

The Effect of Team Games Tournaments Cooperative Learning Model on Student Learning Outcomes in Pancasila and Civic Education Learning

Tri Supriandono^{1(*)}, Mukhamad Murdiono², Agus Riyanto³

^{1,2}Program Magister Pendidikan Pancasila dan Kewarganegaraan, Universitas Negeri Yogyakarta, Yogyakarta, Indonesia

³SMK Negeri 1 Cikedung, Indonesia

Abstract

Received : May 6, 2023
Revised : August 8, 2023
Accepted : August 20, 2023

This study aims to determine the effect of the Teams Games Tournament (TGT) cooperative learning model on student learning outcomes in Pancasila and Citizenship Education (PPKn). The TGT cooperative learning model aims to improve students' knowledge, abilities, and skills in a fun and competitive learning atmosphere. This study adopted a quantitative approach with a quasi-experimental pretest-posttest control group design. Participants were selected from class XI MM 1 (control group) and XI FKK (experimental group) at SMK Negeri 1 Cikedung, Indramayu Regency using purposive sampling. The sample consisted of 48 students, 29 in the experimental group and 19 in the control group. Data analysis used SPSS 22, with a learning achievement test instrument consisting of 20 items. The results of the analysis showed that the average score of the experimental group's student learning outcomes was 82.06, while the average score of the control group was 77.89, with the moderate control group category and the high experimental group. Testing the hypothesis using the t test produces $t_{count} < t_{table}$ ($1.039 < 2.015$) with a significance level of 0.025 so that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. Consequently, there was a significant difference in the post-test results between the control and experimental groups. Thus, the TGT cooperative learning model has a positive effect on the learning outcomes of Pancasila and Citizenship Education (PPKn), especially regarding the system and dynamics of Pancasila democracy, so that the learning outcomes in the experimental group are high.

Keywords: civic education, learning outcomes, pancasila and TGT

(*) Corresponding Author: trisupriandono.2021@student.uny.ac.id

How to Cite: Supriandono, T., Mukhamad Murdiono, & Agus Riyanto. (2023). The Effect of Team Games Tournaments Cooperative Learning Model on Student Learning Outcomes in Pancasila and Civic Education Learning. *JTP - Jurnal Teknologi Pendidikan*, 25(2), 223-233. <https://doi.org/10.21009/jtp.v25i2.35184>

INTRODUCTION

Education as an institution for the development of human resources has a significant role in forming students to create unique national assets (Aji, 2020). This is following the function of national Education, which has been stated in the Law of the Republic of Indonesia No. 20 of 2003 concerning the National Education System Chapter I Article 1 states that Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious, spiritual strength, self-control, personality, intelligence, noble character, as well as the skills needed by

himself, the community, the nation and the State. Education in schools is a planned and purposeful process so that the learning process carried out by teachers and students can achieve learning objectives.

One way to realize superior students is through the learning process that is carried out. A good learning process will create superior students in the end. Teaching in the standard context of the educational process is not just conveying learning material but is also interpreted as regulating the environment so that students are happy with learning (Emita & Lukas, 2022).

Learning is a process by educators to teach students in a particular learning environment that has resulted in changes in behavior (Jusuf et al., 2021). Learning is a process, so some components are related to one another. Some main components in learning include learning objectives, educators, students, curriculum, strategies, media, models, and learning evaluation. The result of the relationship between the many components of learning, one of which will form an activity called the learning process.

Educators are expected to create fun and practical learning process activities. One effort can be made to renew a learning model that can touch students' cognitive, affective, and psychomotor abilities. For example, a learning model that familiarizes students to be active so that students can develop all abilities to learn independently by looking at conventional issues in everyday life (Mulyati et al., 2022).

Using learning models in Pancasila and Civic Education (PPKn) subjects that are not appropriate can impact learning activities that are quickly dull so that the material presented is complex for students to accept. In this case, it will impact learning outcomes and low student motivation. For example, students become lazy to study subjects Pancasila and Civic Education (PPKn), sleepy while attending lessons, less active in following lessons, and less precise in answering questions. It impacts the achievement of learning outcomes that do not reach the Minimum Completeness Criteria (KKM).

It is suspected that citizenship learning tends to be boring, so learning outcomes stay within the minimum limit. The same is true in studies, which show that the civics subject in the learning process still seems to be taught a lot and needs to be learned (Wahyuni et al., 2021). Citizenship learning in the 2013 curriculum aims to make students cooperative, critical, and active, providing experience and practice in the concept of national and state life inside and outside the classroom (Harendita & Kristianto, 2022). The teacher's more dominant role in the learning process causes students to perceive that the teacher constantly guides and directs them. Teachers, as sources of inspiration and motivation, should actively encourage students to participate.

The results of observations made at 1 Cikedung Vocational High School obtained data that students tend to be less motivated. The average achievement percentage of KKM learning outcomes in previous PPKn subjects was 55%. The low achievement of student competence is possible because of the teacher-centered learning process. The same thing happened to the research results released by the international civic and Citizenship Study, which shows that the average citizenship knowledge of students in Indonesia is still below the international average, namely 433 and 499.

Based on the observation results, teachers' learning model still seems monotonous and tends to rely on conventional learning models. This causes students to need more motivation in the teaching and learning process. Learning Pancasila and Civic Education (PPKn) involving students can improve their learning outcomes because, by learning PPKn, students can find new things that can guide them in everyday life in their social environment. Learning is a change in behavior in an individual due to interactions between one individual and another and between the individual and the environment (Kurniawan et al., 2022).

Internal factors that affect the improvement of learning outcomes are factors experienced by students, such as learning attitudes, concentration, motivation, intelligence, self-confidence, learning goals, and study habits. In contrast, external factors influence learning activities, such as teachers, facilities and infrastructure, school environment, and curriculum (Emita & Lukas, 2022). Learning success PPKn at school depends on how the teacher teaches in class concerning the professional skills of Civics teachers. So far, there are still many teachers PPKn in teaching using conventional lecture methods by prioritizing students' abilities. Memorization.

In the learning process, motivation is needed. Learning motivation in students is essential for improving learning outcomes. Ideally, students have many motivation sources in their learning experiences in each class (Amin & Lestari, 2021). Objective PPKn in schools emphasizes mastery of knowledge and skills that equip students to handle everyday life (Zulhelmi et al., 2023). Leading role PPKn in the country is related to state formation and is designed to build a shared identity that instills patriotism and loyalty to the nation. The use of innovative learning models can increase the motivation and learning outcomes of students in learning PPKn, and teachers can use learning models Teams Games Tournament (TGT) (Arum, 2020).

Learning Cooperative type Team Games Tournaments (TGT) is a type of cooperative learning model that uses academic tournaments, using quizzes, and an individual progress score system, where students compete as representatives of their team with other team members whose previous academic performance is equivalent to them. Increasing motivation and learning outcomes can be done with active learning, such as the TGT-type cooperative learning model (Arum, 2020). This learning model offers a pleasant atmosphere in learning activities that are packaged in the form of tournaments or competitions. In the end, students' learning activities are hoped to increase.

TGT is a model that involves all students' activities, including religious, nationalist, independent, cooperation, and integrity, without having any status differences, involving the role of students as peer tutors with an element of play (Alexandro, 2021). If this model is implemented, it can increase the motivation and creativity of students in participating in class learning, and interaction can occur in groups so that students accept group members who have different knowledge and can learn to accept different opinions (Vebrianto & Thahir, 2021).

This model has several advantages, namely (a) It makes bright students more prominent in learning, and students with medium and low abilities are also active in participating in learning because they are also given roles or assignments in their groups. (b) Cooperation fosters a sense of togetherness and mutual respect

among group members. (c) Make students more enthusiastic about following the lesson. Because the teacher promises awards to the best students or groups for those who win a tournament or competition. (d) Makes students more happy and enthusiastic in participating in learning because of game and competition activities (tournaments). However, the drawbacks are that it takes a long time, teachers are required to be good at choosing learning materials that are suitable for this model, teachers must prepare this model well before it is implemented, and must know the academic order of students from highest to lowest.

Previous research revealed that applying the type cooperative learning model Team Games Tournaments (TGT), succeeded in increasing physics learning activities in class X BKP3 1 Denpasar Vocational High School. Another research is that applying the TGT cooperative learning model (Teams Games Tournament) can increase the learning motivation of students in class XI IPS 1, Lubuk Basung 1 High School. The TGT-type cooperative learning model is a learning model that can develop knowledge, abilities, and skills as a whole in a fun and competitive learning atmosphere inside the learning process. In addition, applying the TGT-type cooperative learning model increases student learning outcomes (Siregar et al., 2021). The cooperative learning model is a learning model that groups students into small groups with different abilities and works together to complete assignments (Anugrah et al., 2020).

Based on the problems presented above, learning Pancasila and Citizenship Education using the TGT-type cooperative learning model is expected to be a solution. This is due to the type of cooperative learning models Teams Games Tournament (TGT) is a type of cooperative learning model that collaborates three main activities, namely group learning (Teams), Games, and competitions between groups (Tournaments) to achieve learning objectives. This study aims to determine the effect of the TGT cooperative learning model on student learning outcomes in learning Pancasila and Citizenship Education. The benefit of this writing is to increase knowledge and understanding of TGT-type cooperative learning on learning outcomes.

METHODS

The method of measuring learning outcomes uses a quantitative approach with quasi-experimental methods. The data processing technique uses test instruments in the form of multiple choice questions, which are tested for validity beforehand by a team of experts. The percentage results obtained are 86.5% (very feasible). Then the questions were tested for validity by students. Out of 25 questions, only 20 were valid. Then, the valid questions were tested for reliability, and the value of r count $>$ table ($0.947 > 0.444$) was obtained. This indicated that the questions were reliable and feasible to collect data. The data analysis technique uses the "t" test with the help of the SPSS 22 program for Windows and tests the N-gain score. The hypothesis in this study consists of:

H₀: There is no difference in the pretest/posttest results of the control class and the class experiment.

H_a: There are differences in the results of the pretest/posttest of the control

class and the class experiment.

Quantitative research collects numerical data, which is analyzed using mathematical/statistical methods (Mirdayanti et al., 2022). The experimental design used was a quasi-experiment with a pretest-posttest control group design. The population of this research is students of class XI of 1 Cikedung Vocational High School, Indramayu Regency. The sample of this research is the students of class XI Clinical and Community Pharmacy (FKK) and XI Multimedia (MM) 1 1 Cikedung Vocational High School, who was taken with the technique of purposive sampling. Class XI FKK is the experimental class, and Class XI MM 1 is the control class.

RESULTS & DISCUSSION

Results Pretest and Posttest Control Class and Experiment

This study measured student learning outcomes by administering pretests and post-tests. The pretest was given first before being given treatment for both the control class and the experimental class. The purpose of the pretest is to measure students' initial abilities according to specific instructional objectives before participating in the learning process. At the same time, the post-test aims to measure students' abilities after receiving learning material (Hakim, 2022). The post-test was given after applying the TGT cooperative learning model to the experimental class and the conventional learning model to the control class. The following are the results of the pretest and post-test of students' learning outcomes in learning PPKn on system material and the dynamics of Pancasila democracy.

Table 1. Pretest results for Control Class and Experiment Class

Score	Qualification	Control class		Experiment Classes	
		total	%	total	%
95-100	Special	0	0	0	0
80-95	Very good	0	0	0	0
65-80	Good	0	0	0	0
55-65	Enough	0	0	0	0
40-55	Not enough	8	42,1	5	17,2
0-40	Very Less	11	57,9	24	82,8
Total		19	100	29	100
Average		35		17,24	

There is Table 1, where it is known that the percentage of results from the pretest of the control class and the experimental class have different results. In the control class, 19 students obtained different pretest scores. 11 students were of inferior qualifications, with a percentage of 57.9%. 8 students need to be more qualified, with a percentage of 42.1%. Meanwhile, 29 students also obtained different pretest scores in the experimental class. 24 students were of inferior qualifications, with a percentage of 83.9%. 24 students were of inferior

qualifications, with a percentage of 83.9%. 5 students need to be more qualified, with a percentage of 17.2%. The choice of XI FKK as the experimental class was because the number of students who scored significantly less was more than that of class XI MM1. By applying the TGT-type cooperative learning model, it was hoped that it could improve learning outcomes.

Table 2. Results Post-test Class Control and Experiment

score	Qualification	Control class		Experiment Classes	
		total	%	total	%
95-100	Special	2	10,5	9	31
80-95	Very good	7	36,9	8	27,6
65-80	Good	9	47,4	10	34,5
55-65	Enough	1	5,2	2	6,9
40-55	Not enough	0	0	0	0
0-40	Very Less	0	0	0	0
Total		19	100	29	100
Average		77,89		82,06	

Based on Table 2, it is known that the posttest results for the control class and the experimental class have different qualifications. Of the 19 students in the control class, there were 2 students (10.5%) with special qualifications, 7 students (36.9%) with very good qualifications, 9 students (47.4%) with good qualifications, and 1 student (5.2%) is sufficiently qualified. As for the 29 students in the experimental class, there were 9 students (31%) with special qualifications, 8 students (27.6%) with very good qualifications, 10 students (34.5%) with good qualifications, and 2 students (6.9%) sufficiently qualified.

Based on the post-test results in the control and experimental classes, using the model Teams Games Tournament (TGT) in learning PPKn on system material and the dynamics of Pancasila democracy affect student learning outcomes. These results follow those of, which state that the TGT-type cooperative learning model influences student learning outcomes (Limbung & Prabowo, 2022).

Results and Discussion of Normality Test and Homogeneity Test

Before the "t" test was carried out, the normality and homogeneity tests were first carried out. The normality and homogeneity test results can be seen in table 3.

Table 3. Output of Normality and Homogeneity Tests

Posttest Data Analysis	Control class (KK)	Experiment class (KE)	Description
Normality Test (Exact Sig.(2-tailed)	0,893 > 0,05	0,437 > 0,05	Normal distributed data
Homogeneity Test (Based on Mean)	0,330 > 0,05		Both data are homogeneous

Based on the results of normality testing, obtained Exact Sig. (2-tailed) of $0.893 > 0.05$ in the control class data (XI MM 1), which indicates that the data is usually distributed. Meanwhile, Exact Sig. (2-tailed) the experimental class (XI FKK) is $0.286 > 0.05$, showing that the data is usually distributed. Therefore, both data are typically distributed. In addition, in the data homogeneity test, the Based on Mean value is $0.330 > 0.05$, so the two data are homogeneous.

Test Results and Discussion Independent Sample T-Test during Pretest

After carrying out normality and homogeneity tests, the next step is to perform a different test or t-test. In this study, researchers used the independent sample t-test. The normality test results show that the data is normally distributed, but the homogeneity test results show that the data is not homogeneous. Despite the data being heterogeneous, Erna et al., (2020) state that an independent sample t-test can still be conducted. This is because in the test, independent sample t-test, homogeneous or not, and the data is not an absolute requirement. The output results of calculations on statistical software (SPSS) are based on tables "Equal variance not assumed" in decision making. The results of testing an independent sample t-test can be seen in Table 4.

Table 4. Test Results Independent Sample t-test Control and Experiment Class Pretest

		t-test equality of means	
		T	df
PRETEST	Equal variances assumed	4.485	46
	Equal variances not assumed	4.960	45.726

Based on Table 4, decisions are made by comparing value count with the t value obtained from statistical table data with a significance of 0.05 and a two-tailed test. The mark t-count (Equal variances not assumed) obtained is 4.960, and the table corresponding to the degrees of freedom (df) $n-2 = 46-2 = 44$ is 2.015. Because of a value greater than table ($4,960 > 2,015$), then the null hypothesis (H_0) is accepted, and the alternative hypothesis (H_a) is rejected. There is no significant difference between the pretest results of the control class and the experimental class.

Results and Discussion of the T-Sample Independent Test during the Post-test

After conducting tests to check normality and homogeneity, the next step is to perform a different test using the t-test. In this study, researchers used a test-independent sample t-test. Based on the normality test results, it is known that the data is usually distributed, and in the homogeneity test, the data is proven homogeneous. Therefore, in determining the results of SPSS calculations, decisions are based on tables "Equal variance assumed" because both data have normal and homogeneous distribution. Test results independent sample t-test post-test can be seen in table 5.

Table 5. Test Results Independent Sample t-test Post-test Control class and Experiment

		t-test equality of means	
		T	df
PRETEST	Equal variances assumed	-1.039	46
	Equal variances not assumed	-1.065	41.786

Decision are taken by comparing t values count with the table. In this case, the output results show the value of tcount (Equal variances assumed) of 1.039. Markt table can be found in the statistical table with a significance of $0.05:2 = 0.025$ (2-tailed test) with degrees of freedom $(df)n-2 = 46-2 = 44$, and the value obtained table of 2.015. Because the value count was smaller than the table ($1.039 < 2.015$), then the null hypothesis (H_0) was rejected, and the alternative hypothesis (H_a) was accepted. Therefore, there are differences between the post-test results of the control class and the experimental class.

Test Results and Discussion N-Gain Score

To see how big the differences in the pretest and posttest results of students in the control and experimental classes, as well as whether the use of conventional learning models (lectures and discussions) in the control class and the use of the TGT type cooperative learning model in the experimental class for system material and the dynamics of Pancasila democracy affecting student learning outcomes, a test was carried out N-gain score as a final test. This study uses SPSS 22 calculations for Windows, and the SPSS output results are in Table 6, while the division of the N-Gain scores can be seen in Table 6.

Table 6. Test Calculation Results N-Gain Score

		Mean	Minimum	Maximum
<i>N-Gain Score</i>	Control Class	0.6594	0.33	1.00
	Experiment Class	0.7646	0.33	1.00

Based on the test calculations N-gain score, they obtained each class's average, minimum, and maximum values. For the control class (conventional learning), the average value is the obtained N-gain score of 0.6564, included in the medium category with a range of values N-gain score of minimum 0.33 and maximum 1.00. Meanwhile, for the experimental class (which uses the TGT model), the average value N-gain score is 0.7646, which is included in the high category based on the distribution of gain scores. The value range N-gain score minimum and maximum are 0.33 and 1.00. The conventional learning model has a moderate effect on the learning outcomes of students in class XI MM 1 (control class). While learning using TGT on system material and the dynamics of Pancasila democracy significantly influence student learning outcomes in class XI FKK (experimental class).

The quantitative data analysis using the N-gain score test revealed a significant influence of the TGT-type cooperative learning model on student

learning outcomes, with a magnitude of influence at 0.7646. The achievement of learning outcomes shows an increase in student learning outcomes after the model is applied Teams Game Tournament (TGT) and high students obtain learning mastery. This follows the research results, which state that the Teams Games Tournament (TGT) learning model can improve student learning outcomes (Sari et al., 2022).

Thus, the use of the TGT-type cooperative learning model affects the achievement of student learning outcomes in subjects PKn. This is supported by the results of testing the hypothesis, which states that applying cooperative learning models Teams Game Tournament (TGT) influences the learning outcomes of class XI FKK students at 1 Cikedung Vocational High School, Indramayu Regency. This is in line with the results of previous research, which stated that the use of the TGT-type cooperative learning model had a positive and significant effect on student learning outcomes (Mardani & Sadyana, 2022). The results of this study provide a reference that to improve student learning outcomes, teachers must be selective and creative in choosing and implementing appropriate and efficient learning models. This follows previous research statements, which say that the method of presenting lessons is one of the factors that determine the success of student learning, so teachers must master the subject matter presented and choose the correct method of teaching (Alexandro, 2021).

One of the learning models recommended by researchers to be applied to learning PKn is Models Teams Game Tournament (TGT). The cooperative learning model is a learning model that groups students into small groups with different abilities and works together to complete assignments (Lestari et al., 2023). The cooperative learning model used in this study is the Teams Games Tournament (TGT) type. The TGT type of cooperative learning is a learning model that is easy to apply, involves the activities of all students without differences in status, involves the role of students, and contains elements of play (Aji, 2020).

CONCLUSION

The Teams Games Tournament (TGT) Cooperative Learning Model has proven to be very effective in improving Civics learning outcomes for Class XI FKK students at SMK Negeri 1 Cikedung, Indramayu Regency. The application of this innovative learning approach to learning Pancasila Democracy Dynamics and System Materials has resulted in noteworthy improvements. By comparing the pretest and posttest scores of student learning outcomes, it can be seen that the experimental class obtained an average score of 82.06, while the control class obtained a score of 77.89. This difference indicates a significant increase in learning outcomes after the application of the TGT cooperative learning model. The use of active and innovative learning strategies has contributed to this important advance.

The significance of post-test results on pre-test results in the experimental class strengthens the idea that learning outcomes increase significantly after using the TGT cooperative learning model. Statistical analysis using the t test supports

this finding, because the calculated t value (1.039) is smaller than the critical t table value (2.015) at a significance level of 0.025. Thus, the null hypothesis (H₀) is rejected, and the alternative hypothesis (H_a) is accepted, which confirms the substantial effect of the TGT cooperative learning model on Civics learning outcomes is in the high category. To further motivate students to excel in their studies, it is advisable to recognize and reward successful students with awards. These incentives can serve as motivation for students to continue working towards improving learning outcomes, which ultimately benefits their overall academic progress.

In conclusion, the Teams Games Tournament (TGT) Cooperative Learning Model has demonstrated its suitability and efficacy in improving Civics learning outcomes for class XI FKK students at SMK Negeri 1 Cikedung, Indramayu Regency. The positive results obtained from the pretest and posttest, as well as statistical analysis, support the effectiveness of this innovative and active learning approach. By recognizing and encouraging student achievement, the desired learning outcomes can be further enhanced.

REFERENCES

- Aji, S. H. (2020). Increasing HOTS of High School Students Using Mobile Technology and Scaffolding Approach: Study on Physics Learning. *JTP-Jurnal Teknologi Pendidikan*, 22(3), 182–199.
- Alexandro, R. (2021). Teacher's Strategy in Managing Classes in Online Economics Learning to Increase Motivation and Achievement in Economics Learning for Class XI Social Sciences. *JTP-Jurnal Teknologi Pendidikan*, 23(3), 235–247.
- Amin, A., & Lestari, M. (2021). Student Perception Of Interactions Between Students And Lecturers, Learning Motivation, And Environment During Pandemic Covid-19. *JTP-Jurnal Teknologi Pendidikan*, 23(3), 248–260.
- Anugrah, A., Ibrahim, N., & Sukardjo, M. (2020). How Flipped Classroom Helps the Learning in the Times of Covid-19 Era? *JTP-Jurnal Teknologi Pendidikan*, 22(3), 151–158.
- Arum, A. P. (2020). Strategi Pembelajaran Kooperatif Pada Mata Kuliah Penataan Rambut. *JTP-Jurnal Teknologi Pendidikan*, 22(2), 132–139.
- Emita, C., & Lukas, S. (2022). The Effect of Learning Independence, Self-Regulation, and Social Support on Learning Achievement among Psychology Department Students X University in Covid-19 Pandemic Era. *JTP-Jurnal Teknologi Pendidikan*, 24(3), 283–294.
- Erna, M., Irfandi, I., & Rasmiwetti, R. (2020). Development of Learning Media Based on Autoplay Chemistry to Improve Students' Communicative Characters on Chemistry. *JTP-Jurnal Teknologi Pendidikan*, 22(3), 167–181.
- Hakim, Y. (2022). The Development of Android-Based Mobile Learning on Materials for Preparation and Proclamation of Indonesian Independence for Class VIII Blind Students at MTs Yaketunis Yogyakarta. *JTP-Jurnal Teknologi Pendidikan*, 24(1), 93–104.

- Harendita, M. E., & Kristianto, I. I. (2022). Facilitation Strategies in Online Group Work from the Perspective of Community of Inquiry. *JTP-Jurnal Teknologi Pendidikan*, 24(2), 184–196.
- Jusuf, H., Ibrahim, N., & Suparman, A. (2021). Development of virtual learning environment using canvas to facilitate online learning. *JTP-Jurnal Teknologi Pendidikan*, 23(2), 153–168.
- Kurniawan, C., Fajarianto, O., Sari, I. N., Wulandari, T. C., & Marlina, E. (2022). Assessing Learning Management System (LMS) for The Dairy Farmer: Obstacles to Delivering Online Learning Content. *JTP-Jurnal Teknologi Pendidikan*, 24(3), 341–352.
- Lestari, N., Winarsih, M., & Kusumawardani, D. (2023). The Use of Meaningful Learning in Distance Learning. *JTP-Jurnal Teknologi Pendidikan*, 25(1), 42–53.
- Limbung, A. M. N., & Prabowo, S. (2022). Training on the Development of Utilization of Digital Teaching Materials for Teachers to Improve Student Learning Outcomes. *JTP-Jurnal Teknologi Pendidikan*, 24(3), 400–411.
- Mardani, D. M. S., & Sadyana, I. W. (2022). Educational Media in Japanese Language E-Learning: Teacher Selection/Preparation and Perception. *JTP-Jurnal Teknologi Pendidikan*, 24(2), 137–147.
- Mirdayanti, R., Ula, J., Ningsih, L. J., Lindawati, L., & Wardani, S. (2022). Teacher's experience towards online learning pre Covid-19 pandemic in Aceh. *JTP-Jurnal Teknologi Pendidikan*, 24(2), 148–157.
- Mulyati, I., Astuti, I., & Ernawaty, E. (2022). Development of canva application assisted learning media in class XII advanced study materials with 4-D models. *JTP-Jurnal Teknologi Pendidikan*, 24(3), 322–329.
- Sari, P. K., Arofatinajah, S., & Fajarianto, O. (2022). Development of Digital Comic on Thematic Learning to Improve Literature Skills of 5th Grade Students in Elementary School. *JTP-Jurnal Teknologi Pendidikan*, 24(1), 38–49.
- Siregar, N., Siregar, H., & Hutahaeen, H. (2021). Application of the Picture and Picture Type of Cooperative Learning Model in Improving Student Learning Creativity. *JTP-Jurnal Teknologi Pendidikan*, 23(1), 23–36.
- Vebrianto, R., & Thahir, M. (2021). Evaluation on the use of online comics among students: Development studies at Universitas Terbuka. *JTP-Jurnal Teknologi Pendidikan*, 23(1), 37–48.
- Wahyuni, D. R., Aulia, V., & Boer, R. F. (2021). Instructional Communication Process in Online Learning (School From Home) during Covid-19 Pandemic. *JTP-Jurnal Teknologi Pendidikan*, 23(2), 81–94.
- Zulhelmi, Z., Fauza, N., Syaflita, D., Pratiwi, J., Wijaya, T. T., & Hermita, N. (2023). Development of Learning Media to Improve Students' Higher Order Thinking Skills in Circular Motion Material. *Jurnal Penelitian Pendidikan IPA*, 9(4), 1734–1740.