

## THE EFFECT OF STRUCTURED ACADEMIC CONTROVERSY MODEL ON STUDENTS' ARGUMENTATION ABILITY IN ECONOMIC SUBJECTS: AN EMPIRICAL STUDY

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### ABSTRACT

*Structured Academic Controversy (SAC) is a learning model that develops learners' critical and argumentative thinking skills through structured debates from two different points of view. In learning economics, argumentation skills are important because they train students to think logically, express opinions, and make rational decisions. This study aims to determine the effect of applying the SAC model on improving students' argumentation skills in class X economics subjects at SMA Negeri 10 Palembang. The method used is quantitative with a One Group Pretest-Posttest type Quasi Experimental design. Data were obtained through tests and observations. The results showed that the average pretest score of students was 58.96 and increased to 84.3 in the posttest. The t-test results show that the tcount is 12.144 ≥ ttable 2.030, so  $H_0$  is rejected and  $H_a$  is accepted. This proves that the SAC model has a significant effect on improving argumentation skills. In addition, the observation of students' activities also showed an increase, namely 75% in the first meeting, 86.9% in the second meeting, and 97.6% in the third meeting, which reflected the effectiveness of the SAC learning model.*

**Keywords:** *Structured Academic Controversy (SAC), Argumentation Ability, Economics Learning, Learning Model, Ability Improvement.*

### INTRODUCTION

In the context of national education transformation, the Government of Indonesia has established Merdeka Curriculum as the basic framework and curriculum structure for all levels of education through the Minister of Education, Culture, Research and Technology Regulation Number 12 of 2024. This curriculum is designed to improve the quality of education by emphasizing the strengthening of the Pancasila Learner Profile, which covers six main dimensions, including critical reasoning skills. However, the implementation of this curriculum faces significant challenges, especially in developing students' argumentation skills in learning economics. Economic learning at the secondary school level is often one-way and does not involve students in in-depth discussions, so their argumentation skills are not optimally developed.

The reason for the suboptimal argumentation skills of students is in accordance with the statement (Pitorini, et al 2020) that the low argumentation skills of students are due to the fact that educators have not provided a forum for developing argumentation skills, as well as learning activities that are still teacher centered. This is also in accordance with the statement (Karlina & Heffi, 2021) that learning in schools only focuses on the cognitive aspect, but has not trained students in reasoning. the crisis in students' argumentation skills is also one of the serious challenges in the world of education today. In the midst of the development of the globalization era, students are faced with a rapid flow of information that requires critical thinking skills and the ability to express opinions logically. However, in reality, many students still have difficulty in composing arguments. argumentation skills are coherent, critical, and based on strong data. Meanwhile, argumentation skills are very important for students because argumentation skills are one of the goals of learning science, students learn to know scientific explanations of natural phenomena and use arguments to solve problems so that they know science as a whole. According to (Karlina & Alberida, 2021). Therefore, argumentation skills are very important to be trained in learning so that students have logical reasoning, clear views and rational explanations of the things they learn. Argumentation-based learning activities can encourage students to engage in providing valid evidence, data, and

theories to support opinions on a problem.

Science education plays a very important role in the development of individuals and society as a whole. In the 21st century, the world faces great challenges that require critical and creative problem solving, as well as the ability to adapt quickly to the changes that occur. (Mashudi, 2021) suggests that science education not only aims to transfer knowledge, but also to equip students with skills relevant to the needs of the 21st century. One of the emerging approaches in science education is 21st century skills-oriented science education, which prioritizes the development of critical thinking skills, creativity, collaboration, communication, and digital literacy (Siskayanti et al., 2022). This problem emphasizes that efforts to improve argumentation skills must be a major concern in the educational process to form a generation that is intelligent, critical, and able to actively participate in a democratic society.

Based on the results of pre-research through interviews and observations with educators of class X SMA Negeri 10 Palembang, it was found that there is a gap between the demands of 21st century competencies and the actual conditions of learning economics. some students experience difficulties, namely considering economics lessons monotonous, especially in abstract concept material, so that interest and motivation to learn are low. They only understand basic concepts without being able to relate them to real life, even though in Phase E Economic Learning Outcomes, students are expected to understand the concepts of banks, non-bank financial institutions, and OJK. In , students have difficulty applying theory in case studies, are less active in expressing opinions, and are not accustomed to dealing with differences of opinion and making decisions. The dominant lecture method causes low student activeness and has an impact on learning outcomes. , the school is also piloting the Merdeka Curriculum, which demands the development of the Pancasila Learner Profile, including critical and argumentative thinking skills. Learners are still weak in constructing logical arguments, evaluating information sources, and working together in groups. This suggests that their argumentation skills need to be further developed to enable them to better understand, evaluate and apply economic concepts.

In the rapidly evolving information age, argumentation skills have become an essential skill for learners. These skills enable them to critically analyze information, make rational decisions, and actively participate in constructive discussions. Learning is understood as an individual effort to obtain holistic changes in behavior through meaningful experiences in interaction with the environment (Suryana et al., 2022). One of the effective learning models used to support in helping students face this challenge, especially in the argumentation skills of students when discussing and thinking more rationally in analyzing a problem is the structured academic controversy (SAC) learning model.

The Structured Academic Controversy (SAC) learning model was invented by David W (1997). This model involves structured discussions on controversial issues, designed to develop students' critical thinking and argumentative skills. Argumentation skills can be mastered by students if they are often trained and given a platform to express their opinions. Learners must understand the concept of argument in order to improve their ability to argue (Mualifah D.F, 2023). The Structured Academic Controversy (SAC) method is a strategy that can be applied by educators in presenting topics and issues that can cause pros and cons. In its activities, there is an active debate if pro and contra groups are formed to express their opinions to each other. This is in line with Hidayat's (2019) research that many abilities can be trained in this strategy, including the ability to speak and be able to convey their ideas to others. Learning methods that link discussion and group learning are useful for training learners' social competence, because members discuss, negotiate, and compromise. This activity is seen when learners in groups make decisions (Koryati et al., 2020).

The learning steps using the Structured Academic Controversy model in this research refer to the opinion (Matitaputty, 2016) are as follows: (1) Educators prepare material containing

controversial issues, the implementation can be done through the explanation of the educator, and students can also directly read and hear controversial news that has been prepared by the educator. (2) Educators accommodate various thoughts about the issue. Each thought must be presented and given reasons why it is proposed. (3) Different thoughts are made into a kind of controversial news and then made into materials for brainstorming in class. (4) Carry out a process of exposure or discussion to find out the strengths and weaknesses of each learner's thoughts. In this case, the class activity does not need to be confronted to get an agreement. If there is no agreement, the educator should not press for an agreement. (5) The next series of learning processes carried out by educators with students is to make conclusions regarding the similarities and differences in existing opinions, as well as the weaknesses and advantages of each opinion.

The advantage of cooperative learning theory of academic controversy type according to O'Donnell & O'Kelly, and Johnson is that students can achieve better understanding through the use of cognitive conflict methods (Santicola, 2014). Likewise, the proper use of the academic controversy method will increase learning motivation in students and make students focus on the learning process and will certainly increase learning achievement (Susilo, 2013). Meanwhile, Rodgers argues that the shortcomings of the academic controversy structure model that students must always interact with other students to exchange opinions, the problem with students who lack interaction will tend to be silent and passive (Tavakoli, 2017).

Based on the above problems, the argumentation skills of students in learning economics are still relatively low and require learning strategies that can stimulate the involvement of critical thinking to encourage the development of argumentation skills. One approach that is considered relevant is the Structured Academic Controversy (SAC) model. , the purpose of this study was to determine the argumentation skills of students in economic subjects after the application of the Structured Academic Controversy model.

## METHODS

This research is a Quasi Experimental design research type One Group Pretest-Posttest. The research sample was class X.7 with a total of 36 students at SMA Negeri 10 Palembang in the 2024/2025 school year. The research instrument was a test in the form of a case study consisting of 6 questions and an observation sheet. The test was used to measure the argumentation skills of students before and after the application of the Structured Academic Controversy (SAC) model, and the observation sheet was used to observe students' activities. The argumentation ability test can be seen from 6 indicators, namely claim, data, warrant, backing, qualifier, and rebuttal. The highest score is given to learners who cover the 6 indicators. The instrument has been tested for validity and reliability to ensure accuracy and consistency of measurement.

Table 1. Reliability of Problem Instruments

Reliability Statistics	
Cronbach's Alpha	N of Items
.931	6
.851	6
.841	6

Source: Researcher Data, Processed April 2025.

Based on the table above, the reliability test uses the Cronbach's Alpha formula with the help of the SPSS Version 17 program. The results show a reliability value of 0.931, 0.851, and 0.841 respectively for three groups of items with a total of 6 items each, all of which are in the highly reliable

category. These values indicate that the instrument has high internal consistency and is suitable for collecting research data. However, in writing this journal, the researcher did not include a detailed validity table because if presented in tabular form it would take up a large space. Nevertheless, the researcher has conducted content validity with the supervisor and validator lecturers, who stated that all items were suitable for use because they were in accordance with the indicators of argumentation skills being measured. After being declared valid and reliable, the instrument was used in the data collection process. The flow of research procedures is systematically presented in the following chart:

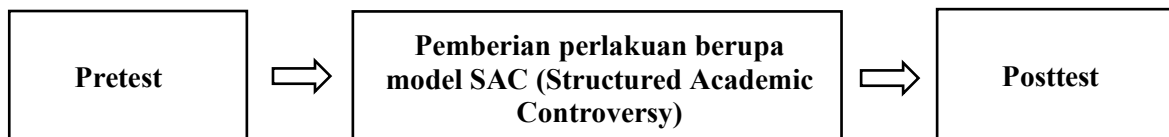


Figure 1: Chart of Research Procedure

## RESULT AND DISCUSSION

Based on the results of research conducted on 36 students of class X.7 in economics subjects with material on Financial Services Institutions, data were obtained regarding the increase in average scores after the application of the Structured Academic Controversy (SAC) learning model. Before the application of the SAC model, students were first given a pretest to determine their initial ability. After the learning process using the SAC model was completed, students were given a posttest with equivalent questions. The comparison between the mean scores of the pretest and posttest is presented in the following diagram:

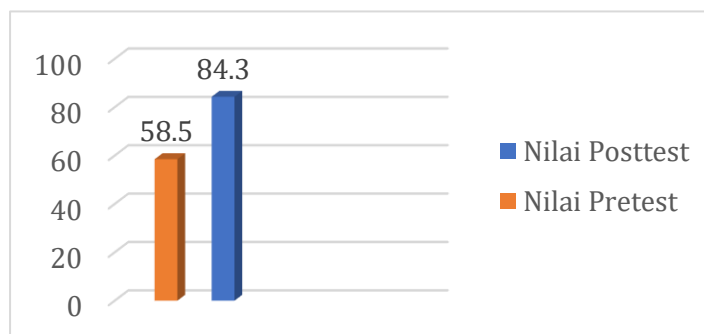


Figure 2: Diagram of Average Pretest and Posttest Scores

Diagram of Average Score of Pretest and Posttest Based on the diagram above, there is a significant increase between the average pretest and posttest scores of students. The average pretest score of 58.5 is included in the sufficient category, which shows that before the application of the SAC model, students' understanding of the Financial Services Institution material is still relatively low. After the learning process with the SAC model which emphasizes discussion of pros and cons, the average posttest score increased to 84.3 and is included in the good category. This shows that the application of the SAC model is able to improve students in the learning process, encouraging them to think critically, express opinions, and formulate arguments logically.

Table 2. Pretest-Posttest Mean Score

Range	Criteria	Frequency Pretest	Percentage Pretest %	Frequency Posttest	Percentage Posttest %
86-100	Sangat Baik	2	5.6	17	47.2
70-85	Baik	9	25	14	38.9
56-69	Cukup	10	27.8	5	13.9
0 – 55	Kurang	15	41.7	0	0.0
<b>Total</b>		<b>36</b>	<b>100</b>	<b>36</b>	<b>100</b>
<b>Average</b>		<b>58,9</b>		<b>84,3</b>	

Source: Researcher Data, Processed April 2025.

Based on the table above, it can be seen that there is an increase in student learning outcomes after applying the Structured Academic Controversy (SAC) learning model. Before the application of the model, most students were in the "Lack" category with a frequency of 15 students or 41.7%, and only 2 students (5.6%) were in the "Very Good" category. But after the learning took place, there were no more learners in the "Lack" category, and the number of learners who reached the "Very Good" category increased dramatically to 17 students (47.2%). In addition, students in the "Good" category also increased from 9 students (25%) to 14 students (38.9%).

Meanwhile, the average pretest score before learning was 58.9, which is included in the "Fair" category, while the average posttest score after learning increased to 84.3, which is included in the "Good" category. This shows that the majority of students have reached a high level of mastery of the material, and there are no students who are below the minimum standard, which reflects the success of the learning process that has been carried out. Students of class X.7 SMA Negeri 10 Palembang even semester of the 2024/2025 academic year have an average score of 84.3 with a good category, which means that on average the results of students can be said to be good but the value of students can still be improved. This difference clearly occurs because of course a student's knowledge will increase after being given learning material. Furthermore, to determine the argumentation ability in the sample class, data analysis was carried out with a hypothesis test, namely the Paired Sample T-Test test. However, after the normality test is fulfilled, the Paired Sample T-Test test is conducted. The Pretest-Posttest normality test was carried out by comparing the number of Xcount with Xtable at a significant level. Pretest was carried out Normality test, to determine the distribution of the results obtained. The following presents the normality test carried out on each data.

Table 3. Normality Test of Pretest and Posttest Data.

Sample	X <sup>2</sup> count	X <sup>2</sup> table	DK	Distributed
Pretest	8.302	12.591	36	Normal
Posttest	12.083	12.591	36	Normal

Source: Researcher Data, Processed April 2025.

Based on the table above, the results of the pretest and posttest data normality test show that both data are normally distributed. This can be obtained from the data on learning outcomes through tests that are normally distributed or not, the normality test is carried out using the Chi Kuadrat formula with a significance level of 5%. The results of the pretest data normality test are  $X^2 \text{ count} = 8.302 \leq \text{the value of } X^2 \text{ table} = 12.591$ , so the pretest data is said to be normally distributed. Furthermore, for posttest data obtained  $X^2 \text{ count} = 12.083 \leq X^2 \text{ table} = 12.591$  so that the posttest data is also normally distributed. Because  $X \text{count} \leq X \text{table}$  on both data, it can be said that the pretest



and posttest data are normally distributed and meet one of the requirements for parametric statistical tests.

After knowing that the pretest and posttest data are normally distributed, the next step is to conduct hypothesis testing. Hypothesis testing was carried out with the aim of knowing the effect of the Structured Academic Controversy learning model on argumentation skills through learning outcomes tests. Hypothesis testing uses paired sample t-test. This test is used to determine whether or not. There was a significant difference between the pretest and posttest results after the implementation of the Structured Academic Controversy learning model. Hypothesis testing can be done after the argumentation ability data obtained is normally distributed, so this test uses a parametric statistical test with the Paired Sample T-Test test. The results of the hypothesis test show that there is a significant difference between the argumentation skills of students in the pretest and posttest scores. Statistical calculations can be seen in the following table.

Table 4. Hypothesis Test (t-test) of Pretest-Posttest Data

**Paired Samples Test**

		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PRETEST – POSTTEST	-25.38889	12.54313	2.09052	-29.63287	-21.14490	-12.145	35	.000

In the paired sample test table, the mean column shows the average difference before and after the test. Based on the data results, the tcount= value is 12.145 with the ttable value (35; 0.05) is 2.030. Because the tcount  $\geq$  ttable (12.1443  $\geq$  2.030) then  $H_0$  is rejected and  $H_a$  is accepted, which means there is a significant difference between the pretest and posttest scores. So it can be said that the application of the Structured Academic Controversy learning model has a significant effect on improving the argumentation skills of students in Economics subjects in class X SMA Negeri 10 Palembang in the 2024/2025 academic year. To support the quantitative data obtained through tests, researchers also made observations of students' activities during the learning process. The results of the observation of students' activities during the three meetings can be seen in the following table:

Table 5. Observation Results of Learner Activities

Percentage	Criteria	Total Score Pert.1	%	Total Score Pert.2	%	Total Score Pert.3	%
80%-100%	Very Good	-	-	73	86.9%	82	97.6%
66% -79%	Good	63	75%	-	-	-	-
56%-65%	Simply	-	-	-	-	-	-
40%-55%	Less	-	-	-	-	-	-

Source: Researcher Data, Processed April 2025.

Based on the results of the learner activity observation sheet, it is known that the Structured Academic Controversy (SAC) model runs effectively and shows an increase from every meeting. In

the first meeting, learner involvement reached 75% (good category), although they still looked passive because they were not used to the flow of structured debates and the division of pro-con roles. In the second meeting, the implementation increased to 86.9% (very good category) because students began to understand the stages of the debate and were more active in discussion and presentation of arguments. This increase was also supported by the role of educators who consistently guided the learning process. The peak occurred at the third meeting with the implementation reaching 97.6%, indicating that students had become accustomed to the SAC model and were able to demonstrate critical thinking skills, group cooperation, and argue logically and respect the opinions of others. Thus, the results of observations of learner activities that are increasing from meeting to meeting are evidence that the Structured Academic Controversy (SAC) model can not only increase learner activity and participation. This result is in line with the goal of innovative learning that places learners as active subjects in a critical, collaborative, and argumentative thinking process.

This research is in line with Purnomo, et al (2023) who stated that the Structured Academic Controversy (SAC) model is able to strengthen students' critical thinking skills and form an open attitude towards different views. This shows that the SAC approach is effective in building analysis based cooperative learning. Similar support is also seen in Hidayat's (2018) research, which found that the academic controversy method encourages increased learning activities, especially because students are directly involved in discussions and decision-making. Furthermore, Yunestika (2015) also showed that the use of academic controversy model can significantly improve students' learning outcomes. From the above discussion that has been carried out, it can be seen that there is an Effect of the Application of the Structured Academic Controversy Learning Model on the Argumentation Ability of Students in Class X Economics Subjects at SMA Negeri 10 Palembang in the 2024/2025 Academic Year.

From the above discussion that has been carried out, it can be seen that there is an Effect of the Application of the Structured Academic Controversy Learning Model on the Argumentation Ability of Students in Class X Economics Subjects at SMA Negeri 10 Palembang in the 2024/2025 Academic Year. The novelty of this research with previous research lies in the object, location and context of education. Researchers examined the effect of the Structured Academic Controversy (SAC) learning model on students' argumentation skills in the social subject family, namely economics. This research was conducted on class X students at SMAN 10 Palembang. With the argumentation ability variable in this study measured from pretest-posttest questions, LKPD results, and observations during the study.

## CONCLUSION

Based on the results of research that has been conducted on "The Effect of the Application of the Structured Academic Controversy Learning Model on the Argumentation Ability of Students in Class XI Economics Subjects at SMA Negeri 10 Palembang in the 2024/2025 Academic Year", it can be concluded that the application of the Structured Academic Controversy (SAC) learning model has a significant effect on improving students' argumentation skills. This is evidenced by the difference in results between pretest and the results of the posttest showed an increase, as well as statistical test results that reinforced that there was a significant difference after the application of the SAC learning model. This improvement can also be seen from the results of observations of learner activities which are increasing from each meeting, showing higher enthusiasm and enthusiasm for learning. Overall, this shows that the Structured Academic Controversy learning model can be applied well and effectively in improving students' argumentation skills and encouraging active involvement of both students and educators in the learning process. Therefore, it is recommended that teachers can apply the Structured Academic Controversy (SAC) learning model as an effective

strategy to improve students' argumentation skills, especially in learning Economics. Learners are also expected to be more active in participating in discussions and expressing opinions logically. Schools should support the application of this model by providing facilities that support group discussion activities. In addition, for future researchers, it is recommended to develop this research at other levels or subjects to determine the effectiveness of the SAC model more broadly.

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