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The Effect of Tai (Team Assisted Individualization) Cooperative Learning Model and Expository Model with Open-Ended Approach to Mathematical Connection Ability Reviewed From Initial Mathematical Abilities

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Abstract This study aims to determine the effect of TAI (Team Assisted Individualization) cooperative learning models and expository learning models with an open-ended approach to mathematical connection skills. This research was conducted at Bendungan Hilir Elementar School 09 and 01 Pagi, Tanah Abang, Central Jakarta in class VI of the first semester of the school year 2018/2019 using cluster random sampling with a total sample of 52 students. Data retrieval was done through tests and analyzed using two-way Variance (ANOVA) analysis with treatment design by level 2 x 2. The results showed that: (1) the mathematical connection ability of students treated using the TAI (Team Assisted Individualization) type cooperative learning model is higher than the students taught using the expository learning model, (2) there is an interaction effect between the learning model and mathematical initial abilities on mathematical connection skills, (3) the mathematical connection ability of students treated using the TAI (Team Assisted Individualization) type of cooperative learning model is higher than students who are treated using the expository learning model for students who have high initial mathematical abilities, (4) the mathematical connection ability of students treated using the cooperative learning type TAI (Team Assisted Individualization) model is lower than students who are treated using the expository learning model for students who have low initial mathematical abilities.

Keywords: *learning model, cooperative model type (team assisted individualization), expository model, open-ended approach initial mathematical abilities, mathematical connection ability*

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1. Introduction

Mathematics is one of the subjects in elementary school that is taught to develop mathematical abilities. The importance of developing mathematical ability since Elementary School to prepare students to be able to deal with changing conditions that always develop in the future. Mathematical abilities consist of five namely problem solving, reasoning and proof, communication, represents connections [1]. This mathematical ability is needed in an era where conditions will be competitive. With these mathematical abilities, students can develop a logical and systematic mindset.

On the other hand, mathematics given to the elementary school level intends to give students with the ability to think logically, analytically, systematically, critically, innovatively and creatively, and the ability to cooperate. In addition, the purpose of learning mathematics so students understand mathematical concepts, explain the relevance of concepts and apply concepts or algorithms flexibly, accurately, efficiently, and precisely in problem-solving [2]. This mathematical ability also prepares students to face a challenging future. With mathematical abilities that are built through mathematics learning helps students to deal with various problems in life caused by advances in Science and Technology that do not directly require a count.

Mathematical abilities that need to be taught to elementary school students are one of them is mathematical connection ability. This mathematical connection ability is very important for students to understand mathematics. When students are able to connect mathematical ideas, their understanding is deeper and longer. They can see mathematical connections in interactions that are rich between mathematical topics, in mathematical contexts for other subjects, and for their own interests and experiences [2]. On the other hand, Mhlolo, et al. Argued that students' ability to make incoming connections to mathematics itself was very important for conceptual understanding and for applications outside the discipline of mathematics [3]. Students who can associate between known concepts with new concepts to be studied by students, students will more easily learn and understand the concept.

Mathematical connection ability can develop if students have experienced themselves in learning mathematics. As suggested by experts, children must be able to interpret their real experiences in mathematical forms and understand the relationship between nonformal and mathematical expressions. To achieve this, it is necessary to apply the realworld situation to early mathematics education [4]. However, students are not successful in connecting mathematics to real life and their connections are limited to fairly shallow calculations and algorithms. It is known that students usually build shallow relationships between mathematics and real life [5]. In other words, most students can only connect mathematics in real life in the form of calculations. In the process of learning that was first introduced by the teacher is the process of calculating it rather than moving from the problem. As a result, students focus on calculations.

Then the results of the study state that students' interest is more interested in solving problems without connecting with reality than in problems with connections to reality [6]. Working on math problems in schools is indeed students preferring to just compute when the problem that links real problems is in the form of story problems, students are confused in the solution. This shows that students are unable to connect mathematical calculation formulas that are taught to real problems.

The low mastery of mathematics including mathematical connection skills is caused, namely; 1) The learning model used by teachers in teaching and learning activities has not varied, it is still dominated by teachers so students tend to get bored; 2) students' interest in the learning process is still low, this can be seen when the learning process takes place, many still do not pay attention; 3) students are less active and involved in the teaching and learning process which is characterized by students rarely asking the teacher; 4) learning outcomes that are not optimal, marked by daily test scores for low math subjects [7]. Such learning processes make it difficult for students to connect mathematics with real-life problems. Students feel that the learning process in school is not enough to connect mathematics with everyday problems. Learning mathematics in schools is generally about numbers and calculation examples. So, the teacher provides knowledge about the subject of mathematics and its application in real life is not enough for students [8]. Students only understand mathematics as limited as what is taught in school, when they encounter mathematical problems in real life they have difficulty completing them. This difficulty is caused because the learning process does not involve students in real everyday problems.

Another opinion, the problems faced by students in learning fractions 1) the difficulty of adding parts that are not the same as the overall procedural knowledge related to fraction comparisons. 2) some students find it difficult to understand the use of fractions in a counting operation that sums or reduces the original number. 3) Some students find it difficult to compare fractional parts to different fractions [9]. Indeed, in calculating (multiplication and multiplication) operations, fractions are different from natural count operations, because they cannot be directly calculated, adjustments need to be made. Here the teacher must try to strengthen the understanding of count operations which is supported by manipulation of concrete objects. The concept of multiplication of fractions that requires explanation and analogy uses a fractional image of concrete.

Another finding about the problem of fraction learning is that there are at least seven abilities in learning student fractions, namely: a) fraction recognition, (b) mathematical definitions and explanations for fractions, (c) arguments and justifications for fractions, (d) relative fractions, (e) fraction representation, (f) fraction connections with decimal, percentage, and division, and (g) reflection during fraction problem solving. Furthermore, students will have difficulty learning the material of fraction addition and multiplication, if 1) students do not have sufficient abilities in the introduction of fractions and the introduction of the relatively large fractions. 2) Not sufficient in the previous two abilities and in relation to decimals, percentages and fractions and representation. 3) Not sufficient in the previous four abilities, such as also in arguments and justifications about fractions, reflection during fraction problem solving, and mathematical definitions and explanations for fractions [10]. So, to understand and be able to calculate fraction addition and multiplication requires a strong basis.

Students who will study the subject matter of addition and fraction multiplication require sufficient initial abilities. Initial ability is the strongest predictor of student effort in exploring what content is learned [11]. The initial abilities brought by students in learning situations are the main factors that influence learning (as construction or modification of structural knowledge in long-term memory) [12]. Efforts to explore the content being studied are far more profound if students have high initial abilities. Similar to the previous opinion, students' initial abilities about the content of learning will have the greatest influence on learning. Students with little prior knowledge will benefit from instructional strategies that are different from those of relatively experienced students. Students with advanced knowledge typically can make good choices in conditions of high learning control [13]. Students who have high initial abilities have better student mathematics learning achievement with students who have low initial abilities [14]. From, some of the explanations above, the initial ability is very influential in the process of learning mathematics, students who have good initial abilities will make it easier for them to learn new material that is interrelated.

In an effort to improve the quality of learning mathematics in elementary schools, especially mathematical connexion skills. The teacher is expected to design and implement the learning that activates student thinking to improve students' mathematical abilities. Mathematics learning has not been used by many learning approaches. The learning approach is strongly influenced by teaching and learning environments, highlighting the importance of teaching which has a strong influence on the quality of learning for students [15]. One approach to mathematics learning that gives students the opportunity to think and actively learn to practice mathematical connection skills is an open-ended approach. Learning mathematics using an open-ended approach has an influence on improving the mathematical connection skills of elementary school students [16]. Similar to previous opinions, learning through an open-ended approach can improve the ability of connections and mathematical problem solving of students better than conventional learning [17]. The results of the above study indicate that learning using an open-ended approach can have a positive effect on mathematical connection skills

Learning using an open-ended approach provides open problems, so that classroom learning for teachers and students recognizes contributions in all learning processes and each student has confidence in their ability to find their own answers. Students who find their own answers in their own way add to their mathematical abilities. The problems presented allow students to find ways to solve according to their initial knowledge.

In learning mathematics not only teaches students about formulas but the power of mathematics. To build student strength in the use of mathematical processes must combine the use of mathematics to solve problems, apply logical reasoning to justify procedures and solutions, and involvement in designing and analyzing various representations to learn, make connections between, and communicate ideas inside and outside mathematics [18]. To develop strength in the mathematical process an approach is needed that is able to accommodate this. Learning uses an effective open-ended approach to aspects of mathematical problem-solving abilities and student attitudes to mathematics [19]. In open-ended learning, the questions given have more than one answer and method. This will develop students' thinking and abilities in mathematics.

In addition to the learning approach, learning mathematics requires a learning model that enlivens the learning process in the classroom. The TAI (Team Assisted Individualiztion) cooperative learning model is one that can revive the learning process in the classroom, the TAI type cooperative learning (Teams Assisted Individualization) produces mathematics learning achievements that are better than conventional learning models [20]. Cooperative learning type TAI (Team Assisted Individualization) can be used since the elementary school level. The use of cooperative learning type TAI (Team Assisted Individualization) models to hone skills independently then continued with group discussion. these groups are encouraged to be the best in resolving the problems given to groups.

In reality learning process in Indonesia, the expository learning model is often used by teachers in mathematics learning. Expository Learning Model is a learning process that is more teacher-centered. Learning with the process of receiving knowledge (subject matter) rather than the search for process knowledge and construction.. However, the Expository Learning Model that is applied in the learning process results in students being active, enthusiastic and able to understand the material even though the assignment given is quite tiring. This learning model is assessed by practical and effective teaching students to understand mathematical material. Students are required to listen to the explanations from the teacher and complete the practice questions according to the examples given by the teacher. This learning process is more honing students' skills independently guided by the teacher, so students are expected to master the teaching material. The expository learning model does not emphasize group work, the most important is that students actively work on many questions independently with the examples given by the teacher. Continuous use of the expository model causes learning to be monotonous and just a routine. Students do not feel the variety of learning processes.

Based on the discussion of the background above, the authors are interested in conducting research on "The Influence of Cooperative Learning Type TAI (Team Assisted Individualization) and Expository Learning Models with an Open-Ended Approach to Mathematical Connection Ability Reviewed from the Initial Mathematical Ability".

2. Methods

This research is an experimental research which is a quasi-experiment with treatment by level 2 x2 research design. This independent variable is a learning model namely cooperative learning type TAI (Teams Assisted Individualization) and expository learning model with an open-ended approach, the moderator variable is the mathematical initial ability, and the mathematical connection ability as the dependent variable. The research design is presented in the following table.

Table 1. Research Design Treatment by Level 2x2

Initial Mathematical Abilities (B)	**Learning Models with Open-ended Learning Approaches (A)**	
	Cooperative Learning Type TAI (A1)	expository (A2)
High (B1)	A1B1	A2B1
Low (B2)	A1B2	A2B2

Sampling was done by randomizing two schools from the grace six schools and obtained Bendungan Hilir Elementary School 09 in the morning and Bendungan Hilir Elementary School 01 Morning. Each school has 4 classes in VI. Furthermore, from each school randomized 2 classes to be sampled, obtained classes VI B and VI C at SDN Bendungan Hilir 09 Pagi as the experimental class and class VI A and class VI B at SDN Bendungan Hilir 01 Morning as the control class. The number of students in each class is 24 students.

Determination of students in high and low initial ability groups based on the results of the initial ability test by taking the top 27% score as a group of students with high initial abilities and the lowest 27% score as a group of students with high initial abilities [21]. The number of students from each group is presented in the following table.

Table 2. Research Samples

Mathematical Initial Ability s (B)	**Open-ended approaching learning model (A)**	
	TAI (A1)	expository (A2)
High (B1)	13	13
Low (B2)	13	13

3. Results

The score of students' mathematical connection ability in the group of students who were given the TAI type of cooperative learning (Teams Assisted Individualization) with open-ended approach and the expository learning model with the open-ended approach reviewed from initial mathematical abilities displayed as a table:

Table 3. Recapitulation of Descriptive Statistics Analysis of Students' Mathematical Connection Ability Using Cooperative Learning Type TAI (Teams Assisted Individualization) and Expository Learning with Open-ended Approach

Mathematical Initial Ability	Statistik	Cooperative Learning Model Type TAI (Assisted Individualization Teams)	Expository Model
High	N	13	13
	Average	84,54	69,92
	Standard Deviation	5,547	6,238
Low	N	13	13
	Average	70,31	76,15
	Standard Deviation	7,532	6,568
total	N	26	26
	Average	77,42	73,04
	Standard Deviation	9,729	7,034

The analysis prerequisite test results show that all data comes from populations of data that are normally distributed and have homogeneous data variants. Therefore, to test the hypothesis proposed in this study used a two-way Variant Analysis (ANAVA) test. If an interaction occurs, it will be followed by the Independent Sample T-test. The results of the two-way ANOVA test using the SPSS 23.0 software are presented in the following table.

Table 4. ANOVA Test Results in Two Paths of Mathematical Connection Ability Tests of Between-Subjects Effects

Dependent Variable: Score_Mathematical_Connection_Ability					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1818.615[a]	3	606.205	14.301	.000
Intercept	294302.769	1	294302.769	6943.097	.000
A	249.923	1	249.923	5.896	.019
B	208.000	1	208.000	4.907	.032
A * B	1360.692	1	1360.692	32.101	.000
Error	2034.615	48	42.388		
Total	298156.000	52			
Corrected Total	3853.231	51			

Differences in Students' Mathematical Connection Abilities Using Cooperative Learning Type TAI (Teams Assisted Individualization) with Open-Ended Approaches and Expository Learning Models with Open-Ended Approaches

To find out the difference in the average of the two groups, a two-way ANOVA test was carried out. In decision making, the probability value is located in the Significance column. If the significance value is> 0.05 then Ho is accepted.

Based on the results of ANOVA test calculations in Table 3 shows the results of SPSS 23.0 output on A = learning model the significance value is 0.019 < 0.05 then H0 is rejected, so it can be concluded that there are differences in the average mathematical connection ability of students treated with TAI learning models (Assisted Individualization Teams) with open-ended approach and expository model with open-ended approach.

The average mathematical connection ability in the group of students who were treated cooperative learning type TAI (Teams Assisted Individualization) model with open-ended approach was 77.42 while for the group of students who were treated expository learning models with open-ended approach had an average value of 73, 04. Thus, it can be concluded that the mathematical connection ability of the students treated the TAI type of cooperative learning model with open-ended approach was higher than the students given expository learning model with open-ended approach.

Effect of Interaction on Mathematical Initial Abilities and Learning Model with Open-ended Approach to Students' Mathematical Connection Ability

In this study, there was an influence of the interaction between the initial mathematical ability level on the application of TAI type of cooperative learning model with the open-ended approach and expository learning model the with open-ended approach on students' mathematical connection abilities. This can be seen in the calculation of two-way ANOVA significance value of 0,000 <0,05 = α, so Ho is rejected which means there is an influence of initial mathematical ability level on the application of TAI type of cooperative learning and expository learning model of ability mathematical connection of students. The results of this study have the influence of the initial mathematical ability level of interaction on the application of the TAI type of cooperative learning model (Teams Assisted Individualization) and expository learning model on students' mathematical connection abilities. Based on the discussion above, H0 is rejected. Therefore, it is necessary to proceed with simple effect testing.

The graphical form of interaction between learning models and mathematical initial ability on mathematical connection ability scores is presented in the following figure:

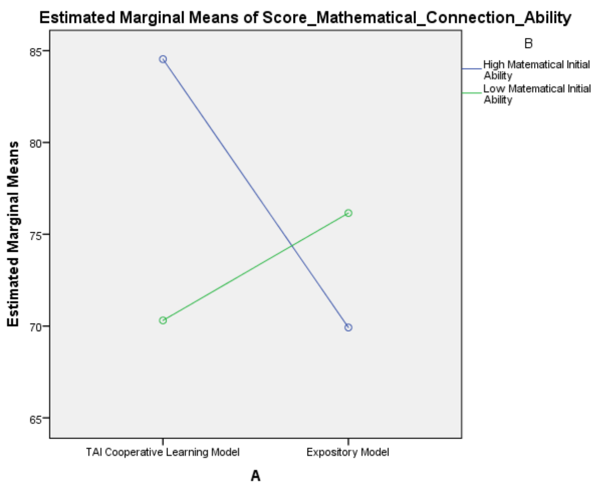

Figure 1. Graph of Interaction Learning Model and Mathematical Initial Model

Table 5. Calculation Results of Difference Test for Groups A1B1 and A2B1

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Mathematical Initial Ability	Equal variances assumed	.349	.560	6.313	24	.000	14.615	2.315
	Equal variances not assumed			6.313	23.677	.000	14.615	2.315

Table 6. Calculation Results of the Difference Test for Groups A1B2 and A2B2

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Mathematical Initial Ability	Equal variances assumed	.063	.804	-2.109	24	.046	-5.846	2.772
	Equal variances not assumed			-2.109	23.564	.046	-5.846	2.772

Differences in Mathematical Connection Abilities of Students Using Cooperative Learning Type TAI (Teams Assisted Individualization) Teams with open-ended approach and Expository Learning Model with open-ended approach to Groups of Students with High Early Ability

Based on Table 5 there is a significant value of 0,000 <0.05 = α, so that H0 is rejected. Then it can be concluded that there is a significant difference between the students given the open-ended approach and the TAI (Teams Assisted Individualization) cooperative model with an open-ended approach to students who are given an open-ended approach to the expository learning model on students' mathematical connections at the ability level high mathematical start.

The calculation of the average value of mathematical connection ability of students who have high mathematical initial abilities in the group of students who were given the TAI type of cooperative learning (Teams Assisted Individualization) with open-ended approach was 84.54 while for groups of students who were given an expository learning model approached open-ended has an average value of 69.92. Thus it can be concluded that the mathematical connection ability of students who have a high mathematical initial ability is given a cooperative model type TAI (Teams Assisted Individualization) with an open-ended approach higher than students given an open-ended approached expository model.

Differences in Mathematical Connection Ability of Students Using Cooperative Learning Models Type TAI (Teams Assisted Individualization) Open-Ended Approaches and Expository Models with Open-Ended Approaches in Groups of Students Who Have Low Early Capabilities

Based on Table 6, a significance value of 0.023 <0.05 = α so that Ho is rejected. Then it can be concluded that there is a significant difference between students given the TAI type of cooperative learning model (Teams Assisted Individualization) with the open-ended approach with students given the expository model with an open-ended approach to mathematical connections of students at low initial mathematical ability levels.

Calculation of the average value of mathematical connection ability of students who have low initial mathematical abilities in the group of students who were given the TAI type of cooperative learning (Teams Assisted Individualization) with open-ended approach was 70.31 while for groups of students who were given an open-ended approached expository model has an average value of 76.15. Thus it can be concluded that the mathematical connection ability of students who have a low initial mathematical ability is given the cooperative learning model TAI type (Teams Assisted Individualization) with an open-ended approach lower than the students given the expository model with an open-ended approach.

4. Discussion

Differences in Students' Mathematical Connection Ability Using Cooperative Learning Model Type TAI (Teams Assisted Individualization) with Open-Ended Approach and Expository Learning Model with Open-Ended Approach

The results of the first study were mathematical connection ability of students given the TAI type of cooperative learning model with open-ended approach higher than students given the open-ended expository learning model. So that it can be said that the TAI (Teams Assisted Individualization) cooperative learning model with open-ended and expository learning with open-ended approach applied to the learning process influences students' mathematical connection skills.

The TAI type of cooperative learning model (Teams Assisted Individualization) with open-ended approach as learning with motivation which can involve students both collectively and individually [22]. By using this learning students can be motivated to both reach the highest level in their group. Previously, students studied individually to understand the questions given by the teacher, so students know the extent of their abilities. After that, students together with groups in groups to find the right answer. The TAI type cooperative learning (team assisted individualization) model has the following steps: a) Phase 1: placement test. b) Phase 2: dividing students into small groups of 4-5 people. c) Phase 3: provide teaching material for individual assignments with open questions. d) phase 4: work in groups. e) phase 5: the teacher gives a small quiz. f) phase 6: the teacher explains in a classical manner. g) Phase 7: Formative tests and awards.

Meanwhile, the expository learning model is a learning process that students can solve problems by seeing the solutions that have been explained beforehand by the teacher. Expository learning is used by giving a prior explanation of the definitions, principles, and concepts of the subject by giving examples of problem-solving exercises in verbal form, demonstrations, answers to questions and assignments. Students follow the pattern determined by the teacher carefully [23]. This learning immediately explains the material to the students and then the students actively work on the problem exercises that are assisted by the teacher. The steps of the expository learning model are as follows: a) Phase. Preparation by conditioning and motivating students, b) Phase 2. Apperception: conveying learning objectives and linking material to real life, c) Phase 3. delivering material with explanations and demonstrations, d) Phase 4. providing guidance and connecting material, e) Phase 5. concluding material, f) Phase 6. Evaluation, g) Phase 7. Reflection.

There is an Effect of Interaction of Mathematical Initial Capabilities and Application of Learning Models to Students' Mathematical Connection Capabilities

The results the second hypothesis shows that the learning model has a different influence on mathematical connection skills if applied to students who have different initial mathematical abilities. This means, if you want to apply the learning model it is necessary to know the students' initial mathematical abilities in advance to map the learning actions and the depth of the material to be given to students.

The findings above reinforce previous findings that there are interactions between learning models and student levels of mathematical abilities. This shows that the increase in students' mathematical abilities is not only influenced by the learning used but is also influenced by the level of students [24]. The initial ability of students to make the teacher's reference to determine the steps of learning, the division of groups in the class.

Differences in Mathematical Connection Ability of Students Who Have High Mathematical Initial Ability Using Cooperative Learning Type TAI (Teams Assisted Individualization) and Expository Learning Models with Open-ended Approach

The results of the third study were mathematical connection ability of students who had high mathematical initial abilities and were given the TAI type of cooperative learning model (Teams Assisted Individualization) with open-ended approach higher than students who were given an expository model with an open-ended approach. The findings of this study indicate that groups of students who have high mathematical initial abilities who are given the TAI type of cooperative learning model (Teams Assisted Individualization) with open-ended are differences between students given an expository model with open-ended approaches. This is because the TAI type of learning (Teams Assisted Individualization) advantage of TAI type of cooperative learning is 1) weak students can be helped in solving problems. 2) Students are taught how to work together in a group. 3) Smart students can develop their abilities and skills. 4) There is a sense of responsibility in the group in solving problems [25].

The findings above are due to the TAI type of cooperative learning model (Teams Assisted Individualization) which further activates students learning in class. In accordance with the results of the study which explained the TAI type of cooperative learning model (Teams Assisted Individualization) was an open-ended approach effective in terms of activities and student achievement in mathematics [26]. This is due to learning using the TAI learning model (Teams Assisted Individualization) has advantages, namely 1) Reducing the burden of the teacher in correcting student tasks and in handling students who are slow; 2) The teacher still has time to distribute the time to each class with less time for "corrective instruction" and correcting student assignments, and 3) The system of awarding rewards to the team will motivate the cooperation of students in the group to work quickly and precisely [27]. So, students will try individually and in groups to achieve the best learning outcomes.

Differences in Mathematical Connection Ability of Students with Low Mathematical Initial Ability Using Cooperative Learning Type TAI (Teams Assisted Individualization) and Expository Learning Models with Open-Ended Approaches

The results of the fourth study were mathematical connection ability of students who had low initial mathematical abilities in the group of students who were given the TAI type of cooperative learning with an open-ended approach lower than the group of students given expository learning model with Open-Ended Approaches. Groups of students who have low initial abilities are accustomed to requiring explanations from the teacher directly. If the learning process by collaborating with friends tends to be busy on its own, joking with his friend because he lacks the task assigned by the teacher. This is because students in groups are busier working on their own tasks.

Students who have low initial abilities are not accustomed to learning independently. They tend to accept material understanding from the teacher's explanation and follow whatever the teacher exemplifies. If there is something different from the teacher's explanation, students tend to reject it. The position of the teacher needs to explain diverse examples to ensure students' understanding is diverse.

The results of the above research also strengthen the results of research that state expository learning has a positive impact on improving learning achievement [28]. This is because expository learning has the advantage that the teacher can control the order and breadth of learning material, this learning is effective if the material that must be mastered by students is quite extensive, while the time is limited. So, expository learning is effective for groups of students who have low initial mathematical abilities in expository learning groups. Therefore, the group of students treated with an expository model with open-ended approaches who had a low initial mathematical ability was higher than the group of students treated with an open-ended approach with a cooperative type TAI model (Teams Assisted Individualization).

5. Conclude

Based on the results of the study on the effect cooperative learning type TAI (Teams Assisted Individualization) and expository learning model with open ended approach to mathematical connection skills reviewed initial mathematical ability. So the researchers get the following conclusions:

a. The mathematical connection ability of students taught using the open-ended approach with the TAI type cooperative model (Teams Assisted

Individualization) is higher than the mathematical connection ability of students using the expository model. This means that the open-ended approach with the cooperative type TAI (Teams Assisted Individualization) approach has a more effective influence on mathematical abilities than the open-ended approach with the expository model.

b. There is an influence of the interaction between the learning model and the initial ability of mathematics towards mathematical connection skills. This means that learning with the TAI type of cooperative learning model (Teams Assisted Individualization) and expository learning models have an influence on mathematical connection skills and are very dependent on students' initial mathematical abilities

c. The mathematical connection ability taught using the TAI type of cooperative learning model (Teams Assisted Individualization) is higher than the student group taught using the expository learning model for students who have high initial mathematical abilities. This means that the use of the TAI type of cooperative model (Teams Assisted Individualization) is more effective than using the expository model for groups of students who have high initial abilities.

d. The mathematical connection ability taught using the TAI type of cooperative learning model (Teams Assisted Individualization) is lower than the mathematical connection ability taught by using the expository learning model for students with low initial mathematical abilities. This means that the use of the expository model has a more effective influence on the ability of mathematical connections in students with low initial abilities.

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