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The Influence of the Internet-Based Group Investigation Model on Students of Madrasah Ibtidaiyah Teacher Education

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ABSTRACT

Students' creative thinking skill is an important ability that must be expanded in Natural Science learning process. The pandemic reality shows that being able to integrate with technology has big role in the success of learning. This study aims to determine the influence of implementing internet-based group investigation model on students' interest. This was one shot case study design involving PGMI Sunan Kalijaga State Islamic University students of grade VIA and VIB taking Natural Science subject. Descriptive and inferential analysis were adopted in this study. The data was collected through a questionnaire to determine students' interest during the teaching and learning process.

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1. INTRODUCTION

Education implemented in Indonesia through national curriculum expects that every teacher is able to use technology in the learning process. Education is an important aspect that must be developed in other aspects. The development of science and technology can be used as concrete evidence of quality education(Widiawati et al., 2018). Education is able to build human intellectuals as the progress factor of a country(Islamic, 2019). Education occurs when there is a process of transfering the knowledge. The role of educational actors should have the competence to foster enthusiasm and interest in the process of carrying out educational activities. The role of learning interest has a big influence on learning outcomes, because learning interest directly affects students' learning outcomes(Berutu & Tambunan, 2018). Higher intensity of learning interest will have an impact on good learning outcomes and students' learning achievement optimally(Rozikin et al., 2018). Related to cognitive aspects, affective and psychomotor aspects are also influenced by students' learning interest, such as emotional intelligence. Students with the ability to control their emotions wisely in the learning process is a reflection of students' high interest in learning(Princess et al., 2017). The high interest in learning will maintain the learners' memory while participating the learning activities.

Natural Science learning is an important subject aimed to provide a stimulus to students to memorize, remember, and understand the material in long term. The expected and challenges in the future requires students to be able to foster motivation, innovation, and skilled creativity to be able to master Natural Science in general(Haryanti & Suwarma, 2018). Learning innovation can be done through various on the use of methods, media and models to assist teachers in creatively conveying learning material to students. The main attention are encouraged the students to be able to participate actively in learning activities by applying the various of the models, methods, and approaches provided(Lestari, 2017). The appropriate learning model will create a conducive and focused learning atmosphere. However, a different situation occurred in the field, especially for classes A and B for the sixth semester students of the Madrasah Ibtidaiyah Teacher Education study program at Sunan Kalijaga State Islamic University in Natural Science subject. A unique characteristic from one student to others is their awareness during learning process. This is felt different and unique because not all students show good participation in learning process and finally the lecturers follow the demands of the students. In other words, the lecturers do not have any authority and firmness in acting. This kind of learning rhythm occurs during online learning due to the impact of the Covid-19 outbreak.

This problem is supported by evidence showing that the most students often turned off the camera during lectures, some students did not attend the classes based on the provided schedule, some students did not respond the teachers in the discussion session, students appointed by the lecturer spontaneously were mostly unable to answer questions, the groups presentations were limited to conveying the contents without any development, and the submission of group assignments was late. Therefore, those problems can be seen as indicator of boredom of students when attending lecturing class. Of course, this is influenced by the learning method which is relatively boring. For examples, the teachers asked the students to listen and take notes, the teacher asked the group discussion to find a solution on the basis of possibilities without giving any analysis or reinforcement from each group, the teachers limited the topic discussion without giving any freedom to the students, and the teacher gave unrelated topic to the students making the students did not interest. In some cases, the topic of discussion has also been determined. Therefore, the students are limited in conveying their thoughts.

The authors provide an alternative solution to overcome those problems by applying the internet-based group investigation model which is able to increase students' enthusiasm for learning, help students' activity, and develop students' mindset realistically. Internet-based group investigation model is discovered by students in groups to carry out a job actively, which allows the discovery of a principle (Slavin inIswardati, 2016). Internet-based group investigation model is appropriate for use in application of teaching speaking, therefore the students become more confident and have more freedom in learning related to aspects of speaking skills(Asrarul, 2016). In line with research from(Argawati, 2014) that the increase in students' speaking skills quantitatively and qualitatively experienced an increasing scale. Likewise subsequent research, through the application of vocational high school students who have better learning achievement using group investigation is able to optimize students' achievement(Sangadji, 2016). Students who are in groups to complete an investigation need to be assisted with information supporting facilities in the form of internet. The use of the internet in group investigation learning is carried out in the third stage, namely the investigation stage. In practice, students will be asked to analyze journals to find problems as well as carry out continuing investigations in literature using the help of the internet with the aim of knowing the appropriateness solutions presented in the journals.

The up to date and familiar topic of the problem, group investigation becomes a novelty in research, because each group member is given directions to discuss with their respective task points. The task of each member consists of analyzing, interpreting, recommending, and evaluating the problem. This is considered as an important aspect because students will be moved to conduct internet-based investigations. Therefore, many new questions arise to be included in the form of student ideas. In addition, related to life encountered or based on personal experience, it becomes a better material after getting suggestions or comments from others student. In line with this, research conducted

by(Wahyuni, 2014) shows that the implementation of group investigation is able to increase students' interest and learning outcomes and help students to apply their knowledge in their lives. Therefore, the discussion activities can trigger challenging opinions in defending each other's assumptions. Group investigation provides opportunities for students to be active in learning with their friends with the help of the teacher as a facilitator and motivator. This activity has an impact on increasing students' learning outcomes(Aditya, 2016). Furthermore, through various collected ideas, more quality ideas can be developed to be recommended as problem solving. In conducting an investigation, students are required to find accurate sources to support the substance of the problem(Sai, 2017). It is expected to be able to be evaluated for differences between the thoughts given from journals and group discussion thoughts as a form of students' interest and support. The gap in the use of a different internet-based group investigation model is usually in a simple case, then the author tries to provide another treatment involving the internet to facilitate access as investigations. Therefore, it is necessary to find a significant influence on the learning interest of PGMI Sunan Kalijaga State Islamic University students.

2. METHOD

This study employed a quantitative descriptive method. The method used in this study was considered appropriate because it was conducted to collect factual information through questionnaires. In the beginning of the study, the researcher measured the students' initial abilities in the form of a pretest to determine the extent of student knowledge about Ecosystem. Furthermore, the researchers made observations on the learning process by conveying material about Ecosystems. At the end of the activity, a post-test was conducted to determine the understanding about Ecosystem. The population in this study amounted to 44 students. Sampling of the population used was cluster sampling technique. The consideration of taking the sample was because there were two classes, namely A and B. Students who were in class A and B were considered homogeneous. Another instrument adopted was rating scale model questionnaire. The questionnaire was conducted to measure respondents' perceptions of interest in learning as measured by indicators of interest, attention, motivation and knowledge of the learning process.

The data was collected by spreading those questionnaires to research subjects and developed through quantitative descriptive method. The questionnaire of research consisted of 20 statements. Each statement was given 4 options, where the highest score was 4 and the lowest score was 1. The scores obtained by each research sample were interpreted with the provisions as shown in Table 1.

Table 1. Learning Interest Category(Harefa et al., 2020)

Score	Interpretation of Learning Interests
$20 \leq x \leq 36$	Not interested
$37 \leq x \leq 52$	Less Interested
$53 \leq x \leq 68$	Interested enough
69 x 84	Interested
$85 \leq x \leq 100$	Very interest

This research data was collected by all respondents after being implemented the internet-based group investigation model, then compared before implementing the model. The data was processed and interpreted based on Table 1 (category of learning interest) and analyzed and concluded.

Data on pretest and posttest scores with a total of 20 multiple choice questions. The overall data for each student was then categorized according to the value category with a scale of 100 on the basis of the opinion of Eko Putro Widoyoko (2009) as shown in Table 2.

Table 2. Students Grade Category

Percentage Interval	Criteria
> 80	Excellent
> 60 – 80	Good
> 40 – 60	Enough
>20 – 40	Less
< 20	Poor

Source: Eko Putro Widoyoko (2009)

The data pretest was aimed to determine students' ability about Ecosystem before treatment was carried out. After the students were implemented the treatment, they were remeasured by using posttest to identify the significant difference or difference between the two. The results were divided into 5 categories, namely excellent, good, enough, less, and poor.

3. FINDINGS AND DISCUSSION

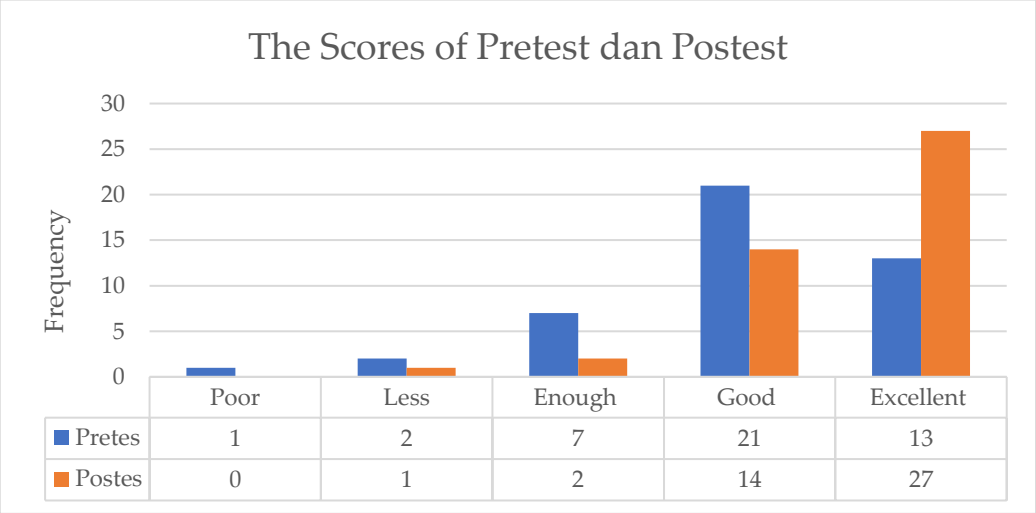
This study was conducted to determine the effect of PGMI students' interest in learning Natural Sciences subject in grades VIA and VIB. This study employed an internet-based group investigation model. Based on the research results, it is found that the results of pre-test and post-test scores using the group investigation model show in Table 3.

Table 3. Frequency of Results of Pretest and Posttest Scores

	Poor	Less	Enough	Good	Excellent
Pretest	1	2	7	21	13
Postest	0	1	2	14	27

Based on the pretest results of Table 3, it is known that there is 1 student who is included in the poor category, 2 students who are in the less category, 7 students who are in the enough category, and as many as 21 students who are in the good category, 13 students who are included in the excellent category. Furthermore, in the post-test results, there are 27 students who are in the excellent category, there are 14 students who are in the good category, there are 2 students who are in the enough category, and there is 1 student who is included in the less category, while there is no student in the very poor category.

The following Figure 1 is a chart to help the reader easier and clearer in understanding the data of students' pre-test and post-test scores.



Graph 1. Frequency of Students Pretest and Posttest Scores

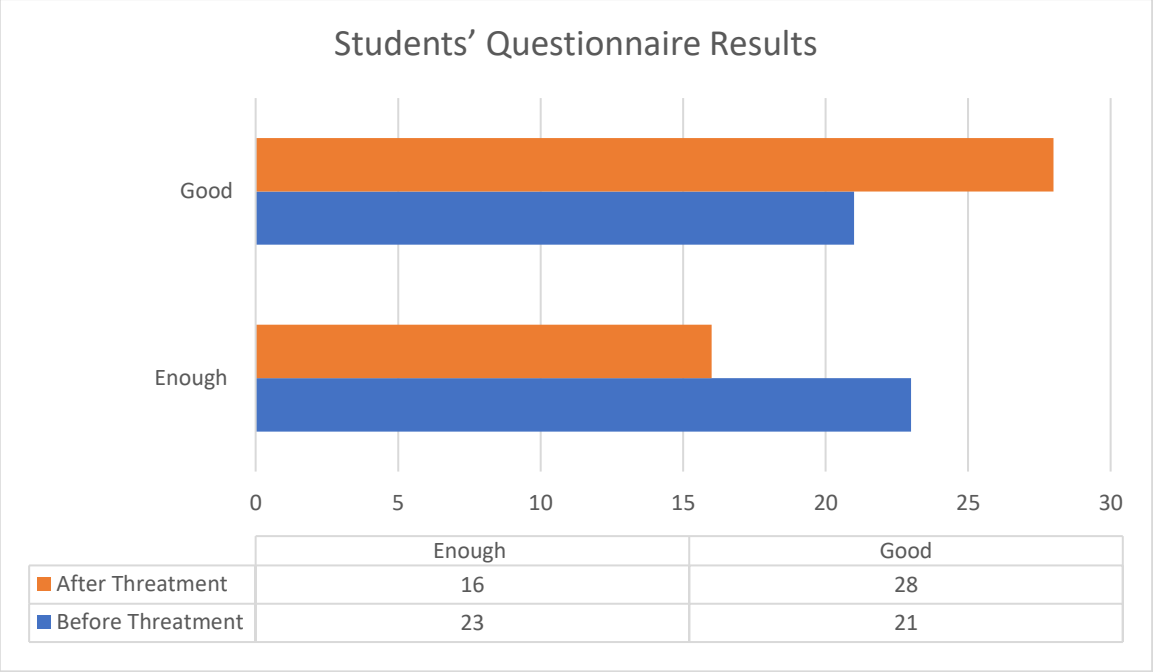
The graph 1 shows the difference results between the pretest and posttest of students. It is known that the students' pretest results tend not to increase, but the students' posttest results increase significantly.

The results of students' questionnaires on the treatment responses carried out using the group investigation model are shown in the Table 4. There are five categories used to measure students' responses on a scale of 100, including very interested, interested, interested enough, less interested, not interested.

Table 4. Results of Students Questionnaire on Model Group Investigation

	Interested enough	Interested
Before Treatment	**23**	**21**
After Treatment	**16**	**28**

Based on table 4, it is found that there are only two categories, namely the sufficient category and the interested category. In the condition before the treatment, it is known that there are 23 students who are interested enough in conventional learning. There are 21 students are interested in the learning without treatment. Furthermore, after using the group investigation model, there are 16 students who are quite interested in participating the learning using treatment. There are 28 students who are interested in participating the learning with treatment using the group investigation model. Students questionnaire results before and after treatment using the group investigation model are displayed in the Graph 2.



Graph 2. Students' Questionnaire Results before and after Treatment Using the Group Investigation Model

It can be seen in graph 2 that after giving the treatment through internet-based group investigation model, it increases from interested enough to interested with the difference is 12 students. Table 5 describes the form of the percentage of interest in learning before treatment.

Table 5. Results Percentage of Learning Interest before Treatment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Interested enough	23	52.3	52.3	52.3
	Interested	21	47.7	47.7	100.0
	Total	44	100.0	100.0	

Based on the results in Table 5, it obtains information illustrating the condition of students before treatment consisting of five categories based on the theory (Harefa et al., 2020) and divided into two types namely interested enough and interested. The number of students who are interested enough are 23 students, while students who are interested are 21 of 44 students. There are 52.3% of students who are interested enough in participating the learning activities with monotonous learning models. In other hand, there are students who are interested (47.7%) in participating in teaching and learning activities during online system. According to (Gumanti & Teza, 2021), it is stated that the decreased interest during online class is due to a boring point of the students. Lecturing system that used to be done face-to-face changed into learn from home. Therefore, it is necessary to have an additional variety of learning models to attract the students become more enthusiastic in attending class.

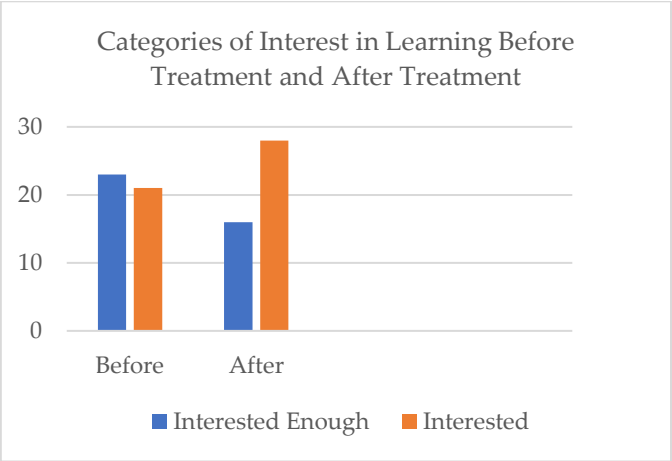
Based on the results listed in table 5, it requires different treatment of the students. By implementing the treatment, it is expected to be able to increase willingness and interest in the form of students' self-change by seeking experience and knowledge during learning process. This is evidenced by the results of the percentage of students' interest in learning after being treated with internet-based group investigation model.

Table 6. Percentage Results of Learning Interest after Treatment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Interested enough	16	36.4	36.4	36.4
	Interested	28	63.6	63.6	100.0
	Total	44	100.0	100.0	

Based on the data from Table 6, students respondents from Sunan Kalijaga State Islamic University get the benefits after participating the learning through different model. Students who previously chose to turn off the camera are more likely to try to turn on the camera. Another difference can also be seen from the active interest of students during discussion in learning process. Some students share experiences and additional knowledge concerned with their daily lives. Students participate by attending lecturing classes punctually and mannerly. This is shown through the results of 28 students who are interested in participating learning with the internet-based group investigation model. In line with the theory of (Huda, 2011), it is explained that the group investigation model developed by Sharan and Sharan (1976) emphasizes more on students' choice and control than teaching techniques. There is full freedom given to students in planning, conducting investigations or investigating something that is to be learned in small groups. The results reach 63.6% of students who are interested in the category of students who choose to do learning using the internet-based group investigation model. In other hand, there are 36.4% (interested enough) of students who choose to be treated differently.

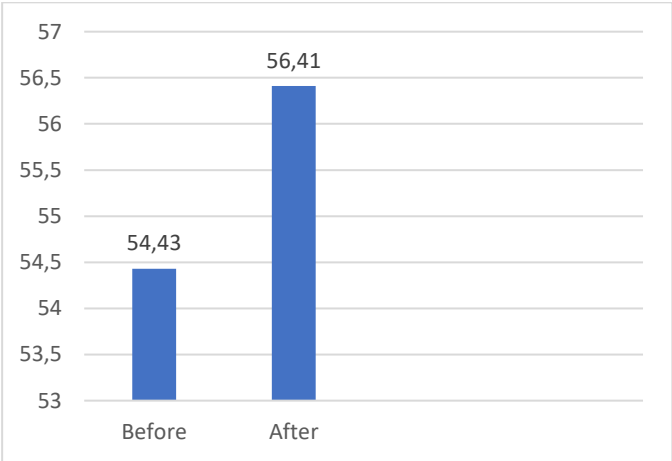
The gap results of applying the internet-based group investigation model to student learning interest shows a significant difference. The contrast is quite different indicating that there is an influence in the conducted research. The effect that occurs is analyzed through the results of the respondents' questionnaire shown in graph 1 below.



Graphics 3. Categories of Interest in Learning before and after Treatment

Based on graph 3, there are 23 students before the treatment for the interested enough category. Then, it decreases into 16 students after treatment. In another word, there is a decrease in the number of students' interest in participating the learning. Previously, there are 21 students are interested, it rises to 28 students. It shows that the students prefer to use the internet-based group investigation model because it is able to attract students' attention. According to the theory (Andiny Nur, Haryono, 2014), it is explained that group investigation is able to create a learning atmosphere that attracts students' interest and able to increase cooperation between students in the class to encourage them to have motivation and interest in learning. Collaboration is built by students is the main attraction for each ideas and thoughts or ideas in a group.

The results of the respondents' questionnaire experienced an increasing change from before to after treatment. Some students are more interested in participating the online learning. However, online learning will be boring if the lecturers do not use an effective model. The case with learning involves students playing a full role during learning. This is able to activate students' interest with the average results shown in graph 2 below.



Graphic 4. Average Interest in Learning before and after Treatment

Graph 4 provides information about the average results of the research that before and after treatment. Students before treatment show an average result of 54.43% (interested in participating the learning activities). There is an increase to 56.41% after treatment through an internet-based group investigation model. Students tend to be more interested in rounding up to about 2% higher to attend lecturing after the treatment. Students get a supportive atmosphere to hone their cognitive abilities, can

also get direct experience to get meaningful learning(Andiny Nur, Haryono, 2014). Meaningful learning is very beneficial for students to improve achievement and student learning outcomes.

The relationship that occurs between students and lecturers is a process of distributing information. Good communication is expected for both parties, therefore communication goals are conveyed clearly and precisely. An internet-based group investigation model is conducted to create interactive learning. It can be seen that the correlation between students' interest in learning before and after treatment is clearly different. It is shown in the T test Table 7 below.

Table 7. Test Results Sample T Test

		Paired Differences					t	df	Sig. (2-tailed)
		Means	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Interest in Learning Before Treatment - After Treatment	-1,977	4,278	.645	-3.278	-.677	-3.066	43	.004

Based on table 7, students' learning interest in Natural Science deepening courses before implementing internet-based group investigation model has a significance level of 0.004 assuming a significance value below alpha which is worth 0.05. It clearly shows the difference between the two conditions that differentiate between students' interest in learning before and after treatment. The significance level value is 0.004 <0.05, so it can be concluded that there is a significant difference between the conditions of students' interest in learning before and after treatment. In line with the theory of (Sagoro, 2014), it is stated that the Paired Sample T Test is a partial test with a significance level or alpha value of 0.05 or 5%. If the treatment has no effect, the average measurement value is equal to or considered zero (Ho), which means that the alternative hypothesis is supported (Ha) is accepted. In this study, the result shows the average measurement value of 0.004. Therefore, Ho is accepted while Ha is rejected. In conclusion, implementing treatment has influence on research.

4. CONCLUSION

The application of internet-based group investigation model in this study is proven to be able to increase students' interest in participating online lecturing. The results show that there is a significant difference between interest in learning before and after treatment. It is clear that the difference between the two conditions distinguishes between students' interest in learning before and after treatment. The value of the significance level of 0.004 <0.05, which can be concluded that there is a significant difference between students' interest in learning before and after treatment.

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