

Teachers' Ability to Construct Learning Through the Scramble Learning Model Approach in Schools

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Abstract

Keywords:

Learning Model Approach, Learning Construction, Scramble Cooperative Learning.

This study aims to see how far the influence of the scramble-type cooperative learning model on student learning outcomes. The type of research used in this research is a quasi-experimental design. The results of this study indicate that; the implementation of the economic learning process with the scramble-type cooperative learning model is quite effective in producing students' ability to understand each material. Based on these results it can be said that the experimental class achieved a score above the completeness criteria of learning outcomes compared to the learning scores of students in the control class. This cannot be separated from the teacher's ability to construct learning using the scramble learning model approach. So, through the learning construction of the scramble model, students can think critically and build their own capacity through various processes and learning models carried out in learning units.

Abstrak

Kata kunci:

Pendekatan Model Pembelajaran, Konstruksi Pembelajaran, Pembelajaran Kooperatif Berebut.

This research aims to see the extent of the influence of the scramble-type cooperative learning model on student learning outcomes. The type of research used in this research is a quasi-experimental design (Quasi-Experimental Design). The results of this research show that; The implementation of the economics learning process using the scramble-type cooperative learning model is quite effective in producing students' ability to understand each material. Based on these results, it can be said that the experimental class achieved scores above the criteria for completeness of learning outcomes compared to the learning scores of students in the control class. This cannot be separated from the teacher's ability to construct learning using the scramble learning model approach. So, through this scrambling model learning construction, students can think critically and build their capacity through various learning processes and models carried out in the learning unit.

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INTRODUCTION

In an era of education that continues to develop, the teacher's ability to design learning is a crucial factor that influences the quality of education. The learning construction process involves selecting appropriate content, innovative teaching strategies, and approaches that are able to activate optimal student participation and involvement (Efendi & Sa'diyah, 2020), (Putry, 2019). The Scramble Learning Model approach, which is the center of attention in this paper, invites active student involvement through learning experiences that adopt a diversity of methods, sources, and approaches (Zebua, Zagoto, & Telaumbanua, 2021). Therefore, an in-depth exploration of how teachers apply this learning model in the learning construction process becomes essential, along with its impact on student motivation and achievement. Thus, writing that discusses this issue will provide valuable insight for the development of more adaptive and innovative education in various educational institutions (Maâ, 2018).

Economics subjects can be seen as very important lessons, especially in forming mental discipline and supporting the birth of various other scientific disciplines (Mariani, Ren, Bascompte, & Tessone, 2019), (Beiderbeck, Frevel, von der Gracht, Schmidt, & Schweitzer, 2021). So, it is very clear that economics learning is a scientific discipline that cannot be separated from human life. But in reality at school, learning economics is known as a very difficult subject and is sometimes underestimated by students because there are many characteristics involving economic terms that are used to solve problems in solving a problem (Gilenko & Chernova, 2021), (Spence , 2021). This will definitely have a very bad impact on student learning, and will automatically affect student learning outcomes because boredom and laziness will arise which will result in the ability to learn economics and the quality and learning outcomes obtained to be lower when compared to learning other subjects. According to Khan et al., "Scramble is a learning method that can increase students' concentration and speed of thinking" (Khan, Sivasubramaniam, Anand, & Hysaj, 2021). In line with Ayal et al. (2022), said that: "Scramble is a learning method that invites students to find answers and solve existing problems by distributing question sheets and answer sheets accompanied by alternative answers" (Ayal et al., 2022). So, it can be concluded that scramble type learning is learning that can increase students' concentration and thinking speed to find answers and solve existing problems by distributing question sheets and answer sheets accompanied by alternative answers. So, looking at the problems above, the problem was formulated, namely: "Is there an influence *scramble type cooperative learning model* on the learning outcomes of 2021 Private Campus High School students."

Previous research in the education domain has discussed the important role of teachers in forming an effective learning environment. However, although many learning models have been proposed and implemented, there is still a gap in the understanding of the concrete application and effectiveness of certain learning model approaches, such as the Scramble Learning Model, in school contexts. Previous studies

have not fully explained how teachers concretely construct learning using this model, as well as its impact on student learning interactions and academic achievement. Therefore, the novelty of this article lies in its in-depth focus on teachers' abilities in designing learning through the Scramble Learning Model approach in the school environment. This article will fill this knowledge gap by investigating the concrete strategies teachers use in implementing this model, the challenges they face, and their impact on student participation and achievement. By bridging this research gap, this article is deemed necessary to provide practical guidance to educators and researchers in optimizing the application of the Scramble Learning Model to improve the quality of learning in schools.

This research aims to see the extent of the influence of the scramble-type cooperative learning model on student learning outcomes. This article attempts to complement the articles that have been researched previously to make them more complex and proportional. The specific aim of this article is to deepen understanding of teachers' abilities in designing learning using the Scramble Learning Model approach in the school environment. By completing the shortcomings of previous research which has not fully explained the concrete implementation and effectiveness of this learning model, this paper aims to test and prove the concrete strategies used by teachers in constructing learning using the Scramble Learning Model approach. The hypothesis tested in this paper is that teachers are able to develop creative strategies in designing learning that includes a variety of different methods, learning resources and student interactions in accordance with the principles of the Scramble approach. Apart from that, this paper will also examine the impact of implementing this approach on student participation and achievement in the learning context at school. Through a comprehensive research approach, this article aims to provide more detailed and focused guidance to educational practitioners in utilizing the Scramble Learning Model as an effective tool in improving the quality of learning processes and outcomes.

RESEARCH METHODS

The implementation of this research began with grouping the research samples into experimental class and control class. In both classes, an initial test is given which serves to determine the students' initial abilities. Next, in the experimental class, learning activities were carried out with *scramble type cooperative learning model* and lecture method in the control class. After the learning activities in both classes are completed, the final test is continued. The final test results are used for hypothesis testing purposes.

The type of research used in this research is a quasi-experimental design (*Quasi Experimental Design*), that is: *nonequivalent control group design* (Abraham & Supriyati, 2022). This design can be seen in the table below:

Table 1: *Research Design Nonequivalent Control Group Design*

Class	Pre-Test	Treatment	Post -Test
Experiment	O ₁	X	O ₂
Control	O ₃	-	O ₄

Sumber: (Anam et al., 2023)

Information:

- (O₁) = Initial test in the experimental class
- (O₂) = Final test in the experimental class
- X₁ = The treatment given to the experimental class by using *scramble type cooperative learning model*.
- = Control class with no treatment
- (O₃) = Initial test on the control class
- (O₄) = Final test in the control class

RESULTS AND DISCUSSION

Results

Student learning outcomes before and after carrying out the learning process using the cooperative learning model *scramble type*. The test used in this research is a description test, which is divided into two parts, namely *pretest* and *posttest*. The economic learning outcomes referred to in this research are the final ability values obtained from activities *posttest*.

The students involved in this research consisted of classes XI-1 and XI-2, with a total of 27 students in each class. Class XI-1 is a control class that does not use cooperative learning strategies *Scramble type* (learning as usual), while class XI-2 as an experimental class uses cooperative learning strategies *Scramble type*. After all the data has been collected, the next step is to analyze the data. This research uses arithmetic average, variance (standard deviation). Prerequisite test: Initial analysis, namely the normality test and homogeneity test, after the prerequisite testing is fulfilled, proceed with hypothesis testing with tests ^{tt}.

Table 2: *Teachers' Ability to Construct Learning Using the Scramble Learning Model Approach in Schools*

No.	Aspects of Teacher Ability	Findings
1	Material Selection	Teachers are able to choose relevant and interesting material according to the Scramble approach.
2	Method Variants	Teachers use a variety of learning methods, including group discussions, projects, and simulations, to increase student interaction.
3	Strategy Adaptation	Teachers are able to adapt learning strategies based on the responses and needs of students in the class.

No.	Aspects of Teacher Ability	Findings
4	Resource Usage	Teachers integrate various learning resources such as books

Based on data processing, the average student score was 81 with good criteria, meaning that students were able to think critically in solving questions and answers. By using the Standard Deviation formula, the data obtained in the experimental class are: $\sum X_i = 2187$; $\sum X_i^2 = 178231$; and $n = 27$. The data above is substituted in the formula:

$$S^2 = \frac{(n_i \sum X_i^2) - (\sum X_i)^2}{n_i(n_i - 1)}$$

$$S^2 = \frac{(27)(178231) - (2187)^2}{(27)(27 - 1)}$$

$$S^2 = \frac{4812237 - 4782969}{(27)(26)}$$

$$S^2 = \frac{29268}{702}$$

$$S^2 = 41,69$$

$$S = \sqrt{41,69}$$

$$S = 6,45$$

Table 3

Data processing results for the average value and standard deviation in the experimental class and control class:

No	Experiment Class	Control Class	Average results	Mark
1	6,45	20,86	65,42	3,23
2	9,22	15,80	12,93	2,49

The calculated average using the standard deviation in the Control class obtained data: $\sum X_i = 1572$; $\sum X_i^2 = 102842$; and $n_i = 27$. The data above is substituted in the formula:

$$S^2 = \frac{(n_i \sum X_i^2) - (\sum X_i)^2}{n_i(n_i - 1)}$$

$$S^2 = \frac{(27)(102842) - (1572)^2}{(27)(27 - 1)}$$

$$S^2 = \frac{2776734 - 2471184}{(27)(26)}$$

$$S^2 = \frac{305550}{702}$$

$$S^2 = 435,25$$

$$S = \sqrt{435,25}$$

$$S = 20,86$$

The results of calculating the initial test scores for both the control and experimental classes show that the average results and learning abilities are in the sufficient category. An example of the calculation is as follows:

$$\bar{X} = \frac{\sum Xi}{n}$$

$$\bar{X} = \frac{1572}{27}$$

$$\bar{X} = 65,42$$

Based on data processing, the average student score was 65.42 with sufficient criteria. Furthermore, the homogeneity test between the experimental class and the control class was based on initial test score data on student learning outcomes, the average value and standard deviation of student learning outcomes were known as follows:

Experimental class: $\bar{X} = 81$ and $S = 6.45$
 Control class : $\bar{X} = 65.42$ and $S = 20.86$

To carry out homogeneity testing, the values above are substituted in the following formula:

$$F = \frac{\text{Varians terbesar}}{\text{Varians terkecil}}$$

$$F = \frac{20,86}{6,45}$$

$$= 3,23$$

Based on these results it is known that F_{count} of 3.23. Then consulted the table listing F with a significance level of 0.05 and $dk = (26.26)$ so that the value F_{table} as much as 1.93 up to $F_{count} < F_{table}$ then it can be concluded that the two classes are homogeneous.

The results of the posttest test in the experimental class obtained data on learning outcomes and then processed them into scores for each question item. Based on the data table on student learning outcomes, the calculated average score for the experimental class was 83.92 in the good category and the standard deviation was 9.22.

This is the standard deviation formula in the experimental class where the data is obtained: $\sum X_i = 2266$; $\sum X_i^2 = 192396$; and $n_i = 27$. The data above is substituted in the formula:

$$S^2 = \frac{(n_i \sum X_i^2) - (\sum X_i)^2}{n_i(n_i - 1)}$$

$$S^2 = \frac{(27)(192396) - (2266)^2}{(27)(27 - 1)}$$

$$S^2 = \frac{5194692 - 5134756}{(27)(26)}$$

$$S^2 = \frac{59936}{702}$$

$$S^2 = 85,01$$

$$S = \sqrt{85,01}$$

$$S = 9,22$$

Meanwhile, in the control class the results *posttest* (final test) data on learning results is obtained and then processed into scores for each question item. Based on the data table on student learning outcomes, the calculated average score for the control class is 71.07, which is in the sufficient category and has a standard deviation of 15.80. The results of calculating the standard deviation in the control class obtained data: $\sum X_i = 2155$; $\sum X_i^2 = 176549$; and $n_i = 27$. The data above is substituted in the formula:

$$S^2 = \frac{(n_i \sum X_i^2) - (\sum X_i)^2}{n_i(n_i - 1)}$$

$$S^2 = \frac{(27)(142887) - (1919)^2}{(27)(27 - 1)}$$

$$S^2 = \frac{3857949 - 3682561}{(27)(26)}$$

$$S^2 = \frac{175388}{702}$$

$$S^2 = 249,84$$

$$S = \sqrt{249,84}$$

$$S = 15,80$$

Next, a hypothesis test is carried out using a statistical hypothesis formula, namely

$$H_0 : \mu_1 = \mu_2 \quad \mu_1 = \mu_2$$

$$H_1 ; \mu_1 \neq \mu_2 \quad \mu_1 \neq \mu_2 ; \text{ means two-party test}$$

$$\text{Experimental class} : \bar{X} = 83,92 ; S^2 = 85,008$$

$$\text{Control class} : \bar{X} = 71,07 ; S^2 = 249,84$$

The data above is substituted in the t test formula, as follows:

First calculate the combined variance value:

$$S^2 = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{(n_1 + n_2 - 2)}$$

$$S^2 = \frac{(27 - 1)(85,008) + (27 - 1)(249,84)}{(27 + 27 - 2)}$$

$$S^2 = \frac{(26)(85,008) + (26)(249,84)}{(52)}$$

$$S^2 = \frac{2210208 + 6495,84}{(52)}$$

$$S^2 = 167.424$$

$$S = \sqrt{167.424}$$

$$S = 12.93$$

After obtaining the value S combined, then the calculated t value is calculated: The hypothesis test used is the t -test with 2 sample sizes $n_1 = n_2$ and homogeneous variance as follows:

$$t_{hitung} = \frac{\bar{X}_1 - \bar{X}_2}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$t_{hitung} = \frac{84,90 - 65,42}{12,93 \sqrt{\frac{1}{27} + \frac{1}{27}}}$$

$$t_{hitung} = \frac{19,48}{12,93 \sqrt{\frac{2}{27}}}$$

$$t_{hitung} = \frac{8,74}{3,51}$$

$$t_{hitung} = 2,490$$

Then consult the t price table at the real level (α) = 0.05, then the t statistic has a student distribution with $dk = (n_1 + n_2 - 2)$. The test criteria are H_a accepted if calculated $t_{count} >> t_{table}$. Based on the hypothesis test calculations it is known t_{count} amounting to 2,490 then consult the price table t with a significance level of 0.05 where t_{table} equal to 1.7032 then $2.490 >> 1.7032$ which mean $t_{count} >> t_{table}$. Because $t_{count} >> t_{table}$ then H_a is accepted and H_o is rejected at the 5% significance level.

Discussion

In this discussion, we will describe the comparison and integration between field data findings with theory and previous research related to teachers' abilities in constructing learning using the Scramble Learning Model approach in the school environment. Field data findings obtained from this research will be linked to relevant theoretical concepts. These findings will be compared with the findings and views found in previous literature.

Based on the findings of field data, it appears that the teachers in this research were indeed able to develop their abilities in designing learning through the Scramble Learning Model approach. They creatively combine a variety of methods, learning

resources, and student interactions to create dynamic and engaged learning experiences. These findings are in line with theoretical concepts about the flexibility and adaptability of the Scramble approach which allows adjustments to students' learning styles.

In the context of previous research, several studies have highlighted the importance of the teacher's role in the effective learning construction process. However, the literature is still limited in explaining in detail how teachers implement the Scramble Learning Model practically. The findings from this research provide an important contribution to filling this gap by outlining the concrete steps taken by teachers in implementing the model. In addition, analysis of these findings also provides insight into the impact of implementing the Scramble Learning Model approach on student participation and achievement. This finding is seen as being in line with theory which emphasizes the importance of diverse interactions in learning to promote student motivation and academic achievement.

In order to link field data findings with contributions to the literature, this research illustrates how the Scramble Learning Model approach can be effectively integrated into daily learning practices. This not only provides a more comprehensive picture of teachers' instructional construction practices but also provides practical guidance that can be adopted by other educators. Thus, this paper makes a substantial contribution to the development of innovative and results-oriented pedagogy in educational settings.

The results of the research above are in line with what was expressed by Djamarah and Zain "Learning is a behavioral process thanks to experience and practice" (Syudirman & Saddam, 2021). In line with Sapuri et al, learning outcomes are "the abilities possessed by students after they receive their learning experience" (Saputri, Nurlela, & Patras, 2020). In agreement with Sari & Rahmah (2019), "the aim of education is to develop and shape good student behavior (cognitive, affective, psychomotor). "There is a fairly close relationship between the level of thinking and increasing students' learning abilities." Rusman (2017:203), cooperative learning is learning that involves student participation in a small group to interact with each other (Harefa et al., 2022). In a cooperative learning system, students learn to work together with other members.

Meanwhile, Putro et al. (2022) stated: "It was concluded that collaboration and contextual methods were able to increase students' understanding of the material being taught, able to spur student seriousness, train students' perspectives on the material being taught, be able to implement through thought processes and build new narratives about the material being taught, using learning media contained in the school environment, and occur interactively between teachers and students."

This means that collaborative and contextual methods are able to increase students' understanding of the material being taught, are able to stimulate students' seriousness, train students' perspective on the material being taught, are able to implement it through thinking processes, and build new narratives about the material

being taught, using learning media found in school environment, and occurs interactively between teachers and students.

The findings based on hypothesis testing were obtained using the scramble type cooperative learning model implemented in class VII-E for eight meetings, namely: 1) students were able to recognize the properties of integer counting operations, 2) students were able to follow the learning process with fast concentration of thinking, 3) students are active in the learning process, 4) students are able to work on the worksheets distributed by researchers to each group, 5) through group work, students who are active in learning invite their less active friends to provide ideas or opinions so that students in their groups can find answers to existing problems, 6) each research group chooses a group representative to present the results of their group's work in front of the class, and the other groups will assess and correct wrong answers by the group that presented the results his group. In line with what Huda (2001:303) stated, "Scramble is a learning method that can increase students' concentration and speed of thinking" (Zahra, Saefuddin, & Mahmud, 2023).

This research is also in line with research conducted by Qamariah et al., (2016) entitled "Application of the scramble learning model to improve students' thinking abilities" that the scramble learning model can improve students' creative thinking abilities. The difference between the research conducted by Qamariah and the researchers was in the research conducted by Qamariah in Classroom Action Research (PTK). The success of students' economic learning using the scramble type cooperative learning model by building students' increasingly better critical thinking attitudes. In line with Saridewi & Kusmaryatni (2017), stated that the application of the scramble learning model can effectively improve science learning outcomes on life cycle material of various types of living creatures in class IV of SD No. 3 Legian.

In the context of a more in-depth discussion, field data findings regarding teachers' abilities in constructing learning using the Scramble Learning Model approach in schools can be analyzed in relation to previous theories and research. The finding that teachers are able to combine methods, learning resources, and student interactions in accordance with the principles of the Scramble approach reflects conformity with constructivism theory and student-centered learning approaches. Constructivism theory emphasizes the importance of building knowledge through experience and students' active interaction with learning material. In this case, the Scramble Learning Model approach, with its focus on variations and diverse learning experiences, supports this concept by giving students the opportunity to construct their own understanding through meaningful interactions (Komalasari & Yakubu, 2023).

Apart from that, the results of this research can also be seen as a contribution to the literature that examines the important role of teachers in the learning process. Several previous studies highlight the need for adaptive and inclusive learning approaches to meet students' diverse learning styles and needs. In this case, the findings of this research complement the literature by showing how teachers concretely adapt the Scramble Learning Model to address diverse learning needs in the classroom. The implication is that this research provides practical insight into how

learning construction strategies can be adapted to students' needs effectively, which is a crucial element in inclusive education (Septantiningtyas & Subaida, 2023; Setyorini & Khuriyah, 2023).

Overall, this research makes an in-depth contribution by linking empirical findings contextually and elaboratively with existing theory and research. The Scramble Learning Model approach is not only analyzed in practical terms but is also linked to a broader theoretical view. This provides a more complete understanding of how this approach can influence learning dynamics and student learning outcomes. As a result, this research fills a knowledge gap and provides a strong foundation for the future development of more adaptive and student-oriented pedagogy.

CONCLUSION

The most important finding from this research is that the Scramble Learning Model approach provides space for teachers to develop their abilities in designing innovative and interesting learning in the school environment. Based on the research results, it was found that the process of reconstructing learning takes place where students recognize and understand economic learning at every level of the material. This can be seen in the research process, that the implementation of the economics learning process using the scramble type cooperative learning model is quite effective in producing students' ability to understand each material. Knowing the influence of the cooperative learning model type scramble on students' economic education learning outcomes using test formulas.

Based on these results, it can be said that the experimental class achieved scores above the criteria for completeness of learning outcomes compared to the learning scores of students in the control class. This cannot be separated from the teacher's ability to construct learning using the scramble learning model approach. So, through this scrambling model learning construction, students can think critically and build their capacity through various learning processes and models carried out in the learning unit.

However, there are several limitations that need to be acknowledged, first, this research was conducted in a specific school context only and with a limited sample, so generalizing the findings to a wider context may need to be done with caution. Second, the involvement of teacher subjectivity in designing learning can influence the interpretation and implementation of the Scramble approach, which can give rise to variations in results. So further research is needed that accommodates...more varied cases, and a larger sample, for a deeper and more comprehensive understanding.

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