The Effect of The Make A Match Model Assisted with Question Answer Card in The Excretion System Material on Students' Motivation and Cognitive Learning Outcomes

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Abstract

The purpose of this study was to determine the effect of the model make a match assisted by question answer card on the excretion system on students' motivation and cognitive learning outcomes. The design of this study is Nonequivalent Control Group Design. The population of this research are students of class VIII semester 2, SMP N 1 Karangsambung, Kebumen. The samples to be used are class VIII A (experimental class) and VIII B (control class). Sampling technique with cluster random sampling. Analysis of the data used by the n-gain test and t test. This study has the results that there is an influence of make a match model assisted by the question answer card on the motivation and cognitive learning outcomes of students. The effect can be seen from the results of an increase test using N-Gain, the results obtained from the data that there is an increase in students' cognitive learning outcomes. Based on the results of this study "The effect of the model make a match assisted by question answer card on the excretion system material on motivation and cognitive learning outcomes of students" that have been done can be concluded on the model of a make a match assisted question answer card affect the cognitive learning outcomes of students with a value of t_count 4, 4945> t_table 1.9990 and the model of a make a match assisted by question answer card affect the motivation of students' learning with a value of of t_count 3.44879> t_table 1.9989.

How to Cite

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INTRODUCTION

Education is an important component in order to increase the national intelligence. The benchmark of a nation is said to be a developed country if it has a good quality in education. One of the goals of the Indonesian country which is set out in the 4th paragraph of 1945 Constitution's preamble, namely enriching the nation's life. So, the effort to gain this goal through the implementation of education in a country must be based on a predetermined reference. Education references in Indonesia are listed in the National Education Standards.

National Education Standards contain of the minimal criterion about education component. One of the components defined is learning activities which is carried out by the educators. Regulation of the Minister of Education and Culture Number 22 of 2016 explains that the learning process in educational units is held interactively, inspirational, fun, challenging, motivates students to participate actively, and provides sufficient space for prejudice, creativity, and independence according to their talents, interests, and physical and psychological development of students. The learning model is one of the elements of education which is developed to advance the education in Indonesia. According to Handika (2012), there are many aspects that affect the quality of education, including the use of learning models and media. The learning model that will be used cannot be separated from the material that will be delivered. The excretion system material in humans is one of the materials that has many sub-chapters, there are the kidneys, liver, lungs, skin, also the processes that occur in each of these excretory organs. Efforts to achieve the effective learning and the achievement of learning objectives must apply the correct learning model. Learning models must inspire, attract, fun, challenge, motivate students to participate actively, and provide sufficient space for student initiative, creativity, and independence. (Abdillah et al., 2017).

Make a match learning model is learning by finding pairs of cards. In practice, students are asked to find pairs of cards that are held regarding the concept of the material which is being taught (Anisarah & Sunarti, 2012). The application of the make a match learning model can make students active in learning activities. According to Aqil (2018), one of the advantages of this learning technique is that students find partners while learning about a concept or topic in a fun class. The lack of make a match model was said by

Nurani (2018), that the class became noisy and pressed on the individual abilities of students. The method that is used to anticipate the lacks of the make a match model is (1) making clear rules of the game, so students don't get confused when the game is started., (2) Setting the time allocation needed, so that the learning process can take place efficiently. The use of this technique is expected that the teacher can provide opportunities for students, to share ideas and consider the most appropriate answers, also encourage students to have a spirit of cooperation (Sundari & Suryadi, 2018).

The make a match learning model will be more optimal if it is supported by the use of learning media. Sudjana & Ahmad (2017:2) stated that the use of media in learning process can facilitate understanding of the material, grow the learning motivation, and encourage students to be active in learning activities. Learning media that can support the make a match model, one of these is the question answer card. Question answer card (QAC) contains of questions and answers. Febrina et al. (2013), the use of Question Answer Card media can be called a game in a learning that will eliminate boredom and create a competitive atmosphere in the class. By using this media, students are expected to be active and able to increase students' curiosity to find answers from the questions which is given by the teacher during the learning process. (Astuti et al., 2019). This Question answer card is used at the core stage of learning, which is during discussion. Students match answer cards and question cards with their groups (Nurohma et al., 2018).

Based on the observation results that is done at SMP Negeri 1 Karangsambung, there were still several problems in the science learning process. These problems include the low of student learning motivation in learning activities, this problem can be seen when the teacher gives assignments, there are still many students who do not complete it. Also when the teacher gives students the opportunity to present in the front of class, the responses of other students are only silent and do not give opinions or rebuttals related to the material which is presented by their friends. The same thing appear when the teacher invited students to ask questions related to learning material, there was no response from the students.

Based on the scores data of the odd semester science final exam of the 2019/2020 class VIII academic year, it was obtained from the number of students of class VIII SMP Negeri 1 Karangsambung as many as 250 students, 133 students (53%) the score was still below the Mi-

nimum Mastery Criteria and the remaining 117 (47%) were already above the Minimum Mastery Criteria with 75 Minimum Mastery Criteria. Based on the interview results with the students, students expect new things in learning that can increase their interest in science. Students also need learning that has more discussions and games, so the students are more actively involved in the learning process and there will be interactions between students that make unmonotonous learning. A learning which the students just more listen and write the explanations from the teacher will make students lack interaction in learning activities. The use of methods that are dominated by teachers like this, will make boring learning. The accuracy in choosing a learning model, the availability of supporting facilities and infrastructure for learning, such as learning media, really helps students to understand a material.

Based on the description above, it is necessary to make changes in learning activities, so that students will have high learning motivation and they will not bored when learning process. Learning motivation is an encouragement which is contained inside and outside of students to carry out activities, and it will determine the learning outcomes that students will get (Sediyanti et al., 2018). Students who are highly motivated in learning are likely to get high learning outcomes, meaning that if the motivation and the intensity of the effort is higher, they will get the higher learning achievement (Hamdu & Lisa, 2011).

The accuracy in choosing a learning model that involves students too much in every learning activity will determine students' academic and non-academic abilities (Kurniawan, 2013). One of the ways that can be done is to use a fun learning model equipped with attractive learning media to increase student motivation and their cognitive outcomes. The use of media really helps students to easily understand learning material more deeply and completely. The learning model which is chosen was the *make a match* learning model, with the media in the form of a *question answer card*. The Febriana's research outcomes (2011), the use of make a match learning model shows high student motivation, this is indicated by the accuracy of finding a partner, good cooperation in doing assignments, courage in presenting results, arguing and asking questions. Based on the explanation above, so the researcher conducted a study with the title: "The Effect of *Make A Match* Model Assisted by *Question Answer Cards* on the Excretion System Material on Student Motivation and Cognitive Learning Outcomes"

METHOD

Research design

This is a quantitative research with experimental research type, because it aims to find the effect of a treatment. The design of this study use a *nonequivalent control group design*.

Procedure

The steps in the preparation stage are as follows: (1) conducting preliminary observations through interviews with teachers to determine students' initial abilities and obtain data about student motivation and cognitive outcomes through direct interviews with field teachers. Arranging a learning design using *make a match model* with the experimental class *question answer card* and using the *discovery learning model* for the control class., (2) determining the class that will be used as a sample in the study from a population whose homogeneity and normality have been tested., (3) arranging learning tools that include syllabus, lesson plans, student discussion sheets, student motivation questionnaires, assessment sheets (rubrics), question grids and evaluation tools in the form of questions. (4) Doing test questions in class IX to determine the validity, reliability, power difference, and level of difficulty. After being analyzed, several questions were taken that have a good criteria for use in the control and experimental classes.

At the implementation stage of the research is carried out (1) taking preliminary data on cognitive learning outcomes using the results of multiple choice questions and student learning motivation using a questionnaire sheet., (2) experiment class learning use *make a match* model aided with *question answer card,* while control class use *discovery learning* model., (3) taking the final data of cognitive learning outcomes using the results of multiple choice questions and student learning motivation using a questionnaire sheet.

In the analysis stage, the data that the researcher has obtained are used in drawing conclusions. The data analyzed is the dependent variable taken by the researcher, namely the student's cognitive learning outcomes and student learning motivation. The results of the data analysis were used to determine the effect of *make a match* model assisted by the *question answer card* on the excretion system material on students' motivation and cognitive learning outcomes, then a conclusion was taken.

Sample

Taking 2 samples from the population to

be used as an experimental class and a control class. The scores data for the odd semester of 2019/2020 school year in science subjects were used to determine 2 samples. Based on that scores and homogenity test, the sample has been obtained with class VIII A as the experimental class and VIII B as the control class.

Instrument

The data collection techniques used were questionnaires, documentation, cognitive tests, and observations. The types of data taken were cognitive tests using objective question instruments, and student learning motivation using questionnaire sheet instruments.

Data Analysis

Initial data analysis includes a homogeneity test of research data. Initial data in the form of student learning outcomes data before the study aims to determine the criteria for the two sample classes were used. The homogeneity test was conducted to determine the variant homogeneity of the cognitive test results data in the control class and the experimental class. The homogeneity test is intended for initial data analysis. The data homogeneity test was carried out using the F test with the following formula.:

F=(The largest variant)/(The smallest variant)

The testing criteria are;

If $F_{Count} > F_{0,5\alpha(n1-1)(n2-1)}$, it means that the data class of second variants are different.

If $F_{Count} < F_{0,5\alpha(n1-1)(n2-1)}$, it means that the data class of second variants are same.

If the testing criteria $F_{count} < F_{table}$, so that H_o is accepted, while $F_{count} \geq F_{table}$, so that H_a is accepted.

The final analysis data aims to answer the hypothesis which has been stated. Normality testing is used to know whether students's test scores data in an experiment class and control are normal or not. The formula which is used for testing the normality of the data is Chi-Square.

$x^2 = \sum_{(t=1)}^{k} (Oi-Ei)^2/Ei$

Explanations:

X^2 = Chi square

Oi = Observation Result Frequency

Ei = Expetation Frequency

k = Number of Interval Classes

The hypothesis is given:

Ho = Normal Distribution

Ha = Abnormal Distribution

The level of significance is 5% with degrees of freedom d_k = k-1. The testing criteria if $_{count} < _{table}$, so that H_o is accepted, while $_{hitung} \geq _{table}$, so that H_a is accepted.

The improvement of the student's cognitive learning outcomes test results can be analyzed by the N-gain formula. The test of increasing cognitive learning outcomes aims to determine the increase in student cognitive learning outcomes before the treatment is given and after the treatment is given. The formula for calculating the N-gain is as follows:

N-gain (g)= (posttest score-pretest score)/(maximum score-pretest score)Explanations:

= Number of gain factor

Posttest score　 = The final result score

Pretest score 　= The initial results score

Maximum score= The maximum test score

Hypothesis testing on samples of size n and have correlation coefficient of r can use the t statistic.

t = $(x̄_1-x̄_2)/(\sqrt{(s\&1/n_6+1/n_2})$

t = test t, = the average score of experimental class,

$x̄_2$ = the average control of control class,

S = the variant data of class score,

n_1 = number of experimental students,

n_2 = number of control class students

Hypothesis testing criteria are as follows: Hypothesis can be accepted if the result is t_{count} (experiment class) > t_{table} (control class). (1) H_0 is accepted if $t_{count} < t_{(1-\alpha)(n1+n2-2)}$ it means that in the application of ethnoscience-based SIL model on environmental pollution material there is no difference in cognitive learning outcomes and environmental care attitudes of students in the control class with the experiment., (2) H_a is accepted if $t_{count} \geq t_{(1-\alpha)(n1+n2-2)}$.

So, from the results of the student learning motivation questionnaire, the assessment criteria can be divided into 5 categories.

RESULTS AND DISCUSSION

The instrument which is used to measure students' cognitive learning outcomes was multiple choice question based on the bloom taxonomy for the *pretest* and *posttest*. The data from the pretest and posttest results with 75 Minimum Mastery Criteria were analyzed and the percentage of students' cognitive learning outcomes in the control class was 40% at the *pretest* and 50% at the *posttest*, whereas in the experimental class 50% at *pretest* and 78% at *posttest*. The the percentage graphic of students' cognitive learning outcomes in the control and experimental classes can be seen in Figure 1.
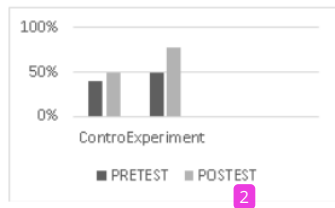
Figure 1. Percentage of limited cognitive learning outcomes in the control and experimental classes.

Normality is tested to determine whether the data that has been obtained is normally distributed or not, and to determine the next type of data analysis.

Table 1. The results of the *pretest* and *posttest* data normality test

Data	Classes			Criteria
Pretest	Control	6.30	11.07	Normal distribution
	Experimental	6.14	11.07	Normal distribution
Posttest	Control	4.49	11.07	Normal distribution
	Experimental	9.52	11.07	Normal distribution

Based on the table 3 of experimental and control classes show the normal distribution data, this is indicated by the results . The normality test data that has been obtained need to be further tested using *T* dan *N-gain* tests. *N-gain score* aims to determine the effect of using a particular model or treatment in research by calculating the difference to determine its effect..

Table 2. N-gain testing of control and experimental class

Class	$\sum$ Pretest	$\sum$ Posttest	Gain	Criteria
Control	69	73	0,11	Low
Experimental	71	81	0,34	Medium

In order to see the differences in students' cognitive learning outcomes between the experimental and control class, we can make comparisons between score of with score of , Ho refusal criteria, if .

Based on table 2, the *N-gain* test data for students' cognitive learning outcomes was obtained a gain score of 0.34 for the experimental

class and 0.11 for the control class. Based on these data, it can be concluded that the application of the *make a match* model assisted by the *question answer card* on the excretion system material on the cognitive learning outcomes of students in the experimental class resulted in a significant increase in cognitive learning outcomes compared to the control class using the *discovery learning* model.

Table 3. Testing t data of *pretest* dan *posttest*

Class	Variant			Explanation
Control	63.414	4.4945	1.9990	Significant Differences
Experimental	51.0323			

Based on table 3, the different test data for the cognitive learning outcomes of students in the experimental and control classes have the results of calculating the score analysis 4,4459 and 1,9990, the significance level is 5% and *dk* = n-2 with 62 *dk* score. Based on data so H_o is refused, there is a significant difference between experiment and control class. Experiment class shows that the cognitive learning outcome is higher than control class.

Data collection of student's learning motivation using a questionnaire sheet consisting of 8 indicators which is studied, include the following: (1) persistence in dealing with assignments, students can work continuously for a long time and do not stop before finish in working., (2) persevere in facing difficulties (not easy to give up)., (3) show interest in various problems that occur in everyday life., (4) prefer to work independently., (5) quickly get bored of tasks that are routine or relatively same., (6) can defend their opinions., (7) it is not easy to let go of what is already believed., (8) happy to find and solve problems which is contained in practice questions (Sardiman 2012:83). The results of the learning motivation questionnaire sheet in this study can be said to be complete if the percentage of indicators is obtained can reach sufficient criteria. The results are obtained based on the analysis are classically the students completed with good categories, 76% in the experimental class and 67% in sufficient categories in the control class.

Analysis of questionnaire sheets data by testing the data normality of questionnaire sheets. Normality testing is used to know whether the data is normal sitribution or not, so as to determine the next analysis. The questionnaire normality test can be seen in Table 4.

Table 4. Normality Test of Learning Motivation Questionnaire

Data	Classes	χ^2_{count}	χ^2_{table}	Criteria
Pretest	Control	2.42	11.07	Normal Distribution
	Experimental	4.93	11.97	Normal Distribution
Post-test	Control	4.30	11.07	Normal Distribution
	Experimental	8.96	11.07	Normal Distribution

The questionnaire will be given twice in the first and last meeting. Based on the questionnaire results recapitulation at the beginning and at the end of the meeting, we can see the results in the experimental class in table 5.

Table 5. Questionnaire data of the beginning and the last meeting

CLASS	Criteria			
	Very Good	Good	Fair	Poor
Pre Experiment Class	6.25%	37.50%	43.75%	12.50%
Post Experiment Class	25.00%	53.13%	18.75%	3.13%

Based on the results of the study, it was divided into 4 categories, there are very good, good, fair, and poor. The initial data on the questionnaire that had been filled in the students before the treatment was given, it was found that the experimental class had low learning motivation. It can be seen from the experimental class data where 14 of the 32 students (43.75%) were in the sufficient category and 4 out of 32 students (12.50%) were in the poor category, while in good category only 12 out of 32 students (37.50%) were in good category and only 2 out of 32 students (6.25%) were in very good category. Based on the experimental class data, it can be concluded that the student's learning motivation is in the range of the category fair or poor, then the questionnaire will be given back after the treatment is given.

Based on the questionnaire final data that the students had filled after the treatment was given, the results were significant differences in the experimental class. It can be seen from experimental class data which the beginning data are 14 from 32 students or (43.75%) they were in fair categories, there was a significant decrease to only 6 students from 32 students (18.75%) after being given treatment. In poor category, which was initially 4 out of 32 students (12.50%), there was a significant decrease to only 1 student out of 32 students (3.13%) after treatment. Good category increased from 37.50% (12 students from 32 students) to 53.13% (17 students from 32 students) after treatment. Very good category also showed a significant increase from only 6.25% (2 students from 32 students) to 25% (8 students out of 32 students) after being given treatment.

Based on the experimental class data, it can be concluded that students' learning motivation has increased after treatment. These are the results of the average percentage of the learning motivation questionnaire for each indicator which can be seen in table 6.

Table 6. The Average Percentage of Learning Motvation Questionnaire Each Indicator

Indicator	Eksperimental Classes		Control Classes	
	Results (%)	Criteria	Results (%)	Criteria
Persistence in dealing with assignments	75	Good	68	Fair
Persevere in facing difficulties	76	Good	68	Fair
Show interest in various problems	76	Good	67	Fair
Prefer to work independently	75	Good	67	Fair
Quickly get bored of routine tasks	74	Good	66	Fair
Defend their opinions	76	Good	67	Fair
Not easy to let go of what is already believed	75	Good	67	Fair
Happy to find and solve problems	74	Good	67	Fair

Then, the data above is analyzed by using parametric analysis. An analysis which is used on the questionnaire results data was difference testing. The difference test between control class and experimental class was using one-sided t test, namely the right side. One-side t test can be seen on table 7.

Table 7. T test of class questionnair sheets data on experimental and control class

Class	Variant	t_{count}	t_{table}	Explanation
Control	67.1875	3.44879	1.9989	Significant Differences
Experimental	75.1875			

Difference test results with a significant level 5% and dk = n-2 with score dk 62 earned value t_{count} in the amount of 3.44879 while t_{table} in amount of 1.9989. Based on its data $t_{count} > t_{table}$ so that 13 is refused, it means that there is significant differences in students' learning motivation between experimental class and control class. Based on the data above, it can be concluded that the application of *make a match* model assisted by *question answer card* affect on students' learning motivation, this is proven by the significant difference between control and experimental class.

The Effect of *Question Answer Card* Assisted by *Make a Match* Model on Students' Cognitive Outcomes

The effect of this research is that there is a significant increase in the experimental class and the assessment results obtained by the students on experimental class are better than control class. There is a significant difference in the average score in the results of learning motivation as indicated by the questionnaire scores and student cognitive learning outcomes as indicated by the test scores in the experimental class and the control class. The effect of *make a match* model aided with *question answer card* on students' cognitive learning results from the *pretest* dan *posttest* data which is arranged based on indicator of cognitive learning results on Bloom Taxonomy. There is some differences that occur based on *posttest* results in experimental and control class, the average score from experimental class (81,25) is higher than control class (72,75). The different treatment which was given on learning process can affect students' cognitive results. It can be seen from the use of models in experimental class, that is *make a match* model assisted by the *question answer card*, while control class uses the *discovery learning* model.

Based on the data from the *pretest* and *posttest* results, an analysis was carried out and the percentage of students' cognitive learning outcomes in the experimental class increased quite significantly, while in the control class it increased but the increase was smaller (from 40% to 50%) compared with experimental class (from 50% to 78%). The learning outcomes obtained by students have several influencing factors. Ac-

cording to Amri (2013:25), stated that there are two factors that affect learning outcomes, internal and external factor. Internal factors which is examined in this study were student learning motivation and students' intellectual abilities, namely the ability in the cognitive domain of student learning outcomes. External factors which is examined in this study were the use of *make a match* model assisted by the *question answer card*.

Experimental class had the average pretest amount 70,63 and in control class was 68,75. The *pretest* results show that the students' cognitive abilities to the excretion system material are relatively same. The data from *posttest* results in the experimental class and the control class show that there is a significant difference in the average *posttest* between the experimental class and *make a match* learning model assisted by *the question answer card* and the control class with the *discovery learning* model. In the experimental class, the posttest average was 81.25 and in the control class the posttest average was 72.75. *Pretest* and *posttest* data in experimental class was done through normality test analysis. Based on table 4.3 the control and experimental class, it is found that $_{count} \geq {}_{table}$ so H_a is accepted. This shows that the data normally distributed, so that the data can be carried out by the *N-Gain* test and the *t test*.

The analysis can affect or not on *make a match* model assisted by *question answer card* on excretion system material on the cognitive results of students shows positive results where the *N-Gain* value obtained is 0.34 with moderate criteria. Hypothesis testing also shows positive results, with the result that the application of *make a match* model assisted by the *question answer card* is a difference in the cognitive learning outcomes of students in the control and the experimental class with $t_{count} > t_{table}$ (4,445 > 1,9990). The difference in the average learning outcomes between the experimental class and the control class is influenced by the different learning model factors between both, because in the experimental class students are required to be more active in carrying out learning combined with play, while in the control class students only work the discussion sheet provided by the teacher. *Make a match* model is a learning model in which there is more game. This model can improve students' ability to think, collaborate, and express their opinions. *Make a match* model is more effective for improving students ability in remembering and understanding. This model requires students not only to memorize / remember the material being studied, but students also have to understand the material in order to match / find pairs of the

cards obtained. The application of *make a match* model in learning can (1) improve students' learning activity., (2) make the students more relax in learning process., (3) Improve students' understanding about the material., (4) increase students' motivation learning., (5) train the courage of students in present the material. The lack of *make a match* model is that at the beginning there are students who are embarrassed to pair up with the different gender.

The use of media in learning aims to make it easier for students to understand a concept which is being learned. This opinion is same with Sudjana and Ahmad (2017: 2), the use of media in learning can facilitate understanding of material, foster learning motivation, and encourage students to be active in learning activities. One of learning media that can support *make a match* model is *question answer card*. *Question answer card* (QAC) contains questions ans anwers. *Question answer card* is used when the discussion was done. The effect from this *question answer card* in this study is showed by increasing students' ability to understand the material. Also there is the difference in cognitive learning outcomes between control and experimental class after the treatment was given. Students' learning motivation can increase, it appear from students activity. Students enthusiastically participate in make a match (looking for pairs of cards), where students look for the correct card pairs and argue in front of the class about the cards they got.

The Effect of *Make A Match* Model Asssisted by *Question Answer Card* on Students' Learning Motivations

The results of student learning motivation can be analyzed from the results of the learning motivation questionnaire that the students fill in during a series of lessons. Based on table 9, it shows that there are differences in results in the experimental class and the control class. In the process of learning the *make a match* model assisted by *question answer cards* in the experimental class students are asked to learn and play, so that students are motivated to follow each learning process. Motivation that comes from within students will direct and encourage students to learn.

Persevere in facing assignments, students have a belief from themselves that success will be determined by their own abilities and efforts. This indicator has a percentage in the experimental class of 75% are in good category and in the control class by 68% are in fair category.

Resilience in facing difficulties can be observed when students carry out discussions and

solve existing problems, also remain persistent in solving it. Based on the questionnaire data on learning motivation, it was found that the experimental class had a percentage of 76% in the good category and 68% in the control class in the fair category.

Students who have an interest in problems and have great curiosity, they will actively looking for information. The percentage of questionnaire data results states that the results of the experimental class are 76% and the control class results are 67%.

Working independently is related to student confidence in the learning process, students will always confident to understand the material well. Motivation that comes from within students will encourage them learning. This indicator has good criteria in the experimental class amount 75% and the control class amount 67% with sufficient criteria.

In the learning process according to the 2013 revised curriculum, it involves students taking an active role in the learning process, students play a role in finding their own concepts. The learning process in the classroom mostly uses the discussion method. The students have routine assignment to discuss a problem, so that students are required not to get bored quickly with existing routine assignments. Based on the questionnaire analysis data, the percentage of results obtained was 74% in the experimental class, while in the control class was 66%.

Achievement indicators can defend their opinions, based on students are able to defend their opinions during discussion. Based on questionnaire motivation data, the percentage on control class amount 67% and in experimental class amount 76%.

The success of the indicators is not easy to let go of what is believed, it is based on the ability of students to defend answers during discussions or games *make a match* assisted by *question answer card*. Based on the motivation questionnaire data, the percentage of the experimental class was 75% and the control class was 67%. The success of the indicators of being fun to find and solve problems can be seen in the learning that students are focused and enthusiastic about participating in science learning. Based on the motivation questionnaire data, the percentage of the experimental class was 74% and the control class was 67%.

There were significant differences on the results of students' motivation questionnaire between experimental class (76%) in learning model *make a match* assisted by *question answer card* with control class (67%) in *discovery learning* model.

The experimental class has higher motivation with an average percentage of 76% compared to the control class's average motivation of 67%. The results of the grouping of learning motivation were poor, fair, good, and very good from the experimental class which increased significantly after the treatment was given. This can be seen in table 6.

CONCLUSION

According to results of this study "The Effect of *Make A Match* Model Aided with *Question Answer Cards* on the Excretion System Material on Student Motivation and Cognitive Learning Outcomes" which was done can be concluded that *make a match* model assisted by *question answer card* on excretion system material affected to students' cognitive learning outcomes with score 4,4945 > 1,9990. *Make a match* model assisted by *question answer card* on excretion system material affected to students' learning motivation with score 3,44879 > 1,9989.

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