Enhancing students' performance in learning economics through group investigation model

Melhorar o desempenho dos alunos na aprendizagem de economia por meio do modelo de investigação em grupo

Melhorar o desempenho dos alunos na aprendizagem de economia por meio do modelo de investigação em grupo

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Abstract

Economics is one of the school subjects that has many relation with real life condition.Economics should be taught by process to make students understand the steps within it. As in High School 1 Bandar. Economics is still taught using lecture method that focused on teacher explanation and not involving students into the lesson. This may affect the students' performance on learning economics. Hence, this research has objective to enhance students' performance in learning economics using group investigation learning model. The methodology used both qualitative and quantitative by observing the learning process in three cycles. The subject of the research is students of 10th grade social department in High School 1 Bandar. The result found that, the average score in the early test on economics was 50.50 and increased to 67.22 in cycle I. The score kept on increasing in cycle II for 78.61 and 82.77 in cycle III. While the students' completeness on economicsshowed the early test had completeness of 43.33%, and enhancefor 55.55% in cycle I, 91.66% in cycle II and 100% in cycle III.Therefore, group investigation learning method can enhance students' performance.

Keywords: Students' performance; Group investigation; Learning process.

Resumo

Economia é uma das disciplinas escolares que tem muitas relações com as condições da vida real. A Economia deve ser ensinada por processo para fazer os alunos compreenderem as

etapas dentro dele. Como no colégio 1 Bandar. Economia ainda é ensinada usando o método de aula expositiva que se concentra na explicação do professor e não envolve os alunos na aula. Isso pode afetar o desempenho dos alunos no aprendizado de economia. Assim, esta pesquisa tem como objetivo melhorar o desempenho dos alunos na aprendizagem de economia usando o modelo de aprendizagem de investigação em grupo. A metodologia utilizada é qualitativa e quantitativa, observando o processo de aprendizagem em três ciclos. O sujeito da pesquisa são alunos do departamento social do 10º ano do Ensino Médio 1 Bandar. O resultado descobriu que a pontuação média no teste inicial de economia era 50,50 e aumentou para 67,22 no ciclo I. A pontuação continuou aumentando no ciclo II para 78,61 e 82,77 no ciclo III. Enquanto a completude dos alunos em economia mostrou que o teste inicial teve completude de 43,33% e melhora para 55,55% no ciclo I, 91,66% no ciclo II e 100% no ciclo III. Portanto, o método de aprendizagem de investigação em grupo pode melhorar o desempenho dos alunos.

Palavras-chave: Desempenho dos alunos; Investigação em grupo; Processo de aprendizado.

Resumen

La economía es una de las asignaturas escolares que tiene mucha relación con la condición de la vida real. La economía debe ser enseñada por procesos para que los estudiantes comprendan los pasos dentro de ella. Como en High School 1 Bandar. La economía todavía se enseña utilizando un método de clase magistral que se centra en la explicación del maestro y no involucra a los estudiantes en la lección. Esto puede afectar el desempeño de los estudiantes en el aprendizaje de la economía. Por lo tanto, esta investigación tiene como objetivo mejorar el desempeño de los estudiantes en el aprendizaje de economía utilizando el modelo de aprendizaje de investigación grupal. La metodología se utilizó tanto cualitativa como cuantitativa mediante la observación del proceso de aprendizaje en tres ciclos. El sujeto de la investigación son los estudiantes del departamento social de décimo grado en la escuela secundaria 1 Bandar. El resultado encontró que, el puntaje promedio en la prueba temprana de economía fue 50.50 y aumentó a 67.22 en el ciclo I. El puntaje siguió aumentando en el ciclo II para 78.61 y 82.77 en el ciclo III. Si bien la completitud de los estudiantes en economía mostró que la prueba temprana tuvo una completitud del 43.33% y mejoró en un 55.55% en el ciclo I, un 91.66% en el ciclo II y un 100% en el ciclo III. Por lo tanto, el método de aprendizaje de investigación grupal puede mejorar el desempeño de los estudiantes.

Palabras-clave: Rendimiento de los estudiantes; Investigación grupal; Proceso de aprendizaje.

1. Introduction

Economics is a lesson that is dynamic and close to daily life. The concept of needs, scale of priority, scarcity, rationality, profit and risk are things that often meet in economy activities. These concepts are also taught in formal education stage. In relation with that, Economics should be taught based on students' necessary for further challenges and obstacles. This is in accordance with one of the Economics functions written in Government Regulation No. 22 Year 2006 about the national education standard. This regulation shaped wise, rational and responsible behavior with knowledge and ability on Economics education for own self, family, society and State.

The early discovery showed that teacher is less creative in developing the source of study based on students' necessary. Teacheris more prefer to use the available book instead of expand it on his own. According to Wahyono (2001)the weakness of Economics education is on the teaching material that has very less discussion which students encounter and experience in their daily life.

However, High School 1 Bandar is still using teacher-centered method, which focus on teacher instead of involving students within the lesson, in economics lesson. The learning method that usually choose in delivering the teaching material is lecture method. Lecture method has less practice in its implementation and makes students difficult to find out the meaning on what they learn. This may lead to the decrease of students' motivation and learning performance.

Based on the early reflection and collaboration which done around July, 2019, the Economics learning process in High School 1 Bandar is not yet optimal. It happens because all of the learning process is still dominated by teacher. Teacher is active during the class while students only listen and note the important things. Moreover, teacher gives students material without combining it with practice, hence students did not know about the process of the knowledge is obtained.

It is supported with the data from observation and evaluation during Economics learning in 10th grade students of social department in High School 1 Bandar that still under the criteria for the minimum of curriculum standard for 65. The data of students' performance showed that 26 students still have score under the curriculum standard with the lowest score for 45 and the other 17 students have fulfill the standard with high score for 85. Seeing these data, teacher need to change his learning method during the lesson.

Learning Performance

Slameto (2003) stated that learning is a process done by someone to get behavior change as the result of his own experience within his interaction with environment. This behavior change can be defined as changes in mastering cognitive, affective or psychomotor aspects. The characteristic of behavior change in learning process, including; (a) conscious change, (b) continuous and functional change, (c) positive and active, (d) permanent, (e) objective and directive, and (f) cover the whole of behavior aspect.While according to Syah (2003), learning can be understood as the phase of the whole individual behavior which relatively stay as the observation and interaction result with environment that involved the cognitive process. The process of thinking here gives understanding and perception on environment which influence someone's behavior. When someone's cognitive ability is able to absorb things within the field then it will formed into behavior change. Cognitive ability consisted of study performance, study analysis, synthesize study, and evaluation study.

From the opinions above, it can be concluded that there are some important elements on learning definition; (a) learning refers to behavior change, (b) learning is a change that happen through experience and practice, (c) the changes in learning should be relative and good, (d) behavior that changed because of learning covers both physical and psychological.

Learning performance is an ability owned by students after their experience in learning. It has important role in learning process. The process of assessing learning performance can give teacher information on students' progress. Then, teacher can organize and arrange for further students' activities. According to Sukardi cited in Tumiyem (2019)assessment is a proof of success of someone's effort, in the form of knowledge and ability that can be useful in daily life. The success also can be proved through behavior and the way of thinking. Assessment is a proof of effort that can be reached (Winkel, 1983). Hence, students' learning performance showed the mastery of material in school after following the learning process in a certain period as manifested in the scores within the formative test result.

Group Investigation

Group investigation has been used in many situation and field of study. This model is created to guide students identify problems, explore the problem horizon, collect relevant data, develop and evaluate hypothesis (Winataputera cited in Hasan, Rakhman, & Ardiana,

2011). Depdiknas stated that this learning model direct and help students to find information. It has role as one of the study sources that able to create social environment with democratic and science process (Depdiknas, 2005). Democratic characteristic is marked with decisions that developed or strengthen by group experiences on the context of problem that become the central point in learning process (Winataputera in Hasan et al., 2011).In solving problem, teacher and student have different role. Teacher has responsibility to motivate students to work cooperative and help them to prepare the supporting facility used to solve the problem. Ibrahim stated that, in group investigation, teacher divides students in groups with 6 or 7 members by consider on intimacy and interest in certain topic. While students may choose the topic to be discussed and make the work divisions to handle the problem within(Ibrahim & Nur, 2000). Thus, the discussion will create students' involvement exchanging their opinions.

Slavin (2009) said that there are steps in applying group investigation model:

(a) grouping or step to identify topic that will be discussed;

(b) planning or step to make plan on learning tasks;

(c) investigation or step to implementing students' investigation project such as collecting information, analyzing data, giving recommendation, and exchanging ideas and opinions;

(d) organizing or step to prepare for final task;

(e) presenting or step to present the work and,

(f) evaluation or step to evaluate the students' project result.

Therefore, from the issue above, the researcher wanted to know the enhancement on students' of High School 1 Bandar performance using group investigation learning model in learning economics.

2. Methodology

This research done in High School 1 Bandar with 10th grade students of social department 1 as the research subject. The reason why researcher used 10th grade students of social department 1 as the research subject because this class had low score and motivation on Economics. Also the students were passive during the Economics lesson. Therefore, the researcher wanted to enhance the students' performance by using different learning model. Group investigation model was used to enhance students' performance in learning Economics.

The source of data used in this research was students of 10th grade social department 1, teacher of 10th grade social department 1, Headmaster of High School 1 Bandar and the other related party. The data werecollected from archive, documents, test, and observation sheet. Document here refers to students score on Economics, while observation according toArikunto (2005) is a technique done by observing and noting.

Observation is a way to do evaluation by observing and noting in systematic, logic and rational about phenomenon that being investigated (Arifin, 1998). Observation used in this research is observation participant in which teacher has active role to monitor and follow all the activities within the lesson.

Data Analysis Technique

The data in the form of test result is analyzed in descriptive by comparing the result among cycles. The changing on students' performance before and after had treatment was depend on how many cycle done. The test result was then compared due to reach the expected result. As of the presentation data (Sudjana, 1989).

$$P = \frac{f \times 100\%}{N}$$

Notes:

f: frequency   P: frequency percentage   N: the amount of student

The calculation result then combined with the study completeness criteria which classified in two categories as in Table 1 below:

Table 1. The minimum completeness criteria.

Minimum completeness criteria	Qualification
≥65	Complete
< 65	Incomplete

Source: own study.

Research Instrument

The research instrument used was working sheet, evaluation test and observation sheet. The success of the research was marked with the change into better condition, either in process or in result. The researcher defined the success indicator as below;

a) This research claimed as success if the average score reached ≥75% and categorized into good criteria

b) This research claimed as success if ≥75% of students reached the curriculum standard for ≥65

3. Result

a. Cycle I

- Planning

Before doing the research, the researcher did some research plans; (1) the early phase, researcher did research to High School of 1 Bandar and ask permission to the Headmaster or the person in charge. The researcher also explained on the intention and purpose on his study, and (2) the second phase, researcher prepared the documents from university and some data collection instrument. The researcher also looked for tools that will be used in research, including the property. After all the preparation done, the research can be done.

- Implementation

The implementation was using group investigation learning model which has been proposed in the lesson plan. In this stage, the researcher showed a picture of animal in front of the class and asked students to make question related to the picture. The researcher then choose 6 questions as the discussion idea.

- Observation

The researcher observed the students' behavior and attitude during the lesson on economic problem and economic system by using group investigation model. The researcher also observed the teacher's ability in teaching using this model. The observation result showed that in grouping stage, there is no obstacle, students are glad to gather with the defined group. After that, students prepare for what will they learn on that day. They started

to collect information, analyze the data and summarize the investigated problem. In this stage, each students give comment on every activities, discussed each other and clarified and synthesize the idea and opinion together. The next stage is presentation. Each group present their work in front of the class, while the other groups are involved actively as listener that evaluate, clarify, and ask some question to the presenter. After that, students along with teacher evaluate on the lesson and close the lesson with finishing the posttest which given for every students.

- Reflection

Based on the students' performance during the Economics lesson, it is found that there are many weakness within the lesson, for example on the students' study completeness which seen through the frequency of students' score performance as below:

Table 2. The frequency of students' score performance on Economics lesson in cycle I.

No.	Score	Frequency	Percentage
1	0-64	9	44.44%
2	65-100	15	55.55%
Total		24	100%

Source: own study.

Based on the Table 2 above, it can be seen that in cycle I, only 15 students of 24 students who get score above the minimum completeness score. While the remaining 9 students or 44.44% get score below the standard (Table 3).

Table 3. Cycle I - Test evaluation result.

Information	Early Exam
Lowest Score	40
Highest Score	90
Average Score	67.22
Students' completeness	55.55%

Source: own study.

From the test evaluation result, it is showed that the average score for students' ability to answer the question with correct is 67.22 in which the result is still under the average score

that expected by the researcher and school that is 65. Meanwhile, the number of students' completeness on Economics lesson is 55.55%, in which still did not meet the school expectation for more than 75%. Therefore, the additional treatment needed to be done due to enhance the students' understanding, performance, and activity especially for economy problem and economy system.

The evaluation test on table 3 above can be temporary concluded that the mastery on economic problem and economy system by 10th grade students of social department is still less. There are some indicators that still have answer with less than 75% which indicated that students still not yet understand on the main material on Economics.

b. Cycle II

- Planning

In this cycle, the researcher refine the weakness from the previous cycle, such as; (a) reduce the number of member in each group to 3 people, (b) teacher fix the time management within the learning process, (c) make the learning atmosphere become fun in order to make students involved within the lesson actively, (d) teacher need to explain more detail on material and give comment or suggestion for every groups to be compact, and (e) give direction to appreciate friends while standing in front of the class.

- Implementation

The implementation was using group investigation learning model which has been proposed in the lesson plan. In this stage, the researcher showed a picture of animal in front of the class and asked students to make question related to the picture. The researcher then choose 6 questions as the discussion idea.

- Observation

The researcher observed the students' behavior and attitude during the lesson on economic problem and economic system by using group investigation model. The observation result on students' learning activity showed no obstacle within the learning process. Students were happy to join the group decided by the teacher. Then, students prepared on what they will learn by collecting information, analyzing the data and summarize the investigated problem. In this stage, each students gave suggestion on every activities. They also discussed, clarified, and united the ideas and opinions. After that, every groups present their group work

in front of the class. Meanwhile, the other groups are involved actively as listener that evaluate, clarify, and ask some question to the presenter. Students along with teacher evaluate on the lesson and close the lesson with finishing the evaluation test which given for every students.

- Reflection

The evaluation test result gave description on students' ability in understanding the lesson. The frequency of students' performance in cycle II can be seen as below (Table 4):

Table 4. The frequency of students' score performance on Economics lesson in cycle. II.

No.	Score	Frequency	Percentage
1	0-64	2	8.33%
2	65-100	22	91.67%
Total		24	100%

Source: own study.

From the table above, it can be seen that students with score less than 65 were 2 students or 8.33% and students with score higher or above the curriculum standard were 22 students or 91.67%. Meanwhile, the test evaluation result can be seen on the Table 5 below:

Table 5. Cycle II - Test evaluation result

Information	Cycle I	Cycle II
Lowest Score	40	60
Highest Score	90	100
Average Score	67.22	78.61
Students' completeness	55.55%	91.67%

Source: own study.

Table 5 above indicated that; (a) the lowest score obtained by students in cycle I was 40 and in cycle II increase to be 60, while the higher score in cycle I was 90 and 100 in cycle II; (b) the average score between cycle I and II also had enhancement from 67.22 to be 78.61; (c) for students' completeness, they had reach 55.55% of completeness in cycle I, only 11 students whose score is below the standard, and in cycle II, the completeness enhanced for 91.66%.

From the observation in cycle II, the researcher found that there were 2 students who still not yet reach the curriculum standard. Therefore, then researcher continue to cycle III to follow up the ability in cycle II.

c. Cycle III

- Planning

In this step, teacher arranged the lesson plan with same material as in both cycle I and II that is the problem of economic and economy system, but with different steps. The lesson plan is discussed with supervising teacher due to make it as a guide to do the treatment. As in cycle II, teacher prepared the learning media and together with the researcher arrange on what kind of activities that should be done for cycle III. Moreover, for evaluation, teacher arranged exam test in order to know students' performance during the lesson. Within the lesson, observation was also done to know the students' affective and psychomotor performance.

- Implementation

The implementation was using group investigation learning model which has been proposed in the lesson plan. In this stage, the researcher showed a picture of animal in front of the class and asked students to make question related to the picture. The researcher then choose 6 questions as the discussion idea.

- Observation

The researcher observed the students' behavior and attitude during the lesson on economic problem and economic system by using group investigation model. The observation result showed that in grouping stage, there is no obstacle, students are glad to gather with the defined group. After that, students prepare for what will they learn on that day by collecting information, analyzing the data and summarize the investigated problem. Each students gave suggestion on every activities. They also discussed, clarified, and united the ideas and opinions. After that, every groups present their group work in front of the class. Meanwhile, the other groups are involved actively as listener that evaluate, clarify, and ask some question to the presenter. Students along with teacher evaluate on the lesson and close the lesson with finishing the evaluation test which given for every students.

- Reflection

After the implementation of cycle III completed, then on November 5th 2019 the researcher held test on students' study performance to know the students' ability in solving the questions. The result can be seen in table 6 below:

Table 6. The frequency of students' score performance on Economics lesson in cycle III.

No.	Score	Frequency	Percentage
1	0-64	0	0%
2	65-100	24	100%
	Total	24	100%

Source: own study.

Table 6 above showed that there was no longer students who get score under the curriculum standard. All students got score above the standard with 4 students with score 100 or 11.11%.

Table 7. Cycle III – Cognitive test result.

Information	Cycle I	Cycle II	Cycle III
Lowest Score	40	60	70
Highest Score	90	100	100
Average Score	67.22	78.61	82.77
Students' completeness	55.55%	91.67%	100%

Source: own study.

Table 7 above indicated that:

(a) the lowest score in cycle I was 40 which increased for 60 in cycle II, and became 70 in cycle III;

(b) the students' highest score in cycle I was 90 then in both cycle II and III the score raised up to 100;

(c) the enhancement also seen in students' average score, in cycle I the average score was 67.22, in cycle II 78.61 and 82.77 in cycle III;

(d) In cycle I, the completeness had reach 55.55% with 11 students get score under the curriculum standard, but overall it already enhance the students' study performance.

In cycle II, the completeness had increased for 91.66% with 2 students under the standard. In the last cycle, the completeness was complete 100%, there was no students whose score under the curriculum standard.

Hence, from the data, it is seen that the enhancement happened during the cycle. This enhancement showed that the learning process using group investigation model make the lesson more effective. In contrast with the condition before treatment, students were becoming more active by asking question and delivering their opinion.

Students were really involved into the lesson, they were given chance to discuss, to do experiment and demonstrate their experiment. They were also given appreciation to increase their study motivation.

4. Discussion

Three cycles had been done in analyzing students' performance using group investigation model, the diagram showed on students' cognitive result can be seen as below:

Diagram 1. Students' cognitive test result.
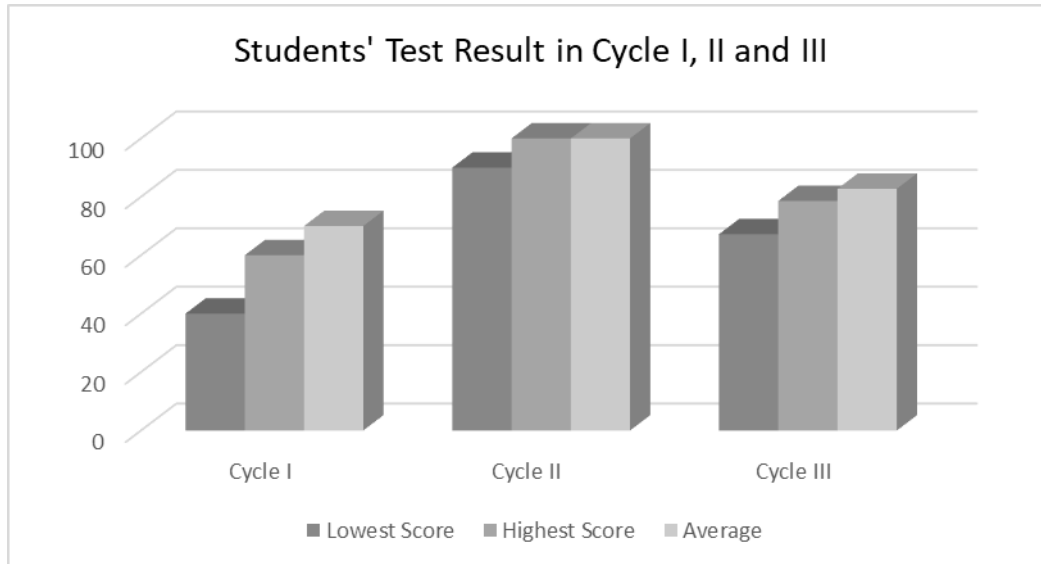
Source: own study.

In cycle I, the learning process is delivered with planned and structured strategy started from the early, main and closing activity. These activities are focused to make students active in paying attention, observation and experiment during the lesson to get conclusion and demonstrate their group or individual task and end up by completing students' working sheet.

After cycle I is done, it can be seen that there was enhancement on students' performance with average score for 67.22 or 55.55% completeness. However there were 9 students who get score less than 65.

The cycle II, the continuity of the previous cycle, is used to reach the objective of the study. Similar to the cycle I, the learning process also delivered with planned and structured strategy but in more optimal way.

The result in cycle II showed that the enhancement on students' performance raised to 78.61 with 91.66% completeness. This meant only 2 students who get score under or less than 65.

The last cycle or cycle III is done to prove whether the group investigation learning model which used in learning Economics can enhance students' performance or not. In this cycle, students tried to create their final work.

They brought their own tools and materials, and the researcher only became the guide. The result showed that the enhancement of students' performance increased to be 100% with average score for 82.77.

5. Conclusion

Based on the study, it can be concluded that students' performance on economics subject is increased after the application of group investigation model. It is drawn in the average score of 10th grade students of social department which showed the score in the early test for 50.50 into 67.22 in cycle I and increased to be 78.61 in cycle II and 82.77 in cycle III.

For students' completeness, with completeness standard for 65, the early test had 43.33% on study completeness, which then increased for 55.55% in cycle I, 91.66% in cycle II and 100% in cycle III.

Enhancing students' performance using group investigation model was also need the role of teacher. Teacher must be creative in applying group investigation model based on students' condition or necessary.

Suggestion

   a. For Teacher:
- To enhance the learning performance, it is hoped to use group investigation model within the learning process.

- It is hoped to use group investigation within the learning process to enhance students' activeness, creativity and effectiveness.
- To get an exact answer, it is suggested to dig on students' opinion or respond deeply using sentence that direct into the group investigation learning model.
- The continuity on the use of group investigation model on economy problem and system material.

b. For Student:

- Students should be active by delivering ideas or thoughts during the learning process. Thus, the process can walk smoothly and get the optimal learning performance.
- Students can apply their performance in daily life.

Reference

Arifin, Z. (1998). *Pendekatan Dalam Proses Belajar Mengajar*. Bandung: Remaja Rosdakarya.

Arikunto, A. (2005). *Manajemen Penelitian*. Jakarta: Rineka Cipta.

Depdiknas. (2005). *Peraturan Pemerintah Republik Indonesia No 19 Tahun 2005 tentang Standar Nasional Pendidikan*. Jakarta: Depdiknas.

Hasan, S., Rakhman, M., & Ardiana, H. (2011). Model Cooperative Learning Tipe Group Investigation untuk Meningkatkan Hasil Belajar pada Mata Pelajaran Perawatan dan Perbaikan Sistem Refrigerasi. *INVOTEC*, *7*(2).

Ibrahim, M., & Nur, M. (2000). *Pembelajaran Kooperatif*. Surabaya: University Press.

Slameto, S. (2003). *Belajar dan Faktor-Faktor yang Mempengaruhinya*. Jakarta: PT. Rineka Cipta.

Slavin, R. E. (2009). *Cooperative Learning Teori, Riset dan Praktek* (Lita, Ed.). Bandung: Nusa Media.

Sudjana, N. (1989). *Metode Statistika*. Bandung: Tarsito.

Syah, M. (2003). *Psikologi Belajar*. Jakarta: Raja Grafindo Persada.

Tumiyem, T. (2019). Implementasi Model Pembelajaran Group Investigation (GI) Sebagai Upaya Meningkatkan Hasil Belajar IPA Siswa Kelas VI-C SD Negeri 2 Metro Timur Tahun Pelajaran 2015/2016. *Jurnal Lentera Pendidikan Pusat Penelitian LPPM UM METRO*, *4*(2).

Wahyono, W. (2001). *Pengaruh Kepala Ekonomi, Kepala Keluarga Terhadap Intensitas Pendidikan Ekonomi Di Lingkungan Keluarga*. Universitas Negeri Malang.

Winkel, W. S. (1983). *Psikologi Pendidikan dan Evaluasi Belajar*. Jakarta: Gramedia Pustaka Utama.

Percentage of contribution of each author in the manuscript

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