to facilitate teachers in delivering the learning process. All learning models aim to achieve learning objectives by paying attention to the context and needs of students (Kaban, Anzelina, Sinaga, & Silaban, 2021). In addition, according to (Raehanah, Hudari, & Djuwita, 2018) Among the various learning models available, the Team Game Tournament (TGT) type cooperative learning model is worth considering as an effective choice. Which is a learning that is carried out with study groups where group members are heterogeneous and there are games in it and ends with group awards. According to Piaget in (Ega, Rahayu, & Nurafah, 2023) Elementary school age is an age that still likes to play which is a concrete operational stage so that learning must involve real and fun activities. In line with (Firdaus, Subchan, & Narulita, 2020) that the TGT learning model involves the activities of all students without having differences in status, involving the role of students as peer tutors that contain elements of play. According to Slavin in (Gunarta, 2019) the Times Games Tournament (TGT) model includes: 1. Class presentations delivered by teachers when explaining material using creative media or techniques and requiring active students. 2. Groups in learning. 3. Games, where activities can be done through games. 4. Tournaments which can be done when presenting creative and innovative student worksheets, and 5. Team recognition, namely awards for student achievements. Therefore, in TGT the use of media and other active teaching tools will help students in understanding the material and improving their learning outcomes. So by implementing the Times Games Tournament (TGT) learning model, it can improve students' learning outcomes effectively and in accordance with their characteristics.

The research that is relevant to the Times Games Tournament (TGT) learning model is (Ega, Rahayu, & Nurafah, 2023) with the title "Improving Learning Outcomes of Grade IV Students with the Times Games Tournament (TGT) Model on Place Value of Numbers Material" which also uses the Times Games Tournament (TGT) model and classroom action research can be concluded The results of this study indicate the success of implementing the Times Games Tournament (TGT) model which can improve student learning outcomes on place value of numbers as evidenced by student scores exceeding the KKM and an increase from pre-cycle conditions to each cycle. Furthermore, research from (Amienati, Malawi, & Lelono, 2023) with the title "Improving Learning Outcomes

of Rounding Numbers with the TGT (Team Game Tournament) Method" which also uses the PTK method and the Times Games Tournament (TGT) model where it is concluded that there is an increase from cycle I 73.29% to cycle II to 80.49%. Then the research conducted by (Sekarsari & Rusnilawati, 2023) entitled "The Effect of Team Games Tournament Model-Assisted Articulate Storyline Media on Improving Outcomes and Interest in Learning Javanese Script Material in Elementary School" the results of the study showed an influence on the TGT learning model with Articulate Storyline on improving learning outcomes and interests of elementary school students. After conducting observations at SDN 128 Palembang, it was seen that several students when carrying out group assignments were just silent and there was a lack of student participation in the learning process. so that when working on evaluation questions, out of 15 students, only 35% of students were able to do the questions correctly. Then from the results of the pretest that I have carried out with the material of class IV Science Chapter 6 Topic A material on the uniqueness of the culture of the community around me by linking the material of local wisdom in the area where I live, there is cognitive knowledge of students which is on average below the KKM and also students are still confused in answering the pretest questions that I gave, but there are questions that contain local wisdom in other areas that students know because the local wisdom is in the student's book, namely local wisdom of national culture so that students can achieve the right response to the question.

Therefore, the researcher wants to conduct a study entitled "Efforts to improve local wisdom-based science learning outcomes with the Times Games Tournament (TGT) learning model for fourth grade elementary school students. This study aims to overcome the problems of passive students and the problem of improving local wisdom-based science learning outcomes which are still low. This study will use the Times Games Tournament (TGT) learning model to improve science learning outcomes rooted in local wisdom. It is hoped that by implementing the Times Games Tournament (TGT) model, students will be more enthusiastic in participating in learning and achieving learning objectives in the independent learning curriculum. Slavin in (Thalita, Fitriyani, & Pupun, 2019) stated that TGT is a learning procedure that provides opportunities for groups to compete with other groups so that students are enthusiastic about learning. Based on this explanation, this study aims to improve student learning outcomes in local wisdom-based

science learning and the benefits of this study can improve the quality of learning and make learning more interesting. With learning that integrates local wisdom, it has a positive impact on improving learning outcomes (Laila, Budiningsih, & Syamsi, 2021). So in this study, the researcher took the title "Efforts to improve science learning outcomes based on local wisdom with the TGT Model for grade IV students at SDN 128 Palembang"

METHOD

This study uses the Classroom Action Research (CAR) methodology, which is a type of action research carried out to overcome specific problems in the classroom. According to Sugiyono, 2019 In (Amienati, Malawi, & Lelono, 2023) The main objective of this study is to overcome the challenges and problems that exist in the classroom environment. In line with (Raehanah, Hudari, & Djuwita, 2018) The Classroom Action Research (CAR) Cycle includes four different phases: planning, implementation, observation, and reflection. This research was conducted at SDN 128 Palembang with research subjects, namely grade IV students with a total of 15 students consisting of 8 girls and 7 boys. The target of the action in this study was an increase in cooperative learning outcomes of the TGT type with independent curriculum science learning material Chapter 6 My Indonesia is Rich in Culture Topic A Uniqueness of the Community Around Me. Data collection techniques were carried out by:

1. Test in terms of measuring student learning outcomes with the instrument used in this study in the form of a test in the form of 10 multiple choice questions and 5 essay questions.
2. Observation, this technique is carried out to analyze the results of pre-cycle learning and observe each student's behavior in the classroom.
3. Data analysis technique by determining the percentage by finding the average value using the mean formula.

Calculating the average

$$X = \frac{\sum x}{N}$$

Information :

X = Average Value

$\sum x$ = total score

N = the number of students who have a score

To calculate the cycle results, the calculation is done using the formula

$$KB = \frac{Ns}{N} \times 100$$

Information :

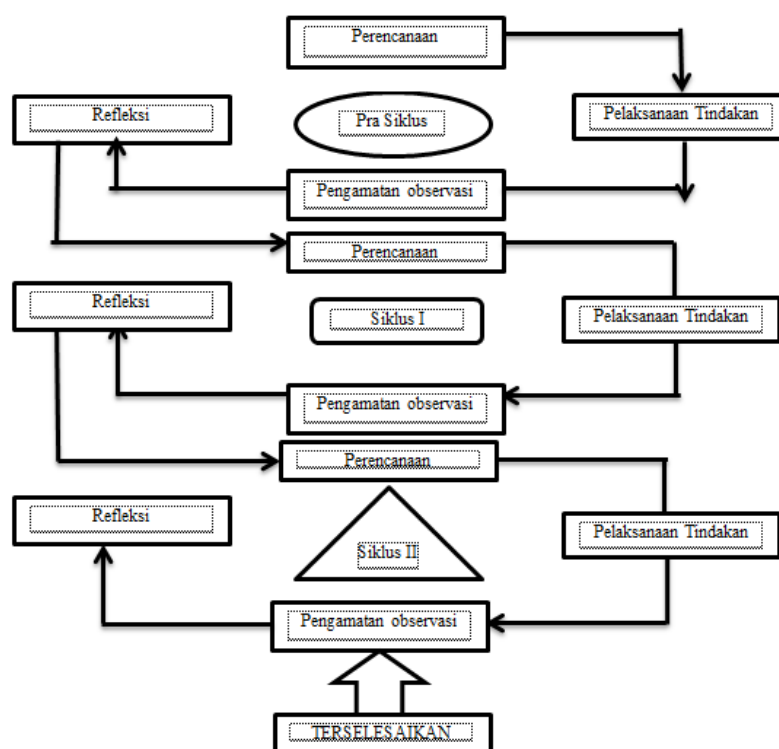
Kb = Learning completion

Ns = Number of students who got a grade ≤ 70

N = number of students

4. Documentation. This research was conducted because of the low learning outcomes during the pre-cycle of grade IV students on local wisdom-based science material in their residential areas and the continued use of conventional learning models.

It is said according to (Nabillah & Abadi, 2019) that the high and low learning outcomes are influenced by several factors, including (1) internal factors, namely those originating from within the student, such as lack of interest and motivation of students during learning (2) external factors, namely those originating from outside the student, such as teacher methods that are not interesting for students. This research was carried out with a pre-cycle stage then providing action for 2 cycles which were carried out for 3 meetings each week. The indicators of success in this study were an increase in student learning outcomes from the pre-cycle and cycle 1 to cycle 2 which exceeded the KKM 75 according to school policy. The following is a description of the PTK flow carried out.



Picture 1. Source (Modification of PTK Flow Carried Out)

RESULTS

The results of this study discuss cognitive learning outcomes starting from pre-cycle to cycle II. There are differences in the results of the Pre-cycle, cycle I and cycle II studies. The stages of research that have been carried out include several stages as follows:

1. Pre Cycle

At this stage, problem analysis is carried out pre-cycle which includes: planning, implementation, observation and reflection. At the planning stage, the determination of learning materials, the use of methods, models, approaches and learning strategies, media selection and the creation of teaching modules and other teaching tools are carried out. Furthermore, at the implementation stage using conventional models and heterogeneous group learning, then observations are made by seeing how the activities, attitudes and behavior of students are. It can be seen during the implementation that class IV students are passive when the learning process takes place and in the IPS material regarding the uniqueness of the community around me, students do not know what local wisdom exists in their area while they know the culture of other areas. Then in the reflection it is said

that there are still many students who get scores below the KKM with a percentage of 35%. Therefore, it becomes a follow-up material regarding how to create enjoyable learning and make students enthusiastic and actively participate in the learning process. This can be seen in the following table.

Tabel 1. Pre-Cycle Student Learning Outcomes

No	Description	Pre cycle
1	Lowest Value	20
2	The highest score	50
3	Average value	35%
4	Range of values	30

(Source of data processing results, 2024)

2. Cycle I

This classroom action research was conducted at SDN 128 Palembang with 15 students. This research took place in April 2024. Learning competencies were packaged in two cycles. The actions taken in cycle I were the application of the TGT model to the science subjects based on local wisdom. The following are the stages of implementing the cycle I actions.

Tabel 2. Stages of Implementation of Class Action Cycle I

Stages	Activity
Planning	Planning (Planning)Planning is carried out before implementing learning. The author prepares a learning design or teaching module and digital-based teaching tools by considering the objectives and achievements that are in accordance with basic competencies.
Action Implementation	The implementation of cycle I actions was carried out in one meeting and at the end of cycle I a learning outcome test was given in the form of evaluation questions. The actions carried out were using the Times Games Tournament (TGT) learning model with local wisdom-based science and science material for class IV Palembang city and using learning video media. In the application of games, the author applied a question card game that was attached to the board.
Observation	The observation stage was carried out by researchers on student activities during the local wisdom-based science learning process using the TGT model. The implementation of observations was carried out directly by checking during the learning process in class. In addition, this observation was also carried out on student activities in data collection, management, proof and drawing conclusions carried out in classroom learning activities. Observation activities carried out during cycle I provide a strong basis for concluding that the application of the Times Games Tournament (TGT) learning model can improve student learning outcomes in local wisdom-based science. From the observations that have been carried out, it can be seen that all students have followed the learning process well, especially at the games stage. Although there is overall student involvement, some individuals do not actively participate in the learning process. This can be used as an improvement in the actions of cycle II.
Evaluation of local wisdom-based science learning outcomes	At the end of cycle I, the teacher carried out an assessment on evaluation questions to measure the level of student learning success in the knowledge domain and the activeness of using the TGT model with local wisdom-based science and science material.

Tabel 3. Student Learning Outcomes Cycle I

No	Description	Pre cycle
1	Lowest Value	60
2	The highest score	95
3	Average value	79,3%
4	Range of values	35

(Source of data processing results, 2024)

The research findings show that the application of the TGT model in local wisdom-based science learning in the Merdeka curriculum provides a significant increase in students' local wisdom-based science learning outcomes. The average score achieved was 79.3%, which shows an increase from the pre-cycle. However, there are still some students who have not achieved completion so it is necessary to continue the application of the TGT learning model to improve learning outcomes that can be overcome in cycle II.

3. Cycle II

Actions in cycle II were carried out on April 26, 2024. In cycle II, the flow of activities carried out includes: planning, implementation, observation and reflection. The same as cycle I, which distinguishes cycle II from I is the application of the follow-up results from cycle I, which adds a type of digital-based game, namely using a wordwall quiz to arrange words into sentences where students together in groups compete to answer the quizzes on the board, this activity is carried out before the question card game as in cycle I. The application of the Times Games Tournament (TGT) model aims to improve students' understanding of the science subjects based on local wisdom of South Sumatra.

The average student learning outcomes in cycle II were 87%, showing a significant increase compared to cycle I. The increase in learning outcomes of grade IV students with local wisdom-based science and technology material can be seen in the following table.

Tabel 4. Hasil Belajar Peserta Didik Siklus II

No	Description	Pre cycle
1	Lowest Value	70
2	The highest score	100
3	Average value	87%
4	Range of values	30

(Source of data processing results, 2024)

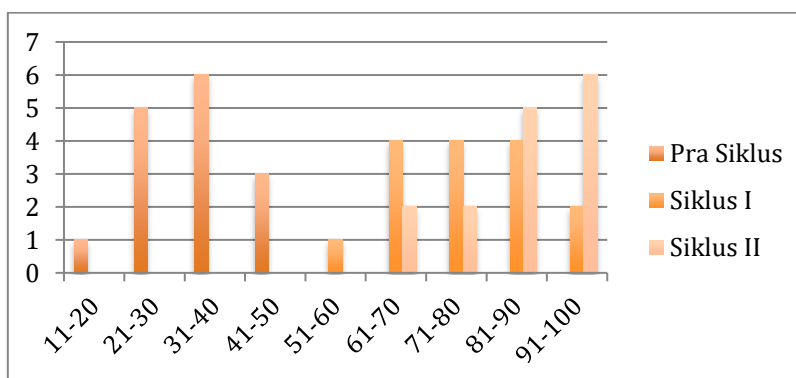
This study uses the Times Games Tournament (TGT) learning model in delivering local wisdom-based science learning in three cycles: pre-cycle, cycle I, and cycle II. Data collection was carried out by giving a formative test consisting of 10 multiple-choice questions and 5 essay questions. The following is a table of learning outcome intervals obtained by students.

Tabel 5. Distribution of Student Learning Outcomes During Classroom Action Research

Value Interval	Frequency		
	Pre cycle	Cycle I	Cycle II
11-20	1	0	0
21-30	5	0	0
31-40	6	0	0
41-50	3	0	0
51-60	0	1	0
61-70	0	4	2
71-80	0	4	2
81-90	0	4	5
91-100	0	2	6

(Source: data processing results, 2024)

From the data on the frequency distribution of student learning, it can be seen that many students who get scores below 75 as the KKM score at school are still high, seen from the pre-cycle data which is different from the data after the action with the application of the TGT model of local wisdom-based science material in its learning, it can be seen from the interval of scores obtained by students, many of which exceed the KKM in the data on cycle I and cycle II. The following is to see the achievement of the KKM score of class IV students, here is the result chart:



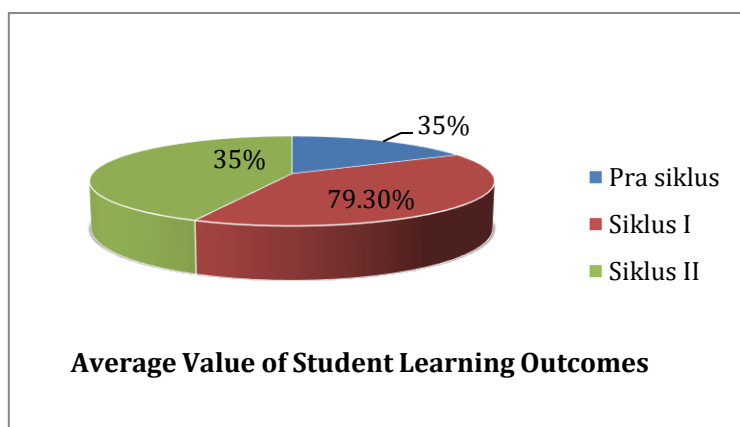
Picture 2. (Source : data processing results, 2024)

From the results of the interpretation of the chart, it can be seen that when the pre-cycle or before the action was carried out, those who got a score below 75 or below the KKM were 13 out of 15 people. The indicator of success in this study was an increase in student learning outcomes from the pre-cycle and cycle I to cycle II which exceeded the KKM limit of 75 according to school policy.

Table of Learning Outcomes of Average Student Scores

No	Description	Pre Cycle	Cycle I	Cycle II
1	Average value	35%	79,3%	87%

(Source : data processing results, 2024)



Picture 3. (Source: data processing results, 2024)

It can be seen in the diagram that there is a low value in the local wisdom-based science lesson on the material Uniqueness of the community around me. It can be seen from the pre-cycle cognitive knowledge showing an average value of 35% and an average value of cycle I of 79% then there was an increase in cycle II with an average value of 87% from this it can be seen that there is a significant difference before the action in the pre-cycle with after the cycle action was carried out.

DISCUSSION

The application of the TGT learning model on local wisdom-based science and technology material in cycle II obtained maximum results for student learning outcomes and can also increase learning activity. When the pre-cycle was implemented, students seemed less enthusiastic in learning, there were several students who were silent when participating in learning. In addition, in science and technology learning, the uniqueness

of the community around me, students were unable to answer questions about local wisdom in the area where they live. So that when working on evaluation questions in cycle I, students got an average below the KKM. Class IV students who have passive characteristics in the learning process, only a few students were involved in the learning process.

The implementation of the TGT learning model that has been carried out by researchers in cycle II has shown development from cycle I where students appear enthusiastic in participating in the learning process. Previously, students did not fully understand the syntax of the game being implemented, but in cycle II they were orderly and more focused in answering questions and there was an increase in student activity in carrying out good cooperation between friends to complete a match. Each student is able to be responsible for working on questions independently and is able to think critically. At the end of the match, namely the award stage, the group that won the match was given a reward to motivate and increase student enthusiasm. In line with this, according to research (Fauhah & Rosy, 2021), it is said that the low success of learning is due to the implementation of one-way and conventional learning. In addition, the low learning outcomes are influenced by the learning model used so that there is a lack of student participation. Based on the analysis of student learning outcome data that has been implemented by applying the TGT learning model, it can be proven that this learning model can improve learning outcomes in the IPAS material regarding the uniqueness of the habits of the people around me. The learning outcomes obtained in the provision of pre-tests, students get an average below the KKM, in cycle I students get a fairly good average, there is development from the pre-skill. While in cycle II learning outcomes get maximum improvement. With an average pre-cycle value of 35%, then cycle I is 79.3% and cycle II is 87%. This is based on the application of the TGT learning model which is very suitable for elementary school children. With the presence of games in the learning process, it increases the enthusiasm of students so that it will be easier to understand the learning provided. Selajan according to (Fauzi & Masrufah, 2024) that the game method in TGT can provide opportunities for students to be directly involved in learning and students will feel happy with the material presented in the learning process.

CONCLUSION

From the results of classroom action research that has been implemented at SDN 128 Palembang with the title "efforts to improve learning outcomes of science and natural sciences based on local wisdom with the Teams Games Tournament (TGT) Model for grade IV students of SDN 128 Palembang". The application of the Times Games Tournament (TGT) model in the pre-cycle, cycle I, and cycle II showed an increase in student learning outcomes in science and natural sciences (IPA) subjects based on local wisdom that was consistent. This is also evidenced by the increasing number of students who achieved the minimum passing grade (KKM) after using the TGT model, as well as an increase in student understanding of local wisdom practices in their respective regions. In addition, the TGT model has proven effective in fostering student involvement and active participation throughout the learning process.

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