



The influence of cooperative learning model types of teams games tournaments on students' critical thinking ability

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ABSTRACT

This study aims to determine the effect of the TGT learning model which has an impact on consistent changes in students' critical thinking skills in Social Science subjects. The study used a quantitative approach with a pretest-posttest control group design. The research sample was students of MTs N 4 Sidoarjo Class VIII determined by the cluster proportional random sampling technique. The experimental class is taught using the TGT model and the control class is using the discussion learning model. Both research classes were measured critical thinking ability. The data obtained were tested using Independent-sample t-test to see the difference in the two research classes to see the difference between the pretest and posttest of critical thinking skills. The results showed that there was a positive influence on students' critical thinking skills in using the TGT model. In the experimental class taught using the TGT learning model, their critical thinking skills were better than the discussion learning model. The final assessment shows that critical thinking skills show Sig. (2-tailed) 0.011 < 0.05, which means that there is a significant difference. The existence of a significant difference indicates that there is an effect of the TGT learning model on students' critical thinking skills.

INTRODUCTION

Schools are required to change a teacher-centered learning approach to a student-centered learning approach. This is following the demands of the future world of children who must have thinking and learning skills. Septikasari and Frasandy (2018) say that these skills include problem-solving skills, critical thinking, collaboration, and communication skills. All of these skills can be possessed by students if the teacher is able to develop lesson plans that contain activities that challenge students to think critically in solving problems. Critical thinking is a systematic process that allows students to formulate and evaluate their own beliefs and opinions. Critical thinking is an organized process that allows students to evaluate the evidence, assumptions, logic and language that underlie other people's statements. Critical thinking is a manifestation of learning behavior, especially those related

to problem solving. Suprijono (2017) says that critical thinking is a thinking process that occurs in someone who aims to make rational decisions about something that he can believe is true. This is in accordance with the opinion of Slavin (2015) that critical thinking is important to deal with such rapid and rapid changes. Educators, policy makers, and entrepreneurs have shown a continuing interest in teaching critical thinking, both as an important life skill and an asset to the workforce of tomorrow (Koenig et al., 2011).

Sardiman (2012) suggests that Social Education (IPS) is a subject designed based on problems, phenomena and social realities with an interdisciplinary approach. The competencies and objectives of social studies learning in general are to guide, deliver and develop the potential of students to become good citizens who can develop critical thinking skills so that they can understand, respond to, and

contribute to solving social problems and build commitment to human values and participate develop the noble values of the nation's culture.

So far, social studies learning is underestimated by students because most of the material is only in the form of memorization when in fact social studies learning is very important because it can help students adapt and deal with social problems that occur in society (Ratnawati, 2016). This makes most students have difficulty in learning social studies and consider social studies materials difficult to remember and understand (Nurulanjani, 2018). Furthermore, the weakness of social studies learning is also seen in the research conducted by Feriady et al. (2012) stated that Social Studies is considered a boring subject. Another study on social studies learning conducted by Tjahjono and Aji (2010) stated that students were less active and enthusiastic in participating in learning because the variety of social studies learning was still lacking because teachers only used traditional methods that put the teacher as an information center.

Darmayoga, Lasmawan & Marhaeni (2013) stated that when compared to conventional learning methods, the Mind Mapping learning method seemed to emphasize student involvement. Students become more actively involved in the learning and assessment process for making a decision. Students will no longer feel that social studies learning is a rote, boring and meaningless lesson. While Novianti, C. (2014). Stating that when the learning process takes place, students look less enthusiastic in participating in learning, students do not dare to express opinions, and consider social studies lessons to be very boring because they are rote.

Astuti, Zulfan, & Haikal (2020). Social Studies is an integrated learning which is seen as a lesson with a lot of material. This is what makes social studies learning boring by some students. Teachers as educators, mentors, trainers and instructors are required to create interesting, creative, effective learning that does not bore students and involves interactive students in the learning process. Meanwhile, Arief & Srihastuti (2017) stated that social studies lessons tend to be boring causing students' interest in learning to be low. Oktavian (2021) in his research stated that there was an assumption from students that social studies was a lesson that was less interesting, boring, and boring so that their low interest in following the process learning which results in the acquisition of low learning outcomes.

Sapriya (2009) said "In the field of social studies education (PIPS), both school-based and community-based, the challenges faced are not simple. An urgent challenge that needs to be answered is related to efforts to improve the quality (quality) of education. One of the variables that has a significant contribution to the good or bad quality of education is the element of the teacher or educator.

The learning process with the discussion model often experiences difficulties so that in this process there are many obstacles including 1) the lack of familiarity of students working in groups so that it is often dominated by more intelligent students 2) lack of effective communication between group members about the material being studied 3) lack responsibility between individuals for the completion of the tasks given in each group so that learning is often not completed within the allotted time. In general, cooperative learning is considered more teacher-directed, in which the teacher assigns tasks and questions and provides materials and information designed to help students solve the problem in question. Teachers usually set a certain form of exam at the end of the assignment (Suprijono, 2017).

Various studies of the Teams Games Tournaments type of cooperative learning model have been carried out. In line with the research of Veloo, Chairhany (2013: 61), Salam, Hossain, Rahman (2015) there was a significant effect between groups using the Teams Games Tournaments (TGT) teaching model and groups using conventional teaching methods. Another research on the TGT Model was conducted by Purwanti, Sari, Husana (2012). The study entitled Implementation of Physics Monopoly Game as a Learning Media in Cooperative Learning Type TGT to Improve Learning Achievement and Knowing the Profile of Critical Thinking Ability of Junior High School Students in Sumedang Regency.

Research conducted by Yuliyanti & Sunarsih (2019) states that there are significant differences in critical thinking skills between students who use the TGT type Cooperative learning model and students who use conventional learning models. Meanwhile, the results of Maisaroh's research (2011) state that the TGT type cooperative learning model can increase students' motivation and learning achievement. These facts indicate an increase in students' understanding of the material being studied, namely technological developments. The results showed that there was a change in students' learning levels in the classroom. While Pangestuti, Susilo, & Zubaidah (2014). Stating that the Biology learning model based on Reading - Concept Map - Teams Games Tournaments can improve the critical thinking skills of grade X IPA 4 SMA Laboratorium UM students.

By using the Teams Games Tournaments method, it is hoped that learning will be more interesting and not boring for students. According to Lie (2008) there needs to be a paradigm shift in studying the learning process of students and interactions between students and teachers. According to Zakaria and Iksan (2007), group/cooperation learning is believed to be the most effective because students are actively involved in sharing ideas and work to complete academic assignments. Learning by cooperation (coopera -

tive learning) can be done in a pleasant atmosphere, such as with games or games. The type of cooperative learning that uses games is Teams Games Tournaments (TGT) learning. Based on the description that has been stated above, it can be seen that the TGT model has the potential to overcome problems regarding students' critical thinking skills. The author conducted a study entitled the effect of the TGT (Teams Games Tournaments) learning model on the critical thinking skills of students at MTs Negeri 4 Sidoarjo.

LITERATURE REVIEW

Teams Games Tournaments (TGT)

Teams Games Tournaments (TGT) is one of the cooperative learning strategies developed by Slavin to help students review and master the subject matter. Slavin (2013) found that TGT succeeded in improving basic skills, achievement, positive interactions between students, and acceptance attitudes of other students who were different. This type of TGT cooperative learning model is a learning model that is easy to apply, involves the activities of all students without having any status differences, involves the role of students as peer tutors and contains elements of games and reinforcement.

Cooperative learning is a constructivism-based learning model. The view of learning according to the theory of constructivism states that science must be built by students in their own minds through the development of their mental processes, students themselves who build and create the meaning of their knowledge (Nur, 2011). Learning according to constructivism emphasizes the process of conceptual change. Thus, a teacher should try to encourage each student to construct social studies concepts through the application of learning models. One of the learning models that can facilitate this is cooperative learning type TGT.

Critical Thinking Ability

Critical thinking skills are indispensable in human life. There are a number of life problems that must be faced by humans which often require solving them appropriately, precisely and effectively. Solving problems quickly, precisely and effectively requires special skills, which are skills in critical thinking skills. Thinking is an activity that humans always do, even when they are asleep. For the brain, thinking and solving problems is the most important work, even with unlimited abilities. Thinking is one of the most important forces and is a characteristic that distinguishes humans from animals. According to Sardiman (2012), thinking is a mental activity to be able to formulate understanding, synthesize, and draw conclusions. Ngalm Purwanto (2007), argues that thinking is an activity of the human person that results in discovery directed to a goal. Humans think to find the understanding/understanding

they want. Santrock (2011) also expressed his opinion that thinking is manipulating or managing and transforming information in memory.

According to Santrock (2011), critical thinking is reflective and productive thinking, and involves the evaluation of evidence. Jensen (2011) argues that critical thinking means an effective and reliable mental process, used in the pursuit of relevant and correct knowledge about the world. Cece Wijaya (2010) also expressed his ideas about critical thinking skills, namely the activity of analyzing ideas or ideas in a more specific direction, distinguishing them sharply, selecting, identifying, reviewing and developing them in a more perfect direction.

Critical thinking is thinking well, and contemplating with the thinking process is part of thinking well. Ruggiero (in Johnson, 2014) defines thinking as any mental activity that helps formulate or solve problems, make decisions, or fulfill the desire to understand. The critical thinking skills developed refer to the critical thinking skills developed by Linn & Gronlund in Hadi (2007), namely comparing, connecting cause and effect, giving reasons, summarizing, concluding, arguing, grouping, creating, applying, analyzing, synthesizing, and evaluating. According to Murai of Lopez (2013) revealed that there are five categories of burnout symptoms. Burnout symptoms was due to physical exhaustion, emotional, behavioral, and interpersonal exhaustion. The most common physical symptoms that experienced by someone who feel exhausted are sleeping trouble, headaches, sniffles, flu and digestive problems. Meanwhile, emotional symptoms are feeling of helplessness, anxiety, irritability, guilt and depression. According to Genç, (2016) there are five levels that usually happen to someone who experienced burnout symptoms. First level, there is dissatisfaction of working, so that it could deplete the energy, lack of time efficiency at work. The second level begins to feel a lack of energy to work, it caused less of sleep till easy to get tired. The third level that they experienced has caused more severe symptoms. This could be seen by the diseases, frequent feelings of anger, and depression. Fourth level is a deep depression marked by severe self-doubt and being obsessed with personal problems. Fifth level, self-hurting until terminate their career.

The multitude of negative impact of burnout become important to know the main factor which causing burnout according to McCarthy in Mullen & Gutierrez (2016), is because the demands that challenging as part of the job. The level of stress happened to counselor is caused by the workload that occurs over a long period of time. Affecting to emotional and physical health. Furthermore, the stress will be a bad impact to the Counseling Guidance's teachers performance enabling one's to leave his career. Beside that, according to Wilkerson & Weldini in Kim & Lambie (2018) said that there are connection between burnout symptoms'

factors with demography where age and experience shows connection with fatigue of work.

METHOD

This type of study uses experimental research. This study was conducted by comparing the effects of different learning treatments, namely by using the experimental class and the control class. The experimental class (VIIIA, 30 students) is the class that is treated with the Cooperative Teams Games Tournaments learning model, while the control class (VIIB, 30 students) is the class that is treated with the discussion method. The design used in this study was a pretest-posttest randomized control design (Sugiono, 2012). This design was carried out pre-test before treatment and post-test after treatment to determine the effect of the learning model on students' critical thinking skills with the treatment. This research was conducted at the Madrasah Tsanawiyah Negeri 4 Sidoarjo in class VIII even semester of the 2020/2021 school year, Tulangan District, Sidoarjo Regency, East Java Province. Valid instruments are needed to obtain valid research results. Using valid and reliable instruments in data collection, it is hoped that the research results will be valid and reliable (Sugiyono, 2017). The technique used for data collection in this study is the provision of tests and observations. The instruments in this study were learning implementation sheets and critical thinking pretest posttest questions. The data analysis technique was by testing the data for normality and homogeneity, then continued with the T-test using the SPSS version 24.0 application

RESULTS AND DISCUSSIONS

In general, the implementation of the learning process in the two research classes went well. Based on the assessment of the observers in the two research classes, the results of the implementation of learning in the experimental class at the first meeting were obtained with an implementation value of 89.86% with a very good category. At the second meeting 91.17% with very good category. At the third meeting 91.67% with very good category. So, it can be concluded that the implementation of learning carried out in the experimental class is very good with an average implementation of 90.90%. While the implementation of research in the control class, the first meeting with a value of 88.69% in the very good category, the second meeting 89.17% in the very good category, the third meeting 88.33% in the very good category. So, it can be said that the implementation of research in the control class is very good with an average implementation of 88.73%. Prerequisite tests were conducted to determine the hypothesis test, to determine the difference in the effect of the Teams Games Tournaments learning model on students' critical thinking skills in the experimental class

and the difference in the effect of the discussion learning model on students' critical thinking skills in the control class, a hypothesis test was conducted. Prerequisite tests performed include distribution normality and homogeneity of variance tests.

The results of the normality analysis of the pretest data of students' critical thinking skills using the Kolmogorov-Smirnov statistical analysis assisted by SPSS 24.00 found that the significance level obtained was $0.200 > 0.05$. This indicates that H_0 is accepted, meaning that the data comes from a normally distributed population. The results of the posttest data normality analysis of students' critical thinking skills using Kolmogorov-Smirnov statistical analysis assisted by SPSS 24.00, it is known that the significance level obtained is $0.200 > 0.05$. This indicates that H_0 is accepted, meaning that the data comes from a normally distributed population.

The output results of the homogeneity of variance test obtained a value (Levene Statistics) of 2.325 with a significance level greater than 5% (0.05) which is 0.133 which means that students in the control group and the experimental group are the same (homogeneous), or in other words the diversity or variance of ability critical thinking of the control class students is the same as the experimental class. The output results of the homogeneity of variance test obtained a value (Levene Statistics) of 0.877 with a significance level greater than 5% (0.05) which is 0.353 which means that students in the control group and the experimental group are the same (homogeneous), or in other words the diversity or variance of ability critical thinking of the control class students is the same as the experimental class.

This hypothesis test (*Independent T-Test*) was carried out before the students received treatments, where the experimental class was treated with the TGT learning model and the control class used the Discussion model. Based on the SPSS 24.00 output in the table, it is known that the t_{count} value is 2,636 and t_{table} with a significance level of (5%) 0.05, degree of freedom (db) = (n-2) then obtained $t(0.05)(58)_{table} = 2.002$. Then the result of the value of $t_{count} > t_{table}$, which shows the result of $2,636 > 2,002$. Meanwhile, with a significance level of 5% (0.05) it has a significance value of < 0.05 , namely (2-tailed) $0.011 < 0.05$, so it can be concluded that there is a significant difference in critical thinking ability between the experimental class and the control class after being given treatment, meaning that between Experimental class and control class students have different critical thinking skills at the time of posttest. This is reinforced by the experimental class obtaining an average value of 76.63 and the control class having an average value of 70.40.

The results of this significant difference are also in accordance with previous research, such as that conducted by Novi Yuliyanti & Diah Sunarsih (2019) with the title

"The Effect of the TGT Type Cooperative Model on Mathematics Critical Thinking Ability of Grade IV Students". The results showed that there was a significant effect as evidenced by the difference in student learning outcomes achieved through a test in the form of open-ended questions between the experimental class that used the Teams Games Tournaments learning model and the control class that did not use the Teams Games Tournaments learning model. Student activity during the learning process in the experimental class was more active than the control class. The social cluster learning model encourages students to enter the real nuances where social problems are faced every day and students learn to overcome the problems they face on their own. Huda (2016) explains that the learning model in the category of social clumps emphasizes individual relations with society and other people. Its main objective is to help students learn to work together, identify and solve problems, both academic and social.

CONCLUSIONS

Based on the conclusions above, suggestions that can be submitted include the application of the TGT learning model is needed by teachers in the learning process in social studies subjects so that the learning carried out will be more active and communicative between teachers and students. Another thing with this learning model is that it will foster sensitivity, both teachers and students, to social problems in society. The improvement of students' critical thinking skills with the TGT learning model must be maintained and further improved. For this reason, it is necessary to train teachers and provide facilities in social studies learning that must be carried out by schools so that learning with this TGT model can develop and improve. The results of this study can be used as material for consideration for competent parties in compiling a more comprehensive social studies curriculum.

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Author's Contributions

All authors discussed the results and contributed to from the start to final manuscript.

Conflict of Interest

The authors declare that they have no competing interests.

REFERENCES

- Arief, Z. A., & Srihastuti, E. (2017). Hubungan antara Persepsi Siswa tentang Penggunaan Peta Indonesia dan Minat Belajar dengan Hasil Belajar IPS Siswa Kelas V SDN Ciangger 02. *Jurnal Teknologi Pendidikan*, 6(2). <http://dx.doi.org/10.32832/tek.pend.v6i2.507>
- Arif, Ahmad. (2016). Efektifitas Pembelajaran Koopertif Tipe TGT (Team Games Tournament) pada Materi Sistem Persamaan Linear Tiga Variabel di Kelas X (*Tesis Magister Pendidikan Matematika* tidak dipublikasikan), Universitas Negeri Surabaya
- Arikunto, S. (2012). *Prosedur penelitian suatu pendekatan praktikif*. Jakarta : Rineka Cipta
- Astuti, D. T., Zulfan, Z., & Haikal, M. (2020). Pengaruh Penggunaan Media Papan Buletin Terhadap Minat Belajar IPS Siswa Kelas VIII SMP Negeri 20 Takengon. *JIM: Jurnal Ilmiah Mahasiswa Pendidikan Sejarah*, 5(4). 229-240.
- Bolhassan, N., & Taha, H. (2017, May). TGT for chemistry learning to enhance students' achievement and critical thinking skills. In *AIP Conference Proceedings*, 1847 (1), p. 050002. AIP Publishing LLC.
- Budiningsih, C. Asri (2003). Perkembangan Teori Belajar dan Pembelajaran Menuju Refolusi Sosiokultural Vygosky, *Dinamika Pendidikan* No. 01/Tahun X Maret 2003
- Cece, Wijaya. (2010). *Pendidikan Remedial: Sarana Pengembangan Mutu Sumber Daya Manusia*. Bandung: PT Remaja Rosdakarya.
- Cordero, L. A., Dodson, C. T., & De León, M. (2012). *Differential geometry of frame bundles* (Vol. 47). Springer Science & Business Media.
- Damayanti, N. W., Mayangsari, S. N., & Mahardika, L. T. (2017). Konstruksi Rumus Luas Lingkaran Berbasis Media Manipulatif dalam Setting Pembelajaran Kooperatif. *Jurnal Ilmiah Edutic: Pendidikan dan Informatika*, 3(2), 117-124.
- Darmayoga, I. W., Lasmawan, I. W., & Marhaeni, A. A. I. N. (2013). Pengaruh Implementasi Metode Mind Mapping Terhadap Hasil Belajar IPS Ditinjau dari Minat Siswa Kelas IV SD Sathya Sai Denpasar (*Doctoral dissertation*, Ganesha University of Education).
- Entin Solihatin, Raharja. (2012). *Cooperative Learning Analisis Model Pembelajaran IPS*. Jakarta, Bumi Aksara.
- Feriady, M., & Harnanik, H. (2012). Pengaruh persepsi siswa tentang keterampilan mengajar guru dan fasilitas belajar siswa terhadap minat belajar IPS kelas VIII SMP N 3 Purbalingga. *Economic Education Analysis Journal*, 1(2). 1-7
- Hadi, S. (2007). Pengaruh Strategi Pembelajaran Coopeative Script terhadap Kemampuan Berpikir Kritis, Keterampilan Metakognitif, dan Kemampuan Kognitif Biologi pada Siswa SMA Laboratorium Universitas Negei Malang (*Doctoral dissertation, Tesis*. Malang: Universitas Negeri Malang.
- Fitrianawati, M., & Hartono, H. (2016). Perbandingan keefektifan PBL berseting TGT dan GI ditinjau dari prestasi belajar, kemampuan berpikir kreatif dan toleransi. *Jurnal Riset Pendidikan Matematika*, 3(1), 55-65.
- Musmaryetti, M., Arief, Z. A., & Wibowo, S. (2019). Pengaruh Model Pembelajaran dan Minat Belajar Terhadap Hasil Belajar IPS Siswa kelas VIII SMP Sapta Marga Cibirong, *Jurnal Teknologi Pendidikan*, 8(2), 189-216.
- Nurlaela, Ela. (2012). dalam penelitian berjudul "Implementasi Model Pembelajaran Kooperatif Tipe Temas-Games -

- Tournamens untuk meningkatkan kemampuan Berpikir Kritis dan Penalaran Matematis Siswa Madrasah Aliyah. Universitas Pendidikan Indonesia. Bandung,
- Nurulanjani, D. (2018). Peran Media Time Lines Chart Dalam Pembelajaran IPS di Sekolah Dasar. *Mimbar Sekolah Dasar*, 5(1), 43-50.
- Oktavian, C. N. (2021). Meningkatkan Minat dan Hasil Belajar Ilmu Pengetahuann Sosial Melalui Metode Quantum Learning Teknik Memori dengan Permainan Whispering. *Jurnal Ilmiah Pro Guru*, 4(2), 207-220.
- Pangestuti, A. A., Susilo, H., & Zubaidah, S. (2014). Penerapan Model Pembelajaran Biologi Berbasis Reading–Concept Map–Teams Games Tournaments untuk Meningkatkan Kemampuan Berpikir Kritis dan Hasil Belajar Kognitif Siswa Kelas X IPA 4 SMA Laboratorium UM. In *Proceeding Biology Education Conference: Biology, Science, Enviromental, and Learning*, 11(1). pp. 963-938.
- Primadani, A. I. (2020). Mathematical Reasoning and Communication in TGT Learning Model with PQ4R Strategy. In *Journal of Physics: Conference Series*, 1613 (1) p. 012022). IOP Publishing.
- Raikhan, R. (2014). Paradigma Pengetahuan Barat dan Islam. *Madinah: Jurnal Studi Islam*, 1(1), 49-62.
- Ratnawati, E. (2016). Pentingnya Pembelajaran IPS Terpadu. *Edueskos: Jurnal Pendidikan Sosial & Ekonomi*, 2(1).
- Ratumanan, T. G. (2004). *Belajar dan Pembelajaran: Edisi Kedua*. Ambon: Unesa.
- Rohsiah, M. (2019). Penerapan Pembelajaran Geometri dengan Pendekatan Konstruktivis Sebagai Upaya Peningkatan Penalaran Logis Siswa. *SCHOLASTICA: Jurnal Pendidikan dan Kebudayaan*, 1(1), 81-91.
- Salam, A., Hossain, A., & Rahman, S. (2015). Effects of Using Teams Games Tournaments (TGT) Cooperative Technique for Learning Mathematics in Secondary Schools of Bangladesh. *Malaysian Online Journal of Educational Technology*, 3(3), 35-45.
- Salam, A., Hossain, A., & Rahman, S. (2015). Effects of Using Teams Games Tournaments (TGT) Cooperative Technique for Learning Mathematics in Secondary Schools of Bangladesh. *Malaysian Online Journal of Educational Technology*, 3(3), 35-45.
- Santrock, John W. (2011). *Perkembangan Anak Edisi 7 Jilid 2*. (Terjemahan: Sarah Genis B) Jakarta: Erlangga
- Sapriya. (2009). *Pendidikan IPS konsep dan pembelajaran*. Badung: PT Remaja Rosdakarya.
- Sardiman, A.M. (2012). *Interaksi dan Motivasi Proses Belajar Mengajar*. Jakarta: PT. Raja Grafindo Persada.
- Septikasari, R., & Frasandy, R. N. (2018). Keterampilan 4C Abad 21 dalam Pembelajaran Pendidikan Dasar. *Tarbiyah al-Awlad*, 8(2), 107-117.
- Sianturi, C. A. (2018). Pengaruh Model Pembelajaran Problem Based Learning (PBL) terhadap Kemampuan Pemahaman Konsep dan Berpikir Kritis Peserta Didik di SMP Negeri 2 Siempatnempu Hulu TP 2017/2018.
- Siki, F. (2019). Problematik Strategi Pembelajaran Bahasa Indonesia. *Jubindo: Jurnal Ilmu Pendidikan Bahasa dan Sastra Indonesia*, 4(2), 71-76.
- Slavin, R. E. (2017). *Psikologi Pendidikan Teori dan Praktik*. (Samosir, penerjemah). Jakarta Barat: PT Indeks
- Slavin, Robert E. (2009). *Cooperative Learning (Teori, Riset, Praktik)*. Bandung: Nusa Media
- Slavin, R. E. (2015). Cooperative Learning in Schools. *International Encyclopedia of the Social & Behavioral Sciences*, 4(1).
- Solihatin, Raharjo. (2012). *Cooperative Learning Analisis Model Pembelajaran IPS*. Jakarta: Bumi Aksara
- Sugiono. (2012). *Statistika untuk penelitian*. Bandung : Alfabeta.
- Suprihatiningrum, J. (2016). *Strategi Pembelajaran: Teori & Aplikasi*. Jogjakarta: Ar-Ruz Media.
- Suprijono, Agus. (2016). *Model-model Pembelajaran Emansipatoris*. Yogyakarta : Pustaka Pelajar
- Suprijono, Agus. (2017). *Cooperative Learning Teori & Aplikasi Paikem*. Yogyakarta: Pustaka Pelajar
- Syaifuddin, T., Nurlela, L., & Prasetya, S. P. (2020). The Effect of Cooperative Learning Model Type Team Games Tournaments (TGT) and Learning Motivation on Student Learning Outcomes. In *International Joint Conference on Arts and Humanities (IJCAH 2020)* (pp. 1390-1394). Atlantis Press.
- Yuliyanti, N., & Sunarsih, D. (2019). Pengaruh Model Cooperative Tipe TGT Terhadap Kemampuan Berpikir Kritis Matematika Siswa Kelas IV. *Jurnal Ilmiah Kontekstual*, 1(01), 45-53.
- Yunanda, H., Advinda, L., & Sumarmin, R. (2018). Effects of cooperative learning model type games teams tournament (TGT) and entry behavior student to learning competence class XI IPA senior high school 1 Lengayang. *International Journal of Progressive Sciences and Technologies*, 6(2), 329-339.
- Zakaria, E., & Iksan, Z. (2007). Promoting cooperative learning in science and mathematics education: A Malaysian perspective. *Eurasia Journal of Mathematics, Science and Technology Education*, 3(1), 35-39.
- Zulkifli, L. (2015). Pengembangan petunjuk praktikum biologi dan instrumen penilaian kinerja praktikum berbasis model pembelajaran kooperatif dan efektivitasnya terhadap kemampuan berpikir kritis siswa SMA/MA Kelas XI. *Jurnal Penelitian Pendidikan IPA*, 1(2).