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The Influence of Implementing the Teams Games Tournament (Tgt) Type Cooperative Learning Model on Student Learning Outcomes in Class VII Informatics Subjects at Smp N 2 Padang

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Abstrak
Informatika merupakan matapelajaran yang berorientasi pada berpikir komputasional dan pemecahan masalah dan menekankan keseimbangan antara kemampuan berpikir, keterampilan menerapkan pengetahuan informatika. Permasalahan pada mata pelajaran ini adalah guru masih kurang menerapkan model pembelajaran dan hanya mernyuruh siswa untuk menrangkum. Penelitian ini bertujuan untuk mengetahui pengaruh penerapan model pembelajaran kooperatif tipe *Teams Games Tournament* (TGT) terhadap hasil belajar pada mata pelajaran Informatika kelas VII SMPN 2 Padang. Jenis penelitian ini adalah penelitian eksperimen semu. Sampel dalam penelitian sebanyak 62 peserta didik kelas VII. Teknik pengumpulan data yang digunakan adalah metode tes. Instrumen tes digunakan untuk mengumpulkan data hasil belajar peserta didik setelah menerapkan pembelajaran kooperatif tipe TGT. Data dianalisis menggunakan statistic uji t dengan taraf signifikan 0,05. Hasil penelitian menunjukkan bahwa nilai rata-rata eksperimen sebesar 80,17 dan nilai rata-rata kelas kontrol sebesar 72,50. Hasil hitung uji t (t-tes) diperoleh thitung 2,540 lebih besar dari t tabel pada taraf signifikan 0,05 adalah 1,670. Dapat disimpulkan penerapan model pembelajaran kooperatif tipe TGT berpengaruh terhadap hasil belajara siswa pada mata pelajaran Informatika kelas VII SMPN 2 Padang.

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Abstract
Informatics is a subject oriented towards computational thinking and problem-solving, emphasizing a balance between critical thinking and the practical application of informatics knowledge. The issue in this subject is that teachers often fail to implement teaching models and merely instruct students to summarize information. This study aims to investigate the impact of applying the Team Games Tournament (TGT) cooperative learning model on learning outcomes in the 7th-grade Informatics class at SMPN 2 Padang.This research is a quasi-experimental study, with a sample of 62 7th-grade students. Data collection utilized a testing method, with test instruments used to gather students' learning outcomes data following the implementation of the TGT cooperative learning. Data was analyzed using a t-test with a significance level of 0.05. The research results reveal that the experimental group's average score is 80.17, while the control group's average score is 72.50. The calculated t-test value (t-value) of 2.540 is greater than the critical t-value at the 0.05 significance level, which is 1.670. Therefore, it can be concluded that the implementation of the TGT cooperative learning model has a significant *impact on student learning outcomes in the 7th-grade Informatics class at SMPN 2 Padang.*

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1. INTRODUCTION

Education has an important role in developing the potential that exists in students, both potential in the aspects of intelligence, competitiveness, effectiveness and creativity and improving the quality of human resources. Education is a human effort to improve his personality by increasing his personal potential

Learning is the basic process of education, this is because it is the smallest formal scope that determines whether the world of education is going well or not. Learning is a process of creating

conducive conditions for teaching and learning communication interactions to occur between teachers, students and other learning components to achieve learning goals (Hosnan 2002:18).

In the implementation of independence at the junior high school level, Informatics subjects are one of the compulsory subjects, while Crafts subjects are one of the choices along with Arts subjects (Anggara, et al, (2023). Informatics subjects contain various competencies to support thinking skills critically and systematically to solve various general problems. Informatics students can create, design and develop computational artifacts as technological products in the form of hardware, software or a combination of hardware and software as a system using appropriate technology and tools.

Informatics education is oriented towards strengthening computational thinking skills in solving everyday problems, and emphasizes a balance between thinking abilities, skills in applying informatics knowledge and using technology appropriately and wisely to produce computational objects as efficient and optimal solutions to various problems faced by society Wisnubhadra Irya, (2021).

Based on observations at SMPN 2 Padang on March 8 2023, namely by looking at Informatics learning, teachers are still not implementing learning models correctly and are not varied so that students feel monotonous and not interested in learning. The teacher only provides a little learning information and then asks the students to summarize the material in the book without giving students the opportunity to ask questions related to the learning. This results in students only gaining theoretical knowledge and acting passively. And not all students pay attention when the teacher teaches, there are some students who are not focused on the learning process. Teachers do not hold discussions with students regarding the material being studied, so students do not have an opinion on learning. This makes student learning outcomes low. This can be proven in table 1.

Table 1.
Average Daily Assessment for Class VII Informatics Subjects

No	Class	KKTP	The number of students	Average
1.	VII A	81	32	70.6
2.	VII B	81	32	68.5
3.	VII C	81	32	62.9
4.	VII D	81	32	53.2
5.	VII E	81	31	57.7
6.	VII F	81	31	46.7
7.	VII G	81	30	52.6

From the data above, it can be seen that the average daily assessment score of class VII students at SMP N 2 Padang in the Informatics subject for SMP N 2 Padag students still does not meet the KKTP (Learning Goal Achievement Criteria) set by the school, namely 81. Therefore , learning is needed that is appropriate, precise, varied, and increases student involvement in lessons so that the learning material delivered by the teacher can be easily understood by students. One learning model that can be used is the cooperative learning model.

The cooperative model is a teaching and learning model that emphasizes attitudes or behavior in working or helping others in an orderly cooperative structure in groups, consisting of two or more people (Bentri, Hidayati, & Rahmi, 2019: 119). The cooperative learning model is not the same as just group learning, but there are basic elements that differentiate it from group division which is

carried out haphazardly (Lie, 2002). said that the cooperative learning model is not the same as just group learning, but there are basic elements that differentiate it from group division which is done haphazardly. Rivai (2016) said that students will find and understand complex topics more easily if they discuss them with their peers.

One of the learning models that allows students to be actively involved, creative and express their opinions with fellow groups in learning is the Teams Games Tournament (TGT) type cooperative learning model. TGT is a type of cooperative learning that places students in study groups consisting of 5-6 students who have different abilities, gender, ethnicity and race (Slavin & Robert E, 2008). This learning model requires involvement of students from the beginning of learning to the end of learning, this model also contains elements of play. The effectiveness of the Team Game Tournament (TGT) model can increase students' interest in learning in groups with the aim of competing well to get the best points.

2. RESEARCH METHOD

The research method used in this research is quantitative research using a quasi-experimental approach. The aim of this research is to see the effect of implementing the Teams Games Tournament (TGT) type cooperative learning model in class VII Informatics subjects on Computational Thinking material. This research was carried out in two classes, namely the experimental class and the control class. The experimental class is class VII G which applies the Teams Games Tournament (TGT) type cooperative learning model. Meanwhile, the control class is class VII D which applies the conventional learning model.

The population in this study were 252 class VII students of SMP N 2 Padang who had been grouped into 8 classes. The research sample used was 62 people. The sampling technique uses purposive sampling technique. *Purposive sampling*is a sample selected based on the consideration that the elements are representative of the population and adapted to certain purposes(Fetri, et al, 2018: 50). This technique is used with various considerations, for example based on certain specific characteristics. The researcher's aim was to use purposive sampling to facilitate the implementation of the research.

The data collection technique that researchers used in this research was a written test in the form of multiple choice (objective). This test will later be used to see the effect of the Teams Games Tournament (TGT) type cooperative learning model on student learning outcomes in class VII Informatics Subjects at SMPN 2 Padang. The data collection tool used in this research is an objective test question sheet with 15 questions whose validity has been tested and given to students.

The statistical analysis technique used in this research is the t-test. Analysis of this research data is to test the truth of the hypothesis that will be proposed. The first data analysis technique is the normality test. The normality test is used to find out whether the data to be processed comes from samples whose analyzed data is normal or not (Syafril, 2020: 177). The technique that is often used to test the normality of this data is the Liliefors test. Then a homogeneity test was carried out

The statistical analysis technique used in this research is the t-test. Analysis of this research data is to test the truth of the hypothesis that will be proposed. The first data analysis technique is the normality test. Syafril (2020:177), said that the normality test is used to find out whether the data to be processed comes from normally distributed data. The normality test is carried out before processing the data using Product Moment correlation techniques, Regression, t-test, Anava and so on. The technique that is often used to test the normality of this data is the Liliefors test. Then proceed with the Homogeneity test. According to Syafril (2020:174) "one technique that is often used to test the homogeneity of population variance is to use the Barlett test". The homogeneity test is carried out to determine variations in the population and see whether the data comes from a homogeneous group. After that, proceed with hypothesis testing. Hypothesis testing aims to find out how the

application of the team games tournament type cooperative learning model affects student learning outcomes in class VII Informatics at SMPN 2 Padang. To test this hypothesis, a difference test (t-test) can be carried out using the formula in Syafril (2020:147), as follows:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{SD^2\ x1}{N_1 - 1} + \frac{SD^2\ x2}{N_2 - 1}}}$$

Information :

t = Test of significant and variable differences

$\bar{X}_1$ = Mean of experimental group

$\bar{X}_2$ = Control group mean

SD2 = Variation

elementary school = Standard Variation

N1 = Number of experimental groups

N2 = Number of control groups

The tcount price is compared with the ttable price contained in the t distribution table. If t count > t table it means there is a significant difference between the two groups. This is in accordance with what was stated by Syafril (2020: 138), namely if the calculated t is the same or greater than the t table, it means there is a significant difference and conversely, if the calculated t is smaller than the t table, it means there is no significant difference.

3. RESEARCH RESULTS AND DISCUSSION

3.1 Research Results

Student learning results obtained from the experimental class which applied the TGT type cooperative learning model in the Informatics subject in two meetings. Data on experimental class learning outcomes are presented in Table 2 below:

Table 2.

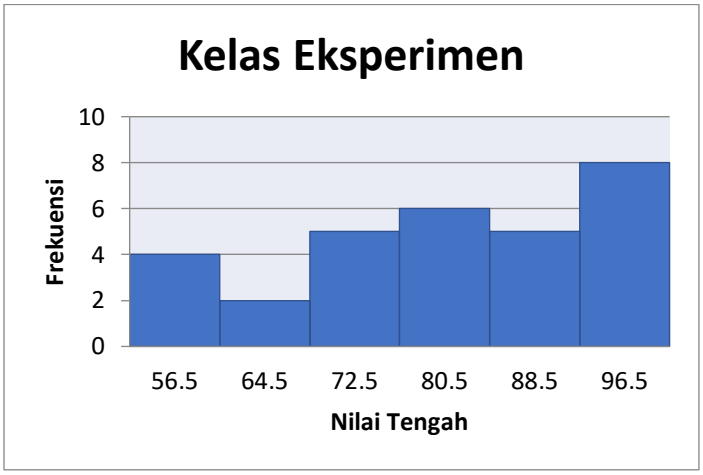
Data on Student Learning Outcome Values for Experimental Class class VII.D

Interval Class	Midpoint	F
53 - 60	56.5	4
61 - 68	64.5	2
69 -76	72.5	5
77 - 84	80.5	6
85 - 92	88.5	5
93 - 100	96.5	8
Amount		30

Based on the table above, the interval class that has the highest frequency is the 93-100 range and the lowest is the 61-68 range. The data can be seen more clearly in the following graph:

Figure 1

Histogram of experimental class learning outcomes data



Data on learning outcomes from the control class which applied conventional learning, obtained an average value of 72.50. The following is the range of intervals for obtaining learning outcome scores in the control class in table 3 below:

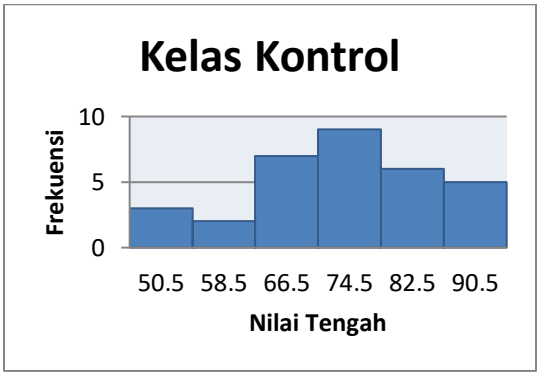
Table 3
Control Class Learning Result Value Data

Interval Class	Midpoint	F
47 - 54	50.5	3
55 - 62	58.5	2
63 - 70	66.5	7
71 - 78	74.5	9
79 - 86	82.5	6
87 - 94	90.5	5
Amount		32

Based on the table above, the highest frequency is in the 65-71 interval and the lowest frequency is in the 51-57 interval. For more details, see the graph below:

Figure 2.

Histogram of data on control class learning scores



Based on the normality test from the experimental class and control class, it was found that Lcount and Ltable were at α 0.05 for N = 30 as in the following table:

Table 4.

Normality Test Results for Experimental Class and Control Class.

Class	α	N	Lcount	Table	Information
Experiment	0.05	30	0.0867	0.161	Normal
Control	0.05	32	0.1376	0.1566	Normal

From the table above it can be seen that the experimental class with Lcount 0.0867 is smaller than Ltable 0.1566 for α0.05. Thus, the experimental group values come from normally distributed data. For the control class, Lcount is 0.1376, which is smaller than Ltable 0.161 for α0.05, so it can be concluded that the data from the control class is normally distributed.

The next requirements test is homogeneity testing using the Barllet test. This test aims to see whether the data comes from a homogeneous group, both between the experimental class and the control class. The homogeneity test calculation is in the attachment. The calculation results can be seen in the following table:

Table 5.

Homogeneity test results for experimental class and control class.

Class	Variant	X^2count	X^2table	Information
Experiment	157, 59	0.782	3,841	Homogeneous
Control	321.43			

Based on the table above, it can be concluded that the data group has homogeneous data at a level of 0.05 with dk=N-1, because Xcount is smaller than Xtable (0.782 < 3.841). Thus it can be concluded that the data from the experimental class and control class come from homogeneous groups

The next step taken is the t test. The t test was carried out to determine whether there was a significant influence between the two classes. If tcount < ttable it means there is no significant influence between the two groups. This is in accordance with the opinion expressed by Syafril (2020: 138), namely "if tcount is the same or greater than ttable for α 0.05 there is a significant difference and conversely if tcount is smaller than ttable it means there is no significant difference". From the results of hypothesis testing using the t test, the following results were obtained:

Table 6.

Test Results with t Test

NO	Group	Class Average	T count	T table
1	Experiment	80.17	2,540	1,670
2	Control	72.50	2,540	1,670

The number of dk is 60, whereas in the existing dk table it is 60. Based on the table, dk is 60 for α 0.05 = 1.670. Thus t count > t table = 2.540 > 1.670, then Hypothesis H1 can be accepted.

3.2 Discussion

Based on the results of the research that has been carried out, there are visible differences in learning outcomes between students who learn using the teams games tournament type cooperative learning model and students who learn by applying conventional learning. The difference in results can be seen from the average student learning outcomes when applying the teams games tournament type cooperative learning model, namely 80.17, which is higher than the average results for students who apply conventional learning, namely 72.50.

From the data analysis, to test the success of the learning outcomes that have been formulated in the hypothesis, a t test was carried out at a real level of 0.05 with tcount = 2.540 and ttable = 2.000, meaning tcount is greater than ttable. Based on this, it can be concluded that there is an influence of the application of the teams games tournament type cooperative learning model in the Informatics subject on the learning outcomes of class VII SMPN 2 Padang which is accepted at the 0.05 level.

This TGT type cooperative learning model is a discussion learning model, where students are divided into groups of 4 - 5 people in one group randomly without looking at achievement, ethnicity, race and religion. In accordance with Slavin's (2005:143) opinion, this type of TGT cooperative learning triggers students to encourage and help each other to master the understanding and skills taught by the teacher.

Previous learning tended to be monotonous and students were less active because the material in informatics learning required understanding, memorizing and studying. By implementing the TGT type cooperative learning model in class, students become more active in asking questions, providing answers from other group friends and being able to express their opinions during the learning process in class. In accordance with the characteristics of learning using the TGT type cooperative model, namely cooperative skills. Students are encouraged to interact and communicate with each other, so that students can express opinions and contribute to the success of the group (Wulandari, 2022).

Changes in behavior and learning outcomes for the better in students after carrying out the learning process are factors that come from within the student and factors from outside him. Good learning outcomes are obtained when these factors make a positive contribution to students.

Based on this explanation, it can be seen that after carrying out learning by applying the TGT type cooperative model, it turns out that it has a significant influence on student learning outcomes in class VII Informatics subjects at SMP N 2 Padang.

4. CONCLUSION

The application of the Teams Games Tournament (TGT) type cooperative model in the learning process has a significant influence on student learning outcomes in class VII Informatics learning at SMPN 2 Padang. From the results of the data analysis carried out, t test results were obtained with a calculated t value of 2.540 and a t table of 1.670 at α 0.05. So the value of tcount > ttable = 2.540 > 1.670. So Hypothesis H1 is accepted.

Student learning outcomes by applying the Teams Games Tournament (TGT) type cooperative learning model in class VII.G as an experimental class obtained high learning outcomes with an average of 80.17. Class VII.D as a control class that applies conventional learning gets lower learning outcomes than the experimental class, namely 72.50.

5. THANK-YOU NOTE

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