



The Influence of Assignment Methods and Learning Behavior on Student Learning Outcomes

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Abstract

This study aims to determine: (1) Differences in science learning outcomes for students who are given assignments individually and students who are given assignments in groups, (2) The effect of the interaction between the assignment method and student learning behavior on science learning outcomes, (3) Differences in results learning science between students who are given assignments individually and students who are given assignments in groups, for students who behave introverted, (4) Differences in science learning outcomes between students who are given assignments individually and students who are given assignments in groups, for students who behave extroverted. This research was conducted at SDN 1 Bone Raya using the 2 x 2 factorial design method. The results showed that: (1) there were differences in science learning outcomes for students who were assigned individual assignments and students who were assigned group assignments. This can be seen from the average score of Science Learning Outcomes, where $XA1 = 17.50$ is higher than $XA2 = 15.33$, (2) there is an interaction effect between the assignment method and learning behavior on science learning outcomes, (3) there are differences in learning outcomes. Science between students who were given assignments individually and students who were given assignments in groups for students who behaved introverted, as seen from the average score of science learning outcomes, where $XA1B1 = 21.73$ was greater than $XA2B1 = 13$.

Introduction

The success of education in schools will determine the future of a region or nation in the future. If education in an area or nation is good, it will produce generations who are smart, skilled and of course have readiness in developing science and technology in supporting the development of the region or nation. Therefore, the teaching and learning process at school or in the classroom must continue to be improved so that the quality of education continues to improve, in accordance with the development of science and technology today which is increasingly advanced.

In this regard, the government is always trying to improve the quality of education through various efforts such as the procurement of educational facilities and infrastructure, preparing adequate teaching staff in terms of quality and quantity, improving the curriculum used, and others. At the school level, teachers are required to create interesting and challenging learning through the selection of appropriate learning methods and models, so that students are happy and excited to learn. With this effort, students are expected to maximize the potential that exists in themselves in learning so as to obtain good learning outcomes.

The difference between introvert and extrovert personality types may have an impact on students' study habits. There are student study habits that are classified as good and not good. Related to study habits, Mulyoputro (in Putri and Gusniarti, 2006) explains that good study habits will have a positive impact or result for students, such as making a schedule of activities by students which are carried out and accounted for by students themselves. With this activity schedule, students must be able to divide their study time so they can repeat lessons so they don't forget easily and as preparation for school the next day.

One way that teachers can do to overcome these problems is to give more assignments to students during or outside of learning. The tasks given can be in the form of making summaries, doing tests, practice questions, or self-made questions. By doing the task, students basically repeat the material they have learned. Repeating has a big influence on learning, because with this repetition, the material which not yet mastered and easily forgotten, will remain embedded in one's brain. In addition, Faturrohman & Sutikno (2007) explain that the given task will stimulate students to actively study either individually or in groups. Thus, it is hoped that their learning outcomes will be better.

Learning Outcomes

Learning is one of the factors that influence and play an important role in personal formation and individual behavior. Sukmadinata (in Sudrajad, 2008) states that the majority of individual development takes place through learning activities.

Thorndike (in Uno, 2011) suggests that learning is a process of interaction between a stimulus (which may be a thought, feeling, or movement) and a response (which can also be a thought, feeling or movement). In line with this opinion, Sumiati (2013) defines learning in general as a process of changing behavior, due to the interaction of individuals with their environment. So behavior change is the result of learning.

With regard to learning outcomes, according to Gagne in Sumarno et al. (2021) learning outcomes are internal abilities which includes knowledge, skills and attitudes that have become someone's personal property and enable someone to do something. Almost the same opinion was expressed by Jenkins and Unwin (Uno, 2011) who said that learning outcomes are statements that show what students might do as a result of their learning activities. Sudjana (1987) says that if good learning quality is achieved, good learning outcomes will also be achieved. Understanding learning outcomes in this case are the abilities students have after they carry out their learning experiences. Bloom (in Sudjana, 1987), divides three domains of learning outcomes, namely: (1) the cognitive domain, (2) the affective domain, and (3) the psychomotor domain.

Based on the description above, it can be concluded that learning outcomes are the abilities possessed by students after they carry out their learning activities which are measured using tests.

Assignment

According to Fathurrohman & Surtikno (2007), giving assignments or assignments is not the same as the term homework, but is broader. Assignments are carried out at school, at home, in the library and elsewhere. The assignment method is given to stimulate active children to learn either individually or in groups.

Djamarah & Aswan (2006) state that assignment is a presentation method in which the teacher gives certain tasks so that students do learning activities. The teacher gives it to students in the

hope that students want to learn. The more often students are given assignments and the more often students learn, the learning outcomes will increase.

Giving assignments according to Wiryana (in Rizal, 2010: 58) is a way of teaching that is done by the teacher by asking students to do something outside of class hours. Giving this assignment aims so that students have better learning outcomes, because by doing the exercises or assignments given will add to the student's experience in learning something and can be more integrated with other subject matter.

According to Djamarah & Aswan (2006) explain that the steps that must be followed in using the task method include (1) the assignment phase, which must consider several things, including (a) the objectives to be achieved, (b) the type of clear and precise tasks so that the child understands what is assigned, (c) according to the child's ability, (d) there are instructions or sources that can help the student's work, (e) provide sufficient time to do the task. (2) steps for carrying out the task, which must pay attention to things including (a) providing guidance and supervision, (b) providing encouragement so that students want to work, (c) directing students to do their own work, (d) recommending that students take notes. the results obtained are good and systematic,

In addition to the above opinion, Mulyasa (2007) argues that in order for the assignment method to take place effectively, the teacher needs to pay attention to the following steps: (1) the task must be planned clearly and systematically, especially the purpose of the assignment and how to do it, (2) the task given must be understood by students, because it will be able to determine the effectiveness of the use of the assignment method in learning, (3) if the task is in the form of a group assignment, it is necessary to strive so that all group members can be actively involved in completing the task, especially if the task is done outside class, (4) it is necessary for the teacher to control the process of completing the tasks carried out by students, and (5) provide a proportional assessment of the tasks carried out by students.

In order for the given task to have a good effect on students, the teacher must provide regular direction and guidance to students, especially for students who are slow learners, teachers must provide more time and intensive guidance. Kasmadi (in Masrurroh, 2006) explains that the objectives of giving assignments to students include (1) training and skills, as well as to increase learning speed and learning accuracy, (2) reading, responding, and summarizing what is learned, (3) encourage students to be responsible for the lesson, and (4) develop independent learning.

Based on the description above, assignment is a presentation method in which the teacher gives certain tasks so that students carry out learning activities either individually or in groups that aim to deepen students' knowledge of the material being studied.

Learning Behavior

Learning behavior is a learning habit that is carried out by individuals repeatedly so that it becomes automatic or takes place spontaneously. Learning behavior is not perceived as a burden, but as a necessity. Study habits are student learning behaviors that have been going on for a long time so that they give certain characteristics to their learning activities. Many students' learning behavior is not good so that it affects the decline in their learning outcomes. These bad behaviors include (1) irregular learning, (2) low learning endurance, (3) studying later before a test or exam, (4) not having complete notes, (5) often plagiarizing a friend's work or not believing it. themselves in doing assignments, (6) not making adequate summaries of the subject matter, (7) often coming late to school, (8) doing smoking activities (such as smoking). Eric Jensen on the Bio-psychologic learning behavior model.

According to Carl Gustaf Jung (in Surya Brata, 1998), human personality is divided into two types, namely introvert and extrovert type. The introvert type is mainly influenced by his subjective world, namely the world within himself. The extrovert type is mainly influenced by the objective world, namely the world outside of him. According to Eysenck (in Sari, 2017) the typical characteristics of people who have the introverted type are quiet, shy, introspective, likes to read, likes to be alone and keep a distance except with friends who are already familiar, tend to plan in advance, see first, before steps, and suspicious, dislikes excitement, takes daily life with seriousness, and likes a well-organized lifestyle, keeps his feelings private, rarely behaves aggressively, does not relieve his anger, trustworthy, and in some ways pessimistic. While extroverts are described as sociable individuals, like parties, have many friends, need friends to talk to, and do not like to read or study alone, crave excitement, take challenges, often oppose danger, behave without thinking first, and usually like to obey. In his heart, likes jokes, always ready to answer, and usually likes change, cheerful, not much consideration (easy going), optimistic, and likes to laugh and be happy, prefers to keep moving in doing activities, tends to be aggressive and He quickly loses his temper, his feelings are not kept under control, and he is not always trustworthy.

Based on the description above, it can be concluded that learning behavior is a study habit that is carried out by individuals repeatedly so that they become certain characteristics in their learning activities that tend to be introverted or extroverted

Methods

This research was conducted at SD Negeri 1 Bone Raya, Bone Bolango Regency. This research uses the experimental design method factorial ANOVA 2x2. The variable studied was the technique of giving feedback as a condition variable to cognitive style. Assignment (A) consists of individual assignments (A1) and group assignments (A2), while introverted learning behavior (B1) and extroverted learning behavior (B2). Data collection in this study used two types of instruments, namely tests and non-tests. The test instrument in this study was a student learning outcome test which was used to measure student learning outcomes after following the learning process. The non-test instrument in this study was in the form of a questionnaire or questionnaire. This questionnaire will be used to measure or determine student learning behavior in everyday life. The questionnaire contains statements related to student learning behavior. The analysis used includes descriptive analysis and inferential analysis. Descriptive analysis carried out to present data for each variable in statistical quantities such as the mean (mean), median (median), highest frequency (mode), standard deviation (standard deviation), and visualize it in the form of a frequency distribution table and histogram of the results. Learn science, while the inferential analysis is a test of analytical requirements and hypothesis testing in the form of: (1) data normality test, Liliefors test (Sudjana, 2005), variance homogeneity test, with Barlett test (Sudjana, 2005) and analysis of variance test (ANAVA) two paths to test the research hypotheses carried out by the Tuckey test.

Results and Discussion

In the following section, a description of the data on student learning outcomes in science subjects will be described. In this study, eight data groups were presented, namely (1) data on student learning outcomes who were taught using the individual assignment method (A1), (2) data on student learning outcomes who were taught using the group assignment method (A2), (3) data on learning outcomes of students who have introverted behavior (B1), (4) data on learning outcomes of students who have extroverted behavior (B2), (5) data on learning outcomes of students who have introverted behavior who are taught using the individual

assignment method (A1B1) , (6) data on student learning outcomes who have extroverted behavior who are taught using the individual assignment method (A1B2).

In general, the description of student learning outcomes in science subjects in the eight groups can be presented in Table 1.

Table 1. Description of Students' Science Learning Outcomes

Source Data	n	Min Score	Max Score	Mean	Mode (Mo)	Median (Me)	St. Dev(s)	Variance (s ²)
A1	30	5	28	17.50	15.50	17.00	5.61	31.43
A2	30	5	26	15.33	14.68	15.17	4.31	18.57
B1	30	5	28	17.40	17.83	17.50	5.68	32.32
B2	30	5	26	15.43	14.50	14.96	4.26	18.12
A1B1	15	14	28	21.73	21.75	22.20	3.65	13.35
A1B2	15	5	19	13.27	12.50	12.75	3.65	13.35
A2B1	15	5	19	13.00	12.50	12.60	3.59	12.86
A2B2	15	12	26	17.53	18.25	17.80	3.70	13.70

The results of calculations using the Liliefors test show that the eight data groups have a data normality level as presented in the following table:

Table 2. Normality Test Results of Science Learning Outcomes Data in each group

Group	N	Lo	Lt($\alpha=0.05$)	Conclusion
A1	30	0.0958	0.1519	Normal
A2	30	0.1054	0.1519	Normal
B1	30	0.0958	0.1519	Normal
B2	30	0.1157	0.1519	Normal
A1 B1	15	0.1126	0.1519	Normal
A2 B1	15	0.1000	0.1519	Normal
A1 B2	15	0.1199	0.1519	Normal
A2 B2	15	0.1991	0.1519	Normal

From the table above, it can be understood that the L0 of the eight groups is smaller than Lt (L0Lt), this means that H0 is accepted. Thus, it can be concluded that the samples from the eight groups above are from a normally distributed population.

This hypothesis was tested by using the 2-way Analysis of Variance technique (ANAVA 2 x 2), then further testing was carried out using the Tuckey test. Two-way analysis of variance is a calculation technique (parametric statistics) which aims to investigate two effects, namely the main effect and the interaction effect. The results of the 2-way ANOVA calculation can briefly be seen in the following table.

Table 3. Summary of ANOVA Calculation Results for Science Learning Outcomes

Source Variance	Number of Squares (JK)	dk	Average Square (RK)	Fcount	F _{table} (= 0.05)	F _{table} (= 0.01)
Between Columns	74.8167	1	74.8167	5.7154*	3.99	7.04
Between Lines	58.0167	1	58.0167	4.4320*	3.99	7.04
Column InteractionLine	633.7500	1	633.7500	48,4131**	3.99	7.04

Mistakes in Groups (d)	733.0667	56	13.0905	-	-	-
T total	1499.6500	59	779.6738	-	-	-

Description: * = significant on= 0.05

** = very significant on= 0.01

Based on the summary of ANOVA calculations above, it can be explained; (1) The results of the two-way analysis of variance between columns obtained the value of $F_{count} = 5.7154$. At the level of significance = 0.05, this value is greater than the value of $F_{table} = 3.99$. Thus, the alternative hypothesis (H1) which states that there are differences in the science learning outcomes of students who are taught by the method of giving assignments individually and in groups is accepted significantly; (2) The results of the two-way analysis of variance between lines obtained a value of $F_{count} = 4.4320$. At the level of significance = 0.05, this value is greater than the value of $F_{table} = 3.99$. Thus, the alternative hypothesis (H1) which states that there are differences in science learning outcomes of students who have introverted learning behavior and students who have extroverted learning behavior is accepted significantly. The results of the calculation of the further test with the Tuckey test for the two groups/subjects being compared are presented in the following table.

Table 4. Summary of the calculation results of the Tuckey test (= 0.05)

No	Group Ratio	Qcount	Qtable (0.05)	Conclusion
1.	A1B1 with A2B1	9.35	2.98	Significant
2.	A1B2 with A2B2	4.57	2.98	Significant

From the results of the Tuckey test calculation above, the following conclusions can be drawn; (1) The results of the analysis using the Tukey test for groups of students (A1B1) who have introverted behavior, giving individual assignments gave a better influence on the science learning outcomes of students who were assigned group assignments (A2B1). This is evident from the analysis that at the real level = 0.05 from the calculation results obtained the value of $Q_{count} = 9.35 > Q_{table} = 2.98$. This is further strengthened by the comparison of the mean scores of the two groups which are also different. In group A1B1 the mean value (= 21.73), while the group A2B1 average value (= 13.00). So, this hypothesis is accepted or tested significantly; (2) The results of the analysis of the Tukey test for groups of students (A2B2) who have extroverted learning behavior, group assignments have a better influence on science learning outcomes for students who are given individual assignments (A1B2). This is evident from the analysis that at the level of significance = 0.05 from the calculation results obtained by the value of $Q_{count} = 4.5673 > Q_{table} = 2.98$. This is further strengthened by the comparison of the mean scores of the two groups which are also different. In group A2B2 the average value (= 17.53), while the A1B2 group has the average value (= 13.27). So, this hypothesis is accepted or tested significantly.

Giving assignments is a way that is done by the teacher by asking students to do something. The task given is a form of follow-up to the learning activities that have been carried out by students previously. When students study, students have studied various materials and theories. To deepen understanding of the material, assignments can be used as a form of implementation. In addition, the success of students in completing the tasks given can be used as an indicator of learning success.

Technically, the assignment can be done in various ways. Assignments can be given individually or in groups. The processing time can be done in the teaching and learning process

or outside teaching hours. Determination of the type and timing of the task is based on the needs of students. The assignment, especially the training tasks given during the teaching and learning process, really needs to be done. In science learning, which generally contains mathematical elements, the existence of practice assignments can help improve students' understanding of the material being studied.

Students who have a tendency to be alone will not like learning activities that are carried out together. On the other hand, students who have a personality tendency to like to hang out with their friends will not really like learning activities that are individual in nature. Therefore, the teacher's understanding of the personality of his students greatly supports the success of his teaching and learning process in the classroom.

The results of testing the first hypothesis indicate that there are differences in the science learning outcomes of students who are taught by the individual assignment method and those who are taught by group assignment. Overall, the application of learning by giving assignments individually gave higher results than those taught by giving assignments in groups.

Giving assignments individually gives higher results than giving assignments in groups which can be explained in terms of learning techniques and mastery of the material. Students who are given assignments individually are motivated to be able to complete their assignments well by trying to maximize their knowledge. Students will find out things that can support the completion of their assignments. The student will not be able to succeed if he does not really understand and know how to solve it. When a student can do problem solving independently, then that knowledge will settle in him longer. The results obtained are a description of the student's hard work in completing the task. So that,

In addition, students who can complete their assignments independently tend to be more motivated to ask for further assignments. If so, then the teacher should not ignore this kind of situation. The student's will must be answered by giving a more challenging task. Because if what is delivered is not challenging for students, students tend to experience boredom in class. This is in accordance with the opinion of Djamarah & Aswan (2006) who said that the teacher gave assignments to students in the hope that students would learn. The more often students are given assignments, the learning outcomes will increase.

In contrast to the tasks given to be completed in groups. The tendency of students to complete tasks in these study groups is very dependent on their friends who are considered the smartest in the group to complete them. Some students wait for the results obtained from their friends and are very rarely involved in thinking together to find solutions to problems. Because they do not actively think hard in analyzing the given task, by combining the knowledge they already have, their understanding of the material through the task will be low. The results of testing the second hypothesis indicate that there is an interaction between the assignment method and student learning behavior which has a different effect on science learning outcomes.

Overall, students who have introverted behavior tend to get better grades if they are taught by giving individual assignments compared to giving assignments in groups. On the other hand, students who have extroverted behavior tend to get better results if they are taught by group assignments rather than individually.

These results indicate that a person's personality greatly affects learning outcomes. Students who tend to be introverted are always aloof. Everything he wants will be done by himself. This will also have an impact on the learning process. Introverted students will be more comfortable if they study alone. The presence of other people will actually eliminate the concentration of

learning. In his solitude, students like this actually have high accuracy. They don't talk much but know the concepts being taught and can answer if asked.

Students who have introverted learning behavior tend to be more thorough and careful in completing each task given to them. They try to think hard so that the tasks they do can be completed properly. They try to solve problems without the help of others. In addition, in doing their work, students who are introverted look more calm but serious. The results of his work also look well structured and neat.

These results are in contrast to students who have extroverted learning behavior. Their nature in general does not want to be alone, they want to always hang out with their friends. They will try to find friends in completing their tasks. Therefore, if the tasks given are required to be done alone, then their learning outcomes are less than optimal. Conversely, if the task is done in groups, with their communication skills and flexibility in getting along, their abilities will be more developed.

Students who have extroverted learning behavior tend not to be able to calm down in their seats. They seem restless if the tasks given are individual, so they try to find friends in completing the tasks they are doing. They are less able to solve problems on their own. So that if the task is given in the form of a group, then their group looks alive and growing. This is due to their innate nature that likes to talk and do activities together.

The results of testing the third hypothesis show that data analysis proves that there are differences in the science learning outcomes of students who have introverted behavior who are taught by giving assignments individually and in groups. The learning outcomes of students who are taught by giving assignments individually are higher than if they are taught by giving assignments in groups. So, if students in the class have introverted behavioral tendencies, then the appropriate assignment method is giving individual assignments.

The results of testing the fourth hypothesis show that students who have extroverted learning behavior who are taught by the group assignment method give higher results when compared to those taught by individual assignments. This can be seen from the results of testing the data using the Tukey test giving significant results.

Based on this fact, it strengthens the conclusion of this study which states that there is an interaction between the assignment method and student learning behavior on students' science learning outcomes. In addition, these results also confirm that a method is not suitable for all students' conditions. Due to the suitability of the learning methods used, one of them is closely related to the student's personality. Bias is a good method for others, but for others it is not suitable. Therefore, in order to implement a learning method well, the teacher must first understand the conditions and characteristics of the students.

Conclusion

Based on the results of data analysis and hypothesis testing, the following conclusions can be drawn; (1) There are differences in science learning outcomes for students who are given assignments individually and in groups; (2) There is an interaction between student learning behavior and the method of assigning assignments to science learning outcomes; (3) In students who behave introverted, the learning outcomes of students who were given individual assignments were higher than students who were given group assignments in science lessons; (4) In students who behaved extroverted, the learning outcomes of students who were given individual assignments were lower than students who were given group assignments in science lessons.

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