

The Effect of Exercise Method on the Learning Achievement of Primary School Students

Iswan
Muhammadiyah University of Jakarta
iswanfipumj@gmail.com

Herwina Bahar
Muhammadiyah University of Jakarta
wina_bahar@yahoo.com

Hasanul Misbah
Muhammadiyah University of Jakarta
misbah.hasanul@gmail.com

Abstract. Integrating learning method into the learning materials by applying the main components of the learning strategy that encourages student participation during and after the learning process significantly develops the students' problem-solving skill. Learning is a thinking process by drawing general conclusions from individual/specific case. In contrast, it can be generated from specific cases to general conclusion. In short, learning is a systematic way of thinking that involves data or clarification of concepts. Therefore, learning quality determines how one thinks about something and how something is related to others, so one can draw a conclusion or make an achievement. In measuring the student achievement in the moderate category with the correlation value of 0.411, there was a positive contribution of the exercise methods to student achievement with a percentage of 16.9 %. It means that the students learning achievement were mostly influenced by other factors (83.11%), which were not measured in this study. There was a significant correlation between the exercise method and the students learning achievement, with a significance value of 2.16%.

Keywords: *exercise method, student achievement.*

INTRODUCTION

Learning is the process of changing attitudes and behavior, mainly due to the materials learned or the learning resources. Some of the learning resources include books, environment, teachers, classmates, and other learning models and behavior as a result of the learning process emerged from the skills, attitudes, habits, and understanding. Students have the potential to grow and develop, possess needs to be fulfilled, are responsible for the task and duty, and have the dignity to be treated humanely. As an individual, each student has his own problems in the learning process regarding himself or others [1].

After the students understand the learning objectives of the exercise, they can individually learn and look for references relevant to the objectives and learning instruction. In the learning process, the teacher should control the learning activities and monitor the students so he knows how well students do the exercise and

whether or not they can finish it individually. The effective and meaningful learning process occurs when the learning runs successfully and meets the students' and teacher's satisfaction. When the students learn wholeheartedly and responsibly, it will satisfy the teacher and create a sense of success [2].

The teacher's professionalism in managing the learning process determines the success of learning [3]. The thinking process will help individuals understand the learning objectives. A student understands the learning materials through a thinking process. In this case, the exercise method implemented by the teacher must have clear steps, follow a specific schedule, and have clear instructions. Besides, it requires students' responsibility to complete the exercise well.

LITERATURE REVIEW

Learning Strategies in Primary Schools

The learning methods in social science classes tend to be teacher-centered, where teachers dominate the class and rely heavily on lectures. The communication is one way, that is, the teacher talks to the student(s) [4],[5]. In this traditional approach, students perceive the teacher as the only reference. In fact, more references can be found, so the students have various learning resources. In this case, an exercise method can be implemented as an alternative way to upgrade student skills and learning materials. Successful learning can be achieved when students actively participate in finding and utilizing various learning resources through exercise [6].

The learning should take students' needs into accounts in order to develop their social insight and encourage them to find more learning resources outside the classroom. The use of exercise technique can also improve student understanding about the lesson. Basically, giving students some exercises will help the student connect the knowledge gained and their experiences, so they know how to use what they have learned. The teachers can gather information about the students' skill and comprehension through exercise activities. The teaching method is also a means to create student-student and teacher-student interactions. By including human interactions in the teaching activities, the teaching goals can be achieved.

Kaufman. R. and Cox. M. [7] state that to master a learning strategy, teachers should familiarize themselves with the learning techniques. The appropriate teaching method as the tool to achieve the learning objective will create successful learning because the objectives are formulated based on the students' competences and needs. The teaching method implemented by the teacher in each meeting is well-considered and properly selected based on the instructional objectives. Some of the contributing factors are the students, teaching objectives, learning situation, facilities, and teachers. In many cases, students tend to have difficulties in concentrating for an extended period of time.

The time needed to understand the materials vary among the students. Some students can understand the material in a very short time, some of them take moderate time, while some others take much time to comprehend the materials [8]. It may be influenced by their intellectuality. Therefore, a teacher is supposed to find an appropriate teaching method as an effective tool to support the learning and to reach the teaching objectives. In the social science class, the topic is usually related to student' daily life, so the method used should include student experiences. The exercise method is an actualization in student daily life because they face various situations while completing exercises.

Exercise Method

Exercise is a reflection of life. Every human faces many situations that act as 'exercises,' which inspire them to improve their life. Students also go through various exercises to make them ready in the real world. The exercises the students have are usually related to the topics learned in the class. Using an exercise method is one of the necessary skills that the teacher should master because a teacher can teach their students well with the help of exercises. Therefore, the teaching method is one of the efforts to achieve the teaching goals with various kinds of techniques or to systematically interact with the students during the learning process. This way, the students can learn the materials and at the same time achieve the learning goals.

Learning Achievement

Learning achievement is the optimal learning result of an individual based on the positive changes in the cognitive, affective, and psychomotor aspects. Learning achievement is reflected in students' attitude, knowledge, and skill as a result of learning for a certain period of time. A student with good achievement reaches a specific qualification, which may positively change their attitude, knowledge, and skill. There are several factors and condition that make a successful learner. A teacher has a significant role in the students learning outcomes. Teacher behavior is also influential. Therefore, a teacher should give positive praises and

appreciation, listen to student ideas and thought, use an indirect approach, and speak smartly and wisely.

RESULT

Data Description

The data description is the first step of the data analysis procedure. The data were the scores collected from the research objects through the questionnaire distributed to the respondents. The independent variable (X) was the implementation of the exercise method, and the dependent variable (Y) was the students learning achievement in a social science subject. After the questionnaires were collected, the researcher checked them and selected the most proper questionnaires to analyze and score. Based on the analysis, it was decided that all questionnaires would be analyzed because they met the researcher criteria. The questionnaires served as a bank of information and were answered properly.

Table 1. Frequency Distribution Table of Variable X

Length of Class	x_i	f_i	x_i^2	$f_i x_i$	$f_i x_i^2$
68-70	69	2	4761	138	9522
71-73	72	4	5481	288	20736
74-76	75	6	5625	450	33750
77-79	78	7	6084	546	42588
80-82	81	4	6561	324	26244
83-85	84	2	7056	168	14112
Total		25		1914	146952

Table 2. The Score List of Variable X for Normality Distribution Testing

Class Limit (X)	Z for Class Limit	Z Score from the List of F	The Width of Each Interval Class	The Expected Frequency (E _i)	Freq. (E _o)	$\frac{(E_o - E_i)^2}{E_i}$
67,5	-2,17	0,4850	0,0571	1,43	2	0,227
70,5	-1,46	0,4279	0,1606	4,02	4	0,000
73,5	-0,73	0,2673	0,2633	6,58	6	0,051
76,5	-0,01	0,0040	0,2651	6,63	7	0,021
79,5	0,71	0,2611	0,1625	4,06	4	0,000
82,5	1,43	0,4236	0,0606	1,52	2	0,152
85,5	2,15	0,4842				
					$\sum \chi^2$	0,451

Table 3. The Score List of Variable Y for Normality Distribution Testing

Class Limit (X)	Z for Class Limit	Z Score from the List of F	Width of Each Class Interval	The Expected Frequency (E _i)	Freq (E _o)	χ^2
73,5	-2,09	0,4817	0,0670	1,67	2	0,06
76,5	-1,37	0,4147	0,1725	4,31	5	0,11
79,5	-0,65	0,2422	0,2143	5,36	6	0,07
82,5	0,07	0,0279	0,2573	6,43	7	0,05
85,5	0,79	0,2852	0,1505	3,76	3	0,15
88,5	1,52	0,4357	0,0570	1,43	2	0,23
91,5	2,24	0,4927				
					$\sum \chi^2 =$	0,67

Data Analysis Testing

The Implementation of Exercise Method

The implementation of the exercise method was by giving exercises to discuss the core materials in each

meeting during the learning process of social science subject. The questionnaires consisted of 20 questions and had a score ranging from 1 to 5. The lowest cumulative score was 20, and the highest was 100. After counting all scores, it was found that the lowest score was 68 and the highest was 85. It can be summarized that the gap between the lowest and highest was 17 and after the data analysis, it was found that: (a) the mean score was 76.56, and (b) the standard deviation was 4.16. The distribution of score frequency can be seen in Table 1.

Table 1 shows that 6 respondents (24%) were in the group mean, 6 respondents (24%) were below the group mean, and 13 other respondents (52 %) were above the group mean. To test the data normality, the research adopts Chi-Quadratic (χ^2) with the following testing requirement.

H_0 : accepted, if χ^2 counted $< \chi^2$ table, meaning that the data are normally distributed

H_1 : accepted, if χ^2 counted $\geq \chi^2$ table, meaning that data are not normally distributed.

Students Learning Achievement

Learning activities are the core of education. The education program includes the use of a method, media, and other educational supporting tools. The investigated aspect of this research was the students' learning result after learning using the exercise method. Based on the data of 25 students as the test-takers, the highest score was 90, and the lowest was 74, and the score gap between the highest and the lowest was 16. After further analysis, it shows that: (a) the mean score was 82,20; (b) the standard deviation.

Data Interpretation

The data interpretation was based on 18 items of question answered by 25 respondents (students). In implementing the exercise method, the teacher explained the objectives of giving the exercises when the class started. 5 respondents (20%) claimed the teacher frequently did that, 16 respondents (64%) stated that the teacher sometimes did that, and 4 respondents (16%) stated that it is rare. The other question was about whether or not the exercises are comprehensible. 2 respondents claimed it was always comprehensible, 12 respondents (48%) said it was often comprehensible, 9 respondents (36%) said it is sometimes comprehensible, and 2 students said that it is rarely comprehensible.

Related to cheating prohibition by teachers, 3 students (12%) stated it always happened, 2 respondents (8%) stated it often happened, 19 respondents (76%) stated it sometimes happened, and 1 respondent (4%) said it rarely happened. Regarding the students' task to make a report that contained some exercises, 3 respondents (12%) said always, 6 respondent (24%) said sometimes, 1 respondent (4%) said that it is rare, and 10 students (40%) said it never happened. Related to

whether the students are responsible to orally report their exercise result in front of the classroom, 1 respondent said it always happened, 16 respondents (64%) said it frequently happened, 7 respondents (28%) said that it sometimes happened and 1 respondent (4%) said that it never happened. Related to whether there was a discussion for the follow-up of exercises, 11 respondents (44%) said it always happened, 5 respondents (20%) said it often happened, and 9 respondents (36%) said it sometimes occurred. The students learning achievement reflects their competence in the lesson taught in the class. Based on the frequency list of the Y variable, it showed that 72% of primary school students had above average and average scores. This condition influences student competence in doing exercises.

They can increase knowledge by investigating, analyzing, and synthesizing the materials. Students become discipline when they need to balance what they want to do and what their environment wants them to do. In a group, each student must consider their peers. The students can improve their learning by listening, giving opinions, and paying more attention to the teamwork. Certainly, the teacher should figure out student competence. The teacher should look closely and make good use of student competence. The more able students who have more knowledge can help less able students so that they can learn together about good teamwork and responsibility.

CONCLUSION

According to the analysis results and hypothesis testing, it can be concluded that:

1. The implementation of the exercise method showed a relationship with the students' learning achievement with moderate category and a correlation value of 0.411.
2. There was a positive contribution of exercise method to the student learning achievement with the percentage of 16.89%, which indicates that the achievement was influenced more by other factors (83.11%) not examined in this study.
3. There was a significant influence of the implementation of the exercise method on the students learning achievement with the significance value of 2.16.

REFERENCES

- [1] Suggate. S. P. School entry age and reading achievement in the 2006 Programme for International Student Assessment (PISA). *International Journal of Educational Research*. Volume 48. Issue 3. pp 151-161. Suggate. S. P. Schau. 2009.

- [2] Vygotsky, L. S. *Mind in Society: The development of Higher Mental Processes*. Cambridge and London: Harvard University Press. 1978.
- [3] Walsh, G. *Professional development and pedagogy in early childhood in the Republic of Ireland: Examining pedagogy in early childhood*. Child Links. Research in Early Childhood Care and Education. Issue 3. pp. 2-7. 2010.
- [4] Garret, T. *Student-Centered and Teacher-Centered Classroom Management: A case Study of three Elementary Teachers*. *Journal of Classroom Interaction*. Vol. 43 pp 34-37. 2008.
- [6] Dimitric, R.M. *Components of Successful Education*. *Journal of the Teaching Mathematics*. Vol. 6. No. 2 pp: 69-80. 2003.
- [7] Rimm. Kaufman, S. Pianta. R. and Cox. M. *Teachers Judgements of Problems in the Transition to Kindergarten*. *Early Childhood Research Quarterly*. 15, No. 2. pp. 147-166. 2000.
- [8] Katwibun. D. *The need for Preparing Mathematics Teachers for Diverse Classrooms in Thailand*. *Journal of Social and Behavioral Sciences*. Vol. 93. pp: 756-761. 2013.