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The Influence of Mind Mapping and Jigsaw Type Learning Models in Differentiated Learning on Learning Outcomes of Life Cycle Materials

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Abstract: Research objectives: to analyze 1) the effect of the mind mapping type learning model on learning outcomes of the Living Cycle Materials, 2) the effect of the jigsaw type learning model on the Learning Outcomes of the Living Cycle Materials, 3) analyze the differences in the influence of the mind mapping and jigsaw type learning models on learning outcomes Life Cycle Material.Learning is a series of events that are complex and systematic. In this incident, there was interaction between educators and students in the context of changing attitudesand thought patterns that became habits as students. Learning and teaching are two activities that accur simultaneously, but have different meanings, as stated by Suherman (2003) that "teaching events are always accompanied by learning events, there are teachers who teach and there are also students who learn.This research method is quasi- experimental. Data collection techniques using tests, questionnaires and documents. The data analysis technique used is validity test, reliability test, normality test, homogeneity test, average similarity test, discriminatory test and N gain.The results of the study (1) There is an influence of the mind mapping learning model on learning out comes of Life Cycle Materials based on a tcount of 9.633 > ttable of 2.04841. (2) There is an influence of the jigsaw model on learning outcomes of Living Cycle based on tcount 20.602 > ttable 2.05954. (3) There are differences in the influence of the jigsaw and mind mapping type learning models on learning outcomes based on the value in experiment 1, which is 80.44 and experiment 2, which is 90.37. Thus, the influence of the mind mapping model is better than jigsaw model.

Keywords: learning mind mapping. Jigsaw. Learning outcomes.

1. Introduction

Education is an aspect of life that is very fundamental to the development of a country. Education plays an important role in developing and improving the quality of human resources. In improving the quality of human resources, various efforts have been made by the government, starting from training to improve the quality of teachers, improving the curriculum, as well as providing facilities and infrastructure that can support the quality of education. This aims to ensure that the learning process in schools can run optimally. The learning process at school can run optimally if the implementation of education at school involves teachers and students, in the form of teaching and learning interactions. In organizing education in schools, teachers must plan learning activities systematically and be guided by the applicable curriculum. Systematic planning and guided by the curriculum will determine success in achieving learning goals (Darusman, 2014: 61).

Gradually, the curriculum is being refined with the aim of improving the quality of education that is oriented towards the progress of the national education system. According to Tomlinson (2021: 45) Differentiated learning is an effort to adapt the learning process in the classroom to meet the individual learning needs of each student. Cooperative learning is one of many student-centered learning approaches. Cooperative learning is learning that demands cooperation, complements each other and can solve problems. Through cooperative learning strategies, students not only learn and accept what the teacher presents in learning, but can learn from other students, and at the same time have the opportunity to teach other students (Isjoni, 2011: 15).

This jigsaw learning model is a cooperative learning model in which students learn in small groups consisting of 4-5 people by paying attention to heterogeneity, working together positively and each member is responsible for studying certain problems from the material provided and conveying this material to other group members. Slavin (2019:11) the jigsaw type cooperative learning model is very appropriate to use if the material to be studied is in the form of a written narrative. In line with Slavin's opinion, Juliati (in Isjoni, 2010: 12) stated that cooperative learning is more appropriate to use in science learning. So, this method is very suitable when applied in Natural Sciences subjects.

Apart from using the jigsaw learning model to improve science and science learning outcomes, material on the cycles of living things can also be supported by mind mapping learning media. The use of mind maps will be able to improve student learning outcomes because the mind map media created by students themselves is built based on students' flow of thinking. This will produce results in the form of different mind maps for each student. Apart from being able to improve students' thinking abilities, Wycoft (in Listyawati, 2013) states that the advantages of mind maps include, a) seeing the "whole" picture, b) remembering well, c) being more creative, d) making detailed plans easier, e) make it easier to communicate, f) save time, g) solve problems. H) easy to concentrate, and i) organize and clear the mind. Learning by applying the mind mapping method improves the memory of students who reach the KKM (Fauzia et all, 2015).

Conceptual framework

However, the improvement of the curriculum is not balanced with the implementation of the curriculum in schools in the form of a learning process. Based on observations I made at SDN Sampung Class IV on January 6, 2023, in reality in the field and also at several schools in the immediate area of the school, many learning processes in schools still do not involve students or are still teacher-centred, so students are less active. and creative and less enthusiastic in receiving learning. There are still many teachers who use the lecture method where the teacher as the center of information explains the material and students sit quietly listening to and taking notes on the material presented by the teacher, so that students become passive and uncreative (Sulastri and Diana, 2009:16)

In line with several studies, (Gede Metta adyana, 2015),(Windura, 2016),(Ummi Rosyidah, 2016), (Arif Rahman, 2017), (Trianto, 2017), (Ngalim, 2018),(Lasroha Marito Simanullang., 2019), (Slavin, 2019), (Keizer & Pringgabayu, 2018), (Harmendi et al., 2021),

(Jember, 2018), (Benu, 2019), (Nurhayati et al., 2020), (Supriah & Muin, 2022), and (Juliansyah, 2021) who conducted research related to the influence of work motivation, principal leadership and the work environment on teacher performance.

Octobrianta, Arif Rahman. (Journal:2017). The Influence of the Jigsaw Type Cooperative Learning Model Accompanied by a Mind Map on Learning Motivation and Learning Outcomes of Class XI Students at SMA Muhammadiyah 3 Yogyakarta. e-Journal of Science Education Sebelas Maret University Surakarta PGSD Department Vol: 4 No: 2 Year: 2017 ISSN: 2627-977X. Based on the results of the analysis and discussion, it can be concluded that: (1) there is an influence of the jigsaw type cooperative learning model accompanied by a mind map on the learning motivation of class sig. of 0.040 < 0.05, 2) (2) there is an influence of the jigsaw type cooperative learning model accompanied by a mind map on the cognitive learning outcomes of class Kruskal Wallis for the student's N-gain score shows the Asymp value. sig. equal to 0.000 < 0.05.. The use of the jigsaw learning model accompanied by a mind map is better in terms of learning motivation and cognitive learning outcomes compared to classes that only use the jigsaw learning model and classes with conventional learning.

Lasroha Marito Simanullang (Journal 2019). The Influence of Jigsaw and Stad Learning Models on Poetry Learning Outcomes in Class VIII Students of SMP Negeri 19 Medan in the 2018/2019 Academic Year. EduTech Journal Vol. 5 No. 2 September 2019 ISSN: 2442-6024 e-ISSN: 2442-7063. The results of the hypothesis test show that there is a significant difference in influence between the Stad and conventional learning models on poetry learning outcomes. This is proven by the Fcount price of 3.230. It was found that sig < α, namely 0.044

< 0.05, so it can be concluded that the accepted hypothesis is Ha. It can be seen that the sig prices obtained by each pair are 0.884 (Jigsaw-Stad), 0.436 (Jigsaw-conventional) and 0.039 (Stad-conventional). To find out what criteria each pair has, compare sig with α. For Jigsaw- Stad (0.884 > 0.05), Jigsaw-conventional (0.436 > 0.05) and Stad-conventional (0.039 < 0.05). Thus it can be seen that the Jigsaw-Stad pair receives H0, the Jigsaw-conventional pair receives H0 and only the Stad-conventional pair receives Ha. So it can be concluded that the application of the Stad model has an influence on poetry learning outcomes in class VIII of SMP Negeri 19 Medan. Student learning outcomes in 3 elementary schools are low. It is proven from observations made by researchers on students from each school, including some students who have not fully participated in their learning and are still at their own pace, teachers are still the center of attention of students so that learning outcomes are less than optimal. the learning process is monotonous, teachers have not used many learning models. cannot be conveyed to students optimally. Apart from that, several factors cause low student learning outcomes in 3 sample schools in the Wurikatawu cluster, Sarang District, Rembang Regency, namely the low ability of teachers to develop teaching materials that are relevant and in line with current developments, the low motivation of teachers in making learning fun, and also the low level of teacher learning. who have a strong desire to improve professionalism, such as mastering teaching materials, writing scientific papers, and also using learning methods or strategies that are appropriate or in accordance with the teaching materials and

student characteristics

The results of the observations I made show that there are still many teachers who are not able to use learning models that suit the characteristics of their students and are also appropriate to the material being taught, and their time is not used properly for creativity. A teacher's lack of motivation to demonstrate his role as a professional teacher can be seen from the low student learning outcomes in several natural science subject matter. Based on these problems, researchers need to conduct further research so that they can produce better changes.

It can be concluded that from the relevant results of previous research there is an influence of mind mapping and jigsaw learning models on science learning outcomes in elementary schools. Thus, it can be said that the more teachers use a variety of learning models that suit their character and appropriate material, this will lead students to be more enthusiastic in participating in every lesson that will be delivered by the teacher and will also be able to motivate children in the future.

Research objectives

The aims of this study were Analyzing the combined effect of two learning models, mind mapping and Jigsaw, on the learning outcomes of life cycle material for class IV students.

2. Methodology

Research design

The research design used in this research is*pretest-pottest control group design*. In this design, the experimental group receives treatment and receives treatment*pretest* before treatment and posttest after treatment the experimental group and control class did not receive treatment but did*pretest dan posttest.*This research design is a design that provides treatment to the experimental group by giving an initial test (*pretest-postest*) before giving treatment and after receiving treatment between the experimental group and the control group then the final test was given (*posttest*).

The population in this study was class IV of the State Elementary School Sampung, the State Elementary School of 1 Babaktulung and the State Elementary School of Tawangrejo Rembang. The sample in this study amounted to 87 students consisting of 30 grade IV students at State Elementary School Sampung, 30 grade IV students at 1 Babaktulung State Elementary School and 27 grade IV students at Tawangrejo State Elementary School.

Data collection techniques in this study consisted of, tests, questionnaires and documentation. The test technique in this study was used to determine student learning outcomes in science subjects. The test was conducted by giving pretest and post-test to the experimental and control groups. Documentation is used to strengthen the data obtained and is also used as authentic evidence that the researcher has actually carried out the research, while the questionnaire is used to determine student responses to the learning model.

Analysis of the data in this study through validity test, reliability test, normality test, homogeneity test, average similarity test, paired sample T test and gain index calculation.

3. Findings and Discussion

This research was conducted on all elementary school teachers in the Selodiri cluster, Kragan District, Rembang Regency. The research implementation was a field study taken with a questionnaire to reveal work motivation, principal leadership, and work environment culture on teacher performance according to respondents' perceptions. The research data that will be presented is in the form of analysis requirements test data and research results data. Based on the results of research data analysis as follows:

Test Requirements Analysis

a. Normality test

The normality test is carried out to determine whether the samples taken in the study are normally distributed or not and the normality test for the observed data used in this study is the Kolmogorov-Smirnov normality test.[a] and the Shapiro-Wilk test, where the test results are as follows H0 = The sample comes from a normally distributed population if $X^{count} \geq X^{Table}$,H1 = The sample does not come from a normally distributed population if $X^{count} \leq {}_{X}$Table. Statistical results using the program*spss for windows 24* For reliability, it can be seen in the following table.

Tabel 4.7 Hasil Uji Normalitas (*Test of Normality*)

	Class	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Say.	Statistic	df	Say.
Student Science Learning Outcomes Material Cycles of Living Creatures	Pretest Experiment 1	.144	30	.117	.965	30	.418
	Posttest Experiment 1	.181	30	.103	.931	30	.253
	Pretest Experiment 2	.274	27	.076	.811	27	.110
	Posttest Experiment 2	.256	27	.086	.860	27	.132
	Pretest Kontrol	.234	30	.112	.802	30	.187
	Posttest Control	.236	29	.155	.880	29	.283

The results of the normality test of data on science learning results regarding the cycles of living things in the table above show that at a significance level of 5% or 0.05. The significance value is greater than 0.05 at the 5% significance level so that the null hypothesis (H0) for each class is accepted. Thus, it is concluded that the data in each class is normally distributed. This normality assumption is necessary because if normality is not met, the hypothesis testing decision (t-test) obtained will be invalid.

b. Homogeneity Test

The next test is the homogeneity test, the results of the test on the students' life cycle material are then looked at for homogeneity. The homogeneity test is used to measure whether the two classes come from a homogeneous population, meaning that the abilities of all students are the same. The data from the homogeneity test calculations for the two classes, namely the experimental class and the control class, obtained results as presented in the following table.

Tabel 4.8 Homogeneity Test Results

		Levene Statistic	df 1	df2	Say.
Student Science Learning Outcomes Material Cycle of Creatures Life	Based on Mean	1.151	2	84	.321
	Based on Median	1.027	2	84	.363
	Based on Median and with adjusted df	1.027	2	75.317	.363
	Based on trimmed mean	1.183	2	84	.311

Based on the SPSS output results, it is known that the results are significance (sig) based*on mean* is 0.321 > 0.05 at the 5% level so it can be concluded that the data variance in the control and experimental classes is the same or homogeneous.

Hypothesis test

After learning is carried out, it is discovered that there are differences in the average learning outcomes, then a hypothesis test is carried out. Testing the hypothesis in this research uses a test.*paired-samples t test* to find out whether the average learning outcomes of the experimental class are better than the control class or vice versa. This test is used to make a decision whether the hypothesis is accepted or rejected. To determine the increase in learning outcomes in this research, the gain index calculation was used.

The Influence of Learning Models Tipe Mind Mapping in differentiated learning on Class IV Student Learning Outcomes

Experimental class 1 using a learning model*mind mapping* held on 7-9 August 2023 at SD Negeri 1 Babaktulung, Sarang District, Rembang Regency with three meetings, namely the first meeting providing a pre-test to determine students' initial abilities, then the second meeting for treatment of the learning model*mind mapping* and the third meeting for*posttest* learning outcomes regarding the cycles of living things. The instrument is a multiple-choice test that

measures the abilities of class IV students in science subjects, material on the cycles of living things, adjusted to achievement indicators.

Based on the SPPS output, it can be explained that*pretest* Experimental class 1 in class IV at SD Negeri 1 Babaktulung, Sarang District, Rembang Regency got a minimum score of
46.67 while the maximum score was 66.67 and the mean or average was 60.74. on*posttest* by using a learning model*mind mapping* Experimental class 1 has an average/mean of 90.37, a minimum score of 80 and a maximum score of 100.

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4. Discussion

Based on the results of data analysis, it can be seen that the mind mapping and jigsaw learning models have an influence on student learning outcomes in 3 sample schools in the Wurikatawu cluster, Sarang District, Rembang Regency. The influence of these three variables is positive, meaning that it is better for students' learning motivation, a better learning environment and also a learning atmosphere that is more popular with children in 3 elementary schools in Sarang District, Rembang Regency.

Experimental class 1 using the Mind Mapping learning model was held on 3-5 January 2023 at the 1 Babaktulung State Elementary School, Sarang District, Rembang Regency with three meetings, namely the first meeting giving a pretest to determine the students' initial abilities, then the second meeting for the treatment of the mind mapping learning model and meeting The third is for the posttest of the science learning outcomes of the cycle of living thing material. The instrument is in the form of a multiple-choice test that measures the ability of class IV students in the science subject of the cycle of living thing material which is adjusted to the achievement indicators.

The implementation of the mind mapping learning model in the experimental class 1 which was carried out in class IV of the 1 Babaktulung State Elementary School, Sarang District, Rembang Regency was in the good category. This shows that the stages or syntax of the mind mapping learning model starting from the preliminary activities, core activities and closing have really been carried out properly as an effort to provide treatment to improve students' science learning outcomes. Based on the results of the paired samples test that there is a difference in the average student learning outcomes for the pre-test and post-test experimental class 1. Thus, it can be concluded that there is an effect of mind mapping learning model on science learning outcomes for class IV cycle of living things material. 1 Babaktulung State Elementary School, Sarang District, Rembang Regency. Based on the results of the N-Gain Test, it is known that the increase in science learning outcomes for grade IV students in the cycle of living things material by using the mind mapping learning model at the 1 Babaktulung State Elementary School, Sarang District, Rembang Regency has experienced a high increase, thus it can be concluded that there is an influence of the learning model. mind mapping on student learning outcomes.

The results of the study are relevant to the research of Gedhe Metta Adnyana (2015) that there is a significant difference in social studies learning outcomes between groups of students who study using a jigsaw type cooperative learning model with the aid of mind mapping (mind maps) and groups of students who learn using conventional class V learning. Even Semester of Elementary School in Cluster I, Buleleng District, Buleleng Regency, 2014/2015 Academic Year. This is obtained from the results of the t-test calculation, thit is 5.69, meanwhile, ttab (with db=47 and a significance level of 5%) is 2.021. This means that thit is greater than ttab (thit > ttab), so H0 is rejected and H1 is accepted. From the average (X), it is known that (X) the experimental group is 22.34 and (X) the control group is 17.13. This means that (X) experiment > (X) control. Thus, the jigsaw types cooperative learning model assisted by mind mapping has an effect on students' social studies learning outcomes.

Also, in line with the research results of Any Rosidah (2015) Application of Jigsaw Type Cooperative Learning with Mind Mapping Techniques to Improve Social Studies Activities and Learning Outcomes in Class VIA Krecek State Elementary School 1, Badas District, Kediri Regency. Journal of Basic Education review. The results showed that the student's activity in learning cycle I reached an average of 77.00 with a completeness percentage of 56%, increasing in cycle II the average to 98.87 with a 100% completeness percentage. student learning outcomes showed that in cycle i the average student was 67.00 with the percentage of classical completeness reaching 40% or 10 students completed and 15 students did not complete increased in cycle ii with an average of 77.88 students' classical completeness percentage reached 88% or 22 students completed and 3 students did not complete in learning.

Mind mapping is a way of developing thinking activities in all directions, capturing various thoughts from various angles. Mind mapping develops divergent thinking and creative thinking. Mind mapping which we often call concept maps is a very powerful organizational thinking tool which is also the easiest way to put information into the brain and retrieve that information when needed (Tony Buzan, 2018:4). According to Tony Buzan (2016), Mind Maps can help us for many things such as: planning, communicating, being more creative, solving problems, focusing attention, organizing and explaining thoughts, remembering well, learning faster and more efficiently and practicing drawing.

whole. In terms of time Mind mapping can also make efficient use of time in studying information. This is mainly because this method can provide a comprehensive picture of a matter, in a shorter time. In other words, Mind mapping is able to cut learning time by changing time-consuming linear note-taking patterns into effective notes that can be directly understood by individuals (Hendry, 2011: 41).

Experimental class 2 using the Jigsaw learning model was held on 6-8 January 2023 at the Tawangrejo State Elementary School, Sarang District, Rembang Regency with three meetings, namely the first meeting giving a pretest to determine the students' initial abilities, then the second meeting for the treatment of the jigsaw learning model and meeting the third is for the posttest of the science learning outcomes of the solar system material. The instrument is in the form of a multiple-choice test that measures the ability of class IV students in the science subject of the cycle of living things material which is adjusted to the achievement indicators.

Based on the explanation and research results, it is known that the Jigsaw learning model in experimental class 2 which is carried out in class IV of the Tawamgrejo State Elementary School, Sarang District, Rembang Regency is in the good category. This shows that the stages or syntax of the jigsaw learning model starting from the preliminary activities, core activities and closing have really been carried out properly as an effort to provide treatment to improve students' science learning outcomes. Based on the results of the paired samples test, that there is an effect of the jigsaw learning model on the science learning outcomes of the sixth-grade cycle of living things material at the Tawanhrejo State Elementary School, Sarang District, Rembang Regency. The improvement of science learning outcomes for grade IV students on the material of the cycle of living things using the jigsaw learning model at the State Elementary School of Tawangrejo, Sarang District, Rembang Regency experienced a moderate increase, thus there was an influence of the jigsaw learning model on learning outcomes.

The results of this study are in line with the research of Ni Made Nedya Andraena Jessika (2014) that there is an effect of the jigsaw type cooperative learning model on the science learning outcomes of Class VI students of State Elementary School 6 Dauh Waru Negara. Likewise with the research of I Nyoman Adi Widiana, I Nyoman Murda, I Gede Margunayasa (2015) the results showed that there was a significant difference indicating that the application of the Jigsaw 1 Cooperative learning model and concrete media had a more positive effect on students' science learning outcomes compared to the learning model. conventional.

The results of this study indicate that the theory that jigsaw is a type of cooperative learning that encourages students to be active and help each other in mastering the material to achieve maximum achievement. In its application students are formed in groups, each group consists of a team of experts according to the questions prepared by the teacher, a maximum of five questions according to the number of expert teams (Ifa, 2013).The jigsaw model of cooperative learning is a cooperative learning model that focuses on student group work in the form of small groups, as stated by Lie (2011: 73), that this jigsaw model of cooperative learning is a cooperative learning model where students learn in small groups that consists of four to six people heterogeneously and students work together in a positive and responsible interdependence independently. In this jigsaw learning model students have many opportunities to express opinions, and manage the information obtained and can improve communication skills, group members are responsible for the success of the group and the completeness of the material being studied, and can convey to the group (Rusman, 2018.203).

Then also the results of the study show that there is a difference in the effect of the mind mapping learning model at the 1 Babaktulung Sarang Rembang State Elementary School and the jigsaw learning model at the Tawangrejo Sarang Rembang State Elementary School on the fifth-grade science learning outcomes in the Cycle of living things material. Another difference in influence can also be seen from the results of the calculation of the gain index for increasing science learning outcomes for the cycle of living things material in the experimental class 1 using mind mapping learning that the Ngain value is mostly in the medium category. While the calculation of the gain index for increasing science learning outcomes for the solar system material experimental class 2 using jigsaw learning that the Ngain value is mostly in the high category. So, it can be concluded that there is a difference in the effect of the mind mapping learning model and jigsaw on improving science learning outcomes for the sixth grade cycle of living things material at the Elementary School, Sarang District, Rembang Regency and it is known that the experimental class 2 using the jigsaw learning model experienced higher learning outcomes. higher than the experimental class 1 which uses the mind mapping learning model.

Improving learning outcomes by using the jigsaw learning model is indeed in line with the characteristics of the learning outcomes themselves that learning outcomes are "the result of an interaction of act of learning and act of teaching" (Dimyati and Mudjiono 2013). One of the learning outcomes is cognitive learning outcomes. The results of

this study are learning outcomes seen from intellectual abilities related to knowledge. In line with O'Brei (in Erina and Heru, 2015) says that cognitive learning outcomes are "a description of the level of mastery of students on the subjects they take or mastery of students on something in learning activities in the form of knowledge or theory that involves knowledge and development, skills intellectual property which includes recall or acknowledgment of facts, procedural patterns, and concepts in the development of students' intellectual abilities and skills. This means that cognitive learning outcomes can be improved with a jigsaw model that involves the active participation of students.

Jigsaw cooperative learning is "one of the types of cooperative learning that encourages students to be active and help each other in mastering the subject matter to achieve maximum achievement" (Sulastri and Diana, 2009). Meanwhile, according to Kurniasih and Berlin (2016) jigsaw is "a cooperative learning model designed to increase students' sense of responsibility towards their own learning and also the learning of others" from this opinion it can be concluded that this jigsaw type cooperative learning model is a learning model that focuses on students to work together in groups so that learning achievement is achieved. Sugianto, et al (2014) stated that the jigsaw type of learning model has the following characteristics that "a) Students work in groups cooperatively to complete the learning material, b) Groups are formed from students who have high, medium and low abilities, c) Whenever possible, group members come from different races, cultures, ethnicities, genders,

d) Rewards are more oriented to groups than to individuals.

The results of this study are also in line with Fadliyani et al (2014) that "this jigsaw learning model is able to significantly improve student learning outcomes, students are also more active, can work well in groups, and have a passion for learning. Compared with students who are taught with conventional learning. Meanwhile, according to Isjoni (2012) "this jigsaw type of learning even though the teacher still controls the rules, he is no longer the center of class activities, but the students are the center of class activities" from the above opinion it can be concluded that the jigsaw type of learning model is a learning model that can be used in the learning process and students can be active in it compared to teachers who are the center of learning such as conventional models.

5. Conclusions and Recommendations

There is the influence of the type of learning model*mind mapping* in differentiated learning on Learning Outcomes Material Cycles of living things for Class IV Students in Sarang District, Rembang Regency, this is based on grades*uji paired samples test* above, the Sig value is obtained. (2-tailed) of 0.000 < 0.05, or t_{count} 9,633 > t_{table} 2, 04841.There is an influence of model type *jigsaw* in differentiated learning on Learning Outcomes Material Cycles of living things for Class IV Students in Sarang District, Rembang Regency, this is based on the results*uji paired samples test* onSig value obtained. (2-tailed) of 0.000 < 0.05, or tcount20,602 > ttable2,05954. Teachers should be more innovative in learning by implementing cooperative learning models in science learning so that learning outcomes can improve. If we refer to the results of this research, the jigsaw learning model can be a reference for teachers. For other research, it is important to know that the results of this research are limited by place, time and student circumstances. Therefore, if you want to develop research results in other places, it is likely that the results will be different.

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