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THE EFFECT OF THE STUDENT TEAM-ACHIEVMENT DIVISION *TYPE COOPERATIVE LEARNING MODEL* ON STUDENTS' CRITICAL THINKING SKILLS

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ABSTRACT

Improving critical thinking skills is important because it helps students analyze information, make accurate decisions, solve problems logically, and avoid accepting information blindly. This study aims to prove the influence of the student team achievement divisions (STAD) learning model on students' critical thinking skills in the entrepreneurship subject for 11th-grade students at SMK YP Gajah Mada Palembang. The method used in this research is an experimental method. The target population consists of 125 11th-grade students at SMK YP Gajah Mada Palembang, and the sampling technique employed was cluster random sampling, resulting in class XI.7 being selected as the experimental class. Data collection in this study utilized a test instrument, while data analysis techniques included test result analysis and observation. The prerequisite test used was the Chi-Square test for normality, and the hypothesis testing employed the Paired Sample t-test. The t-test results showed a of 18.74 and a value of 1.699, indicating that Ha is accepted and Ho is rejected, which means there is a proven influence of the STAD learning model on students' critical thinking skills in entrepreneurship. Based on this research, it is expected that students will better understand and retain their learning outcomes, and that learning improvements will continue to be encouraged to further enhance student achievement through active engagement. t_{count} t_{table}

Keywords: *STAD, Critical Thinking, Entrepreneurship*

INTRODUCTION

The rapid development of the times requires the world of education to continue to adapt, especially in shaping the character of students who are sensitive to change. Education as an important aspect of human life must follow the characteristics of students to be relevant to the times, including through the application of various new learning models that are able to provide variety and increase learning achievements. This change also encourages humans to think more critically, in response to the complexity of the times (Halim, 2022). Critical thinking involves the ability to analyze and solve problems, as well as allowing students to understand the material in their own way, making learning more interactive. Critical thinking skills are closely related to reasoning, which includes basic thinking, critical thinking, and creative thinking skills (Haris & Rachman, 2021).

The learning model can support the critical thinking process carried out by students. Learning models that are able to support students' critical thinking skills based on various researches include PJBL learning models, cooperative learning models, *problem solving* learning models, STAD learning models and others. According to Fahrezi, et al. (2020) The PJBL learning model is a learning model that applies problems as the first step in acquiring new knowledge based on concrete life activity experiences. Where in this model, students' ability to think critically must be prioritized in solving problems so that later the problems discussed can be solved properly. According to Rahayu (2024), teachers in carrying out learning should use a learning model that provides motivation to learn in students and is able to apply it well in the classroom so that it can create an interactive learning atmosphere, thus having an impact on increasing student learning outcomes. The learning model that will be the object of the research is the STAD type cooperative learning model. Based on

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research conducted by Ningsih & Wulandari (2022), the STAD-type learning model is more effective in improving the critical thinking skills possessed by students, especially in the learning process in the classroom.

Based on a survey conducted on October 1, 2024 of the principal and three teachers, it was found that the skills that students need to develop are critical thinking, problem-solving, and responsibility. Of the eight learning models in the curriculum, *the student team achievement divisions* (STAD) model is known to be rarely applied by teachers. The researcher then looked at a special problem in the entrepreneurship class, where students' critical thinking skills are still low even though the learning material is relevant to daily life. The ability to think critically, creatively, communicate, and collaborate are key elements in shaping the Pancasila student profile which is the main goal of the Independent Curriculum (Fatmawati, Jaya, Rasid, & Abubakar, 2025 in Amrina et al., 2025). This is due to the still conventional teaching methods and lack of interaction between students. The results of the interviews also revealed that the main obstacles in the implementation of the cooperative learning model are time constraints and lack of understanding of teachers. Therefore, it is recommended that schools provide training for teachers to implement cooperative learning models such as STAD to improve students' critical thinking skills. Based on this background, the researcher is interested in conducting a research entitled "The Influence of *the Students Team Achievement Divisions* (STAD) Type Cooperative Learning Model on Critical Thinking Skills in Class XI Entrepreneurship Subjects at SMK YP Gajah Mada."

This research has a new aspect because the focus is to examine the influence of *the student team achievement divisions* learning model on critical thinking skills in class XI social studies entrepreneurship subjects at SMK YP Gajah Mada Palembang. Although there are many studies that discuss *the student team achievement divisions* learning model, not many have examined its impact in the context of entrepreneurship lessons. *Student team achievement divisions* have the goal of having a great influence on critical thinking skills, especially in entrepreneurship lessons that are considered difficult.

METHODS

The research method used in this study is pre-experimental in the form of One Group Pretest-Posttest with a quantitative approach. In this design, researchers only compared the results of tests performed before treatment (O1) and after treatment (O2). Quantitative methods can be interpreted as research methods with numerical data through testing research hypotheses. According to Sugiyono (2019), the quantitative method is a research method based on the philosophy of positivism, used to study a population or sample and problems in research. Measurement of the variable of critical thinking ability as a bound variable will be given before and after the treatment using test questions for the independent variable (X) of the cooperative learning model of the type of student team achievement divisions (STAD) while the bound variable (Y) is Critical thinking ability

The population in this study is all grade 11 students at SMK YP Gajah Mada Palembang with a total of 5 classes and 125 students, XI TPM.1 as many as 26 students, XI TPM.2 15 students, XI TBSM.1 30 students, XI TBSM.2 26 students and XI TBSM.3 28 students. The sample selection in this study used *the Cluster Random Sampling technique* to select the experimental class and XI TBSM.1 was obtained as the experimental class.

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The data collection technique in this study uses tests and observations. A multiple-choice test was used to measure students' critical thinking skills before (*pretest*) and after (*posttest*) the application of *the student team achievement divisions* (STAD) learning model in entrepreneurship subjects in class XI TBSM 1. Meanwhile, observations were made to record student activities and involvement during the implementation of the STAD model. The observation sheets used have been validated by experts to ensure their feasibility and suitability with the indicators being studied.

In this study, the test instruments and learning modules prepared by the researcher were examined by experienced validators to adjust the instruments to the learning indicators. Before the test was deployed, a trial was carried out on 30 question items to measure validity using *the Pearson Product Moment formula*, with the aim of assessing the strength and direction of the relationship between items and the variables to be measured, so that the instrument used could be trusted and relevant in the context of the research. In addition, reliability tests are performed using the Alpha Cronbach method to assess the consistency of the data. The results of the external validity test were carried out with 30 valid questions, while the reliability test produced an r11 value of 0.905, greater than the rtable of 0.388.

The data analysis technique in this study was carried out descriptively to determine the percentage change in pretest and posttest results in the experimental class, as well as to analyze observation data to assess the suitability of the implementation of learning with the teaching module. Before the hypothesis test, a data normality test was first carried out using the Chi Square formula as a prerequisite for analysis. Furthermore, the hypothesis test was carried out using a paired sample t-test to determine the influence of *the student team achievement divisions* (STAD) type cooperative learning model on students' critical thinking skills in the entrepreneurship subject of class XI at SMK YP Gajah Mada.

RESULT AND DISCUSSION

This study consisted of three meetings, with the first meeting on May 19, 2025 which included the provision of treatment and the implementation of a pretest to measure students' critical thinking skills. The activity began with greetings, prayers, attendance checks, perceptions, and motivation. In the core activity, the researcher conveyed the learning objectives, divided the groups, explained entrepreneurship materials, gave group assignments, and ended with a presentation of the results of the discussion. The activity was closed with a review of the material, preparation of joint conclusions, and closing prayers.

The second meeting will be held on May 21, 2025 with material on entrepreneurial attitudes. The initial learning activities start from greeting students, checking the attendance of students, providing perception and motivation for learning, and conveying learning objectives. The core activity began with the teacher delivering the material on entrepreneurial attitudes using PPT supporting media to make it easier for students to understand the learning material, after finishing the researcher divided independent tasks into groups that had been formed to cooperate with each other to complete their tasks, then continued with the presentation of the results of the group's work interspersed with joint discussions in the classroom. The closing activity of learning starts with making a conclusion together, telling what will be done next week, and closing the class with a greeting.

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The third meeting will be held on May 24, 2025 with material on entrepreneurial behavior. The initial activity began with the researcher saying greetings, checking the students' attendance, providing perception and motivation to continue to be enthusiastic about learning, and conveying the learning objectives to be carried out. The core activity began with an explanation by the researcher of entrepreneurial attitude material with PPT as a supporting media which was then continued with group assignments and presentations just like the previous meeting. The closing activity began with giving posttest questions to students to fill out, this aims to see the improvement of students' abilities after receiving treatment for the application of the students team achievement division (STAD) type cooperative learning model.

Table 1. Student Test Results

Data	Smallest Value	Greatest Value	Rerata
Pre-Test	11	53	27,74
Post-Test	61	91	74,61

Source: Research Data, processed May 2025

There has been a significant increase in learning outcomes, as shown by the difference in average pretest and posttest scores of 46.87. The highest score also increased from 53 (*pretest*) to 91 (*posttest*). This supports the hypothesis that the improvement in learning outcomes is influenced by the use of the STAD learning model in learning.

Table 2. Students' *Pretest* and *Posttest* Results

Criterion %	F	Percentage *Pretest*	F	Percentage *Posttest*	Predicate
86-100	0	0,00%	4	13,33%	Excellent
71-85	0	0,00%	17	56,67%	Good
57-70	0	0,00%	9	30,00%	Enough
41-50	4	13,33%	0	0,00%	Less
<40	26	88,67%	0	0,00%	Very Less
Sum	**30**	**100%**	**30**	**100%**	

Source: Research Data, processed May 2025

Based on the table above, during the pretest, the majority of students with a predicate of learning outcomes were very poor with a score below 40 where there were 26 students (88.67%) in the predicate and 4 students (13.33%) got scores from the range of 41 – 50 with a poor category. The lack of learning variety hinders the development of students' critical thinking skills. This is supported by the acquisition of posttest results of students with the majority of students obtaining good results with 17 students (56.67%) getting scores from the range of 71 – 85, students who obtained very good scores with a score range of 86 -100 as many as 4 students (13.33%), students who obtained sufficient scores with a range of 57 – 70 as many as 9 students (30%). From the results of the posttest above, it can be seen that there is an increase in student learning outcomes when compared to the

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pretest session. This increase in learning outcomes is a good thing, indicating that the critical thinking skills possessed by students have increased by providing variations in learning in the form of the application of *the student team achievement divisions* (STAD) learning model.

Table 3. Research Observation Results

Meeting	Final Score	Interpretation Criteria
1	85,29%	Good
2	86,76%	Excellent
3	89,71%	Excellent
Average	**87,25%**	**Excellent**

Source: Research Data, processed May 2025

Based on the observation data above, it can be seen that the implementation of the learning process in research activities is going very well if you look at the average research observations, this can be interpreted that the implementation of the *student team achievement divisions* (STAD) learning model has gone well in accordance with the learning steps that have been prepared previously. In the first meeting the percentage of observations was at a good level, in the second meeting the percentage of observations increased with the category of very good, meaning that the researcher as a teacher tried to improve the teaching method so that there was an increase in the result, and in the third meeting there was an increase in the percentage of observations when compared to the previous meeting. This indicates that every meeting that is held will continue to be made by the researcher as an effort so that the quality of education obtained by students can support the achievement of learning outcomes later.

Table 4. Normality Test Results

Data	X^2_{hitung}	X^2_{tabel}
Pre-Test	2,172	11,070
Post-Test	9,799	11,070

Source: Research Data, processed May 2025

Based on the table above, it can be seen that the pre-test and post-test data have a value smaller than so that the data of the two tests are distributed normally and are eligible for hypothesis testing using X^2_{hitung} X^2_{tabel} *the paired sample t-test*.

The proof of the t-test is that if > then Ha is accepted and Ho is rejected while if < then Ha is rejected Ho is accepted. The results of the calculation were obtained that it was 18.74 and 1.699. Therefore, it is concluded that there is an influence of the cooperative learning model of t_{hitung} t_{tabel} t_{hitung} t_{tabel} t_{hitung} t_{tabel} *the student team achievement divisions* (STAD) type on the ability to think critically in the entrepreneurship subject of class XI at SMK YP Gajah Mada Palembang.

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The test results obtained from the students' prestest and posttest answers during the research process, the data obtained were processed by pretest data processing so that the lowest score of 11 was obtained, the highest score was 53 with an average of 27.74. At the time of the pretest, students' understanding was still very low, marked by the results obtained with all research samples at a very poor level. In contrast to the posttest, the lowest score obtained by students was 61, the highest score was 91 with an average of 74.61. This indicates an improvement in terms of score acquisition because at the time of the posttest, students have received the treatment of applying a cooperative learning model of *the students team achievement divisions* (STAD) type.

The data above is also supported by the analysis of the category of students' scores at the time of the pretest, the students' scores were at a very low level with 26 students or 88.67% getting the score and 4 students who got poor scores or 13.33%. Meanwhile, during the posttest, the scores obtained by students increased where there were 4 students or 13.33% who got very good scores, 17 students or 56.67% got good scores, and 9 students or 30% got enough scores. So from the explanation of the data above, a significant increase in terms of score acquisition can be seen which supports the initial assumption that there is an increase in critical thinking skills due to the implementation of a cooperative learning model of *the student team achievement divisions* (STAD) type.

The observation was carried out 3 times by entrepreneurship teachers at SMK YP Gajah Mada Palembang by Mrs. Keli Susan, S.Pd. With the aim of making observations to see the suitability of the teaching method with the steps that had been prepared previously. The results of observations conducted at the first meeting obtained a percentage of 85.29% with the good category, the second meeting 86.76% with the very good category, and the third meeting with 89.71% with the very good category. From the results of the three observations, it reflects that every meeting the researcher has tried to improve the way of teaching so that the grades obtained seem to have increased. The average observation was 87.25% with the very good category, which means that the researcher has carried out the learning steps very well so as to support the assumption of improving learning outcomes in the previous elaboration.

The STAD-type cooperative learning model is in line with the opinion of Rokhanah et al. (2021) who stated that this model can improve academic abilities, social skills, and mutual respect between students through cooperation. The findings of this research support this, where STAD encourages cooperation and activeness of students in solving problems together. This is also in line with Suparsawan (2020) who stated that STAD increases student interaction, confidence, and communication skills. In addition, according to Fadilah et al. (2024), critical thinking skills are influenced by internal factors such as motivation and self-confidence, as well as external factors such as learning methods and learning environment support.

Based on the above description, it can support the assumption that the improvement of critical thinking skills experienced by students as seen from the improvement of learning outcomes in the pretest and posttest sessions is influenced by the application of *the student team achievement divisions* (STAD) learning model. This assumption needs to be ascertained through statistical calculations to see if it is true that the increase that occurred was caused by the provision of treatment in the research activities carried out.

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The statistical test starts from the research prerequisite test to see feasible data using the t-test formula paired t-test sample. The prerequisite test used in this study is the normality test. The normality test was carried out to determine whether the research data was normally distributed or not using the chi square formula. The results of the normality test *of pretest* data obtained X^2_{hitung} < results, namely 2,172 < 11,070, which means that the pretest data is declared to be distributed normally. The results of the normality test X^2_{tabel} *of posttest* data obtained < results of 9,799 < 11,070, meaning that $X^2_{hitung} X^2_{tabel}$ *the posttest data* was declared to be distributed normally. So it can be concluded that the two data are normally distributed so that hypothesis testing can use a t-test paired sample t-test.

The research hypothesis test was carried out using t-test rums paired t-test samples which aimed to see the comparison of *pretest* and *posttest* values that occurred due to the provision of treatment or not. The results of the t-test paired sample were obtained > or 18.74 > 1.699 which means that Ha was accepted and Ho was rejected. Therefore, it is concluded that there is an influence of the t_{hitung} t_{tabel} *students team achievement divisions* (STAD) type cooperative learning model on the ability to think critically in class XI entrepreneurship subjects at SMK YP Gajah Mada.

This research is in line with the research conducted by Ningsih & Wulandari (2022) entitled "The Influence of the *Student Team Achievement Divisions* (STAD) Learning Model on Learning Outcomes and Students' Critical Thinking Skills" with the results of students' critical thinking skills showing 4.455 > 1.994 and having a significance value of 0.000 < 0.05 and with t_{hitung} t_{tabel} *a posttest* The critical thinking ability of the experimental group was 82.97 and the control group was 67.55 so that it can be known if the STAD learning model also affects the ability to think critically. In line with the research conducted by Ifa, et al (2023) entitled "The Influence of the *Student Team Achievement Divisions* (STAD) Cooperative Learning Model on Critical Thinking Skills and Learning Outcomes of High School/MA Students". With the result that this learning model is able to improve critical thinking skills and student teaching results, as evidenced by *a higher average posttest* score in the experimental class compared to the control class. The difference lies in the data processing technique where in this study only calculates experimental class data without a control class, so this study uses the t-test formula paired t-test sample.

This study shows that the STAD-type cooperative learning model is able to increase active participation and learning engagement of students. However, the limitation lies in the suboptimal time management, so the application of the model is not fully in accordance with the learning plan. Overall, the results of the research and statistical analysis show the influence of the STAD model on improving students' critical thinking skills in entrepreneurship subjects in class XI of SMK YP Gajah Mada.

CONCLUSION

Based on the results of data analysis, it can be concluded that the cooperative learning model of *the students team achievement divisions* (STAD) type has a positive effect on improving students' critical thinking skills in the Entrepreneurship class XI subject at SMK YP Gajah Mada. This is shown by the increase in the average score from the pretest by 27.74 to 74.61 in the posttest, which reflects an improvement in critical thinking skills after the application of the STAD model.

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