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IMPROVING HIGHER ORDER THINKING SKILLS THROUGH PROJECT-BASED LEARNING IN PRIMARY SCHOOLS

Takiddin*, Fasli Jalal, Amos Neolaka
Universitas Negeri Jakarta, Indonesia
E-mail: takiddin_7527167808@mhs.unj.ac.id

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Abstract

This study aims to determine the effects of Project-Based Learning development in social studies to improve students' higher-order thinking skills in the fifth grade, from Al Mursyidiyyah Islamic primary school in Kota Tangerang Selatan. The method used in this research is the research and development (R&D) and quasi-experimental method. Research and development (R&D) is used to develop Project Based Learning to improve students' higher-order thinking skills in the fifth grade of Islamic primary school. The quasi-experimental method is used to find the difference of students' higher-order thinking skills improvement using project-based learning models in social studies against students who get learning with conventional learning models. Data collection techniques in this study used to test and observation instruments. Thus, this study finds that project-based learning in social studies improves students' higher-order thinking skills. The novelty of this research is the development of project-based learning in social studies can improve the higher-order thinking skills of Islamic Primary School students.

Keywords: higher-order thinking skills; project-based learning; social studies

Abstrak

Tujuan penelitian adalah untuk mengetahui pengaruh model Project Based Learning terhadap peningkatan keterampilan berpikir tingkat tinggi dalam pembelajaran IPS pada siswa kelas V Madrasah Ibtidaiyah Al Mursyidiyyah Kota Tangerang Selatan. Metode yang digunakan dalam penelitian ini adalah metode penelitian dan pengembangan (R&D) dan metode kuasi eksperimen. Metode R&D digunakan untuk mengembangkan project based learning dalam IPS untuk meningkatkan keterampilan berpikir tingkat tinggi siswa dan metode kuasi eksperimen digunakan untuk mengetahui perbandingan peningkatan keterampilan berpikir tingkat tinggi siswa dalam pembelajaran IPS yang menggunakan model pembelajaran berbasis proyek dengan siswa yang mendapatkan pembelajaran dengan model pembelajaran konvensional. Penelitian ini menggunakan desain kuasi eksperimen Nonequivalent Control Group Pretest-posttest Design dimana kelompok eksperimen maupun kelompok kontrol tidak dipilih secara random. Teknik pengumpulan data dalam penelitian ini menggunakan instrumen tes dan pengamatan. Hasil penelitian menunjukkan bahwa pembelajaran berbasisis proyek dalam pembelajaran IPS dapat meningkatkan keterampilan berpikir tingkat tinggi siswa. Novelti penelitian ini adalah pengembangan pembelajaran berbasisis proyek dalam pembelajaran IPS dapat meningkatkan keterampilan berpikir tingkat tinggi siswa.

***Kata kunci**: berpikir tingkat tinggi; project based learning; ilmu pengetahuan sosial*

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*Corresponding author

Introduction

The importance of social studies in the primary education curriculum is because social studies aim to help students to be good and smart citizens. This study aims to determine the effects of Project-Based Learning in social studies to improve students' higher-order thinking skills in the fifth grade of Al Mursyidiyyah Islamic primary school in Kota Tangerang Selatan.

The purpose of social studies is, as stated by National Council for Social Studies (NCSS), the first membership organization of social studies educators in America stating that social studies aim to educate young people to be ready to coexist in differences and be able to collaborate with others to solve some problems well (Schneider, 1994).

The purpose of social studies, according to the NCSS clearly states that social studies have to prepare future generations to be able to identify, understand and work together to solve various problems faced by interdependent nations and the world. To realize this goal, the NCSS established the essential skills in Social Sciences, one of which is thinking which includes classifying information, interpreting information, analyzing information, summarizing information, synthesizing information and evaluating information (Schneider, 1994). The thinking skills formulated by the NCSS above includes three levels of thinking, namely analysis, synthesis, and evaluation, which fall into the category of higher-order thinking according to Bloom's theory.

The urgency of higher-order thinking skills in Islamic primary schools is stated by Mainali (2012). Nowadays, schools are not only teaching students to memorize facts and concepts but also teaching students to make decisions, make priorities, develop strategies and solve problems collaboratively. In the implementation of these skills, naturally, higher-order thinking skills is needed. These skills will not be honed and will not be embedded in students if they only use lower-order thinking, namely the level of knowledge, understanding, and applications. In line with Mainali, Gough (1991) also emphasized the importance of the ability to think in the future, so it was assumed that specific knowledge would not be as important as the ability to learn and understand new information in the future.

The importance of higher-order thinking skills for students is because these skills are relevant to the real world. The new direction in education has an emphasis on higher-order thinking in the classroom, and the situational HOT is more authentic because it is relevant to the real world (Lauren B. Resnick, 2000). The change in learning by prioritizing HOTS is very important for Islamic Primary schools students because Islamic Primary schools students are in the crucial position of preparing students to continue education (junior high school equivalent to college).

One indicator of students' achievements is the level of PISA, Indonesia's Program for International Student Assessment. Indonesia's ranking has indeed increased, namely in the field of science, from 382 points in 2012 to 403 points in 2015. In mathematics, from 375 points in 2012 to 386 points in 2015. And in reading, the field from 396 in the year 2012 to 397 points in 2015, although this has not shown a significant increase (Kementerian Pendidikan dan Kebudayaan, 2016). However, Indonesia's ranking is still very low when compared to the average of OECD country. Based on the data, the average science score of OECD countries is 493. While Indonesia only has a score of 403. For mathematics, the average of the OECD country is 490, but Indonesia's score is only 386. While in reading, the average score in Indonesia

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is only 397, while the average the OECD average is 493 (Wurinanda, 2016).

Based on the data of Indonesia's PISA ranking, the learning process in Indonesia needs some significant changes. Changes in the learning process, not only in the three fields that are tested in PISA; Science, Mathematics and Language, but also in all fields of study in school, including the teaching of/teaching social studies at the primary level.

One of the solutions to improve students higher-order thinking skills is using a project-based learning model. Stephanie Bell (Turner, 2012) stated that in PBL, students find solutions, explain conclusions, ask more questions, and create products.

Many previous studies have examined the effect of project-based learning on the students' motivation, learning outcomes and higher-order thinking skills. Unfortunately, most of the studies are still limited to the application of project-based learning at higher and secondary education levels. The studies have not yet presented the technical implementation of project-based learning models in social studies learning at the Islamic Primary School level in details. The project-based learning design used so far is still general in nature, so if teachers want to apply it in Islamic Primary School, they must modify it first. This factor is also one of the obstacles for teachers in the implementation of project-based learning in their classes. In addition, the development of project-based learning also expected to facilitate students' higher-order thinking skills in social studies in Islamic Primary School.

Based on the preliminary research, it is known that some of the teachers interviewed claimed that they had already implemented project-based learning in their classrooms. However, the implementation is still just doing a project, not starting with the submission of problems by providing some questions that can stimulate students to think and try to solve these problems through project activities. Another obstacle is teachers are still confused about implementing project-based learning because there is no enough guidance books about the systematic implementation of project-based learning in Islamic Primary School. Another consideration for teachers in implementing project-based learning in Islamic Primary School is the length of time required for project completion. Therefore, the development of project-based learning model to improve students' higher-order thinking skills is needed in accordance with the development of Islamic primary school students characteristics.

What is Higher Order Thinking Skills?

Mainali (Mainali, 2012) stated that higher-order thinking includes critical, logical, reflective, metacognitive and creative thinking. These thoughts are activated when individuals face problems, uncertainty, questions, or unusual dilemmas. Furthermore Mainali (Mainali, 2012), also stated that higher-order thinking skills are thoughts that occur at the level of analysis, synthesis and evaluation, according to Bloom's taxonomy and the level of analysis, evaluation, and creating according to Bloom's revised taxonomy Anderson. Lauren B. Resnick (2000) stated that a higher-order Thinking is a level of thought that involves a mental process of finding answers that have not been determined beforehand and requires proper judgment based on certain criteria.

Based on the opinions of the experts above, it can be stated that higher-order thinking skills are thoughts that involve mental processes, occur at the level of analysis, evaluation, and creation, and these thoughts are activated when individuals face problems, uncertainties, questions, or dilemmas that are not ordinary.

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How to Assess Higher Order Thinking Skills (HOTS)?

Assessing Analysis Level

The level of analysis is used to assess the quality of students' thinking when they break down information into parts with reasons. The techniques to assess the level of analyses are as follows (Brookhart, 2007): 1) Focusing on a question or main idea: Focusing on the main question or idea, or "Finding points" of something, is the main analytical skill in most disciplines; 2) Analyzing an argument or thesis: Analysis skills include identifying basic assumptions, representing the logic or structure of arguments, finding discrepancies if they exist, and assessing similarities or differences in two or more arguments; 3) Comparing and contrasting: Serve students with material or ask them to look for material, and then assign assignments that require students to identify the various elements in it. Then ask them to arrange the elements and consider whether the elements are the same or not.

Assessing Evaluation Levels

To assess evaluation, the teacher needs items or assignments that can assess how students assess materials and methods for their intended purposes. Students can judge the material based on benchmarks. The criteria can be standard (for example, literature, history, scientific) or criteria created by students themselves (in this case the element of creativity is also involved). To assess how well students can evaluate, give some material and ask them to evaluate it for several purposes (Brookhart, 2007).

Assessing Creation Levels

To assess whether students can "create" in Bloom's taxonomic view means assessing whether they can put things differently in new ways, or rearrange existing things to make something new. 'Creating' which is being discussed here in the old Bloom Taxonomy term is called 'synthesis' (Brookhart, 2007).

What is Project Based_Learning (PjBL)?

PjBL is a learning model that is built based on learning activities and authentic assignments that challenge students to solve it. These activities generally reflect the type of learning and work that people do on a daily basis outside the classroom. PjBL is generally carried out by groups of students who work together towards a common goal (Goodman, 2010).

Helle, Tynjälä, & Olkinuora (Helle, Tynjälä, & Olkinuora, 2006) gave the following characteristics for project methods: a) [project] involves the solution of a problem; often determined by students themselves; b) Projects involve student initiatives or student groups, and require a variety of educational activities; c) Usually, a project will produce a product (e.g., thesis, report, design plan, program and computer model); d) The execution of a project often takes a long time; e) The teacher acts as an advisor, not as an autocrat.

Helle, Tynjälä, & Olkinuora put forward a number of project-based method criteria, namely student activity in finding solutions, fostering student initiatives, based on public products, and taking a long time.

According to Blumenfeld et al. (1991), the essence of project-based learning is that project activities are carried out and solved based on the problem. Project-based learning is a learning model that organizes classes with projects (Thomas, 2000). According to the New York Department of Education (New York Department of Education, 2009), PjBL is a learning model that activates students to construct their knowledge independently through various activities. At the same time, the George Lucas Educational Foundation (Foundation, 2014) defines PjBL as a learning model that encourages students to solve

problems through challenges in learning. Although these principles characterize students' projects in general, project-based learning in practice can assume various forms, depending on pedagogical, political or ethical reasons for adoption (Helle et al., 2006).

Based on the opinions of the experts above, it can be stated that Project-based learning is a learning model that empowers students to learn together with a project dynamically determined by students based on real-world learning activities and brings challenges to help students gain a deeper understanding by producing a final product under the goals set together.

The Stages of PjBL

The stages of PjBL in this study that were developed by the Education Foundation are as follows (Foundation, 2014):

Stage 1: starting with an essential question

The questions arranged should not be easy to answer and can lead students to do projects. Such questions are generally open (divergent), provocative, challenging, require higher-order thinking, and are related to student life. The teacher should try to make the topic relevant to students.

Stage 2: designing the project

The purpose of planning is to prepare all activities that can solve and complete projects and determine the appropriate tools and materials.

Stage 3: creating a schedule

The teacher and students collaboratively arrange a schedule of activities in completing the project. Activities at this stage include: (1) making a schedule to completing a project, (2) determining the end time of project completion, (3) helping students plan a new solution, (4) guiding students when they make a solution that is not related to the project, and (5) asking students to make an explanation (reason) about how to manage time. The schedule must be mutually agreed upon so that the teacher can monitor and work on the projects outside the classroom.

Stage 4: monitoring the students and the progress of the project

During the project completion process, the teacher helps students and monitors the implementation of activities using the rubric.

Stage 5: assessing the outcomes

Assessments are carried out to assist teachers in measuring the achievements of the students, play a role in evaluating the progress of each student, provide feedback about the level of understanding that the students have achieved, and assist teachers in developing the next learning strategy.

Stage 6: evaluating the experience

At this stage, the teacher invites students to reflect on the project activities that have ended. In the reflection activity, students are asked to express their feelings and experiences while doing the project and when the project has been completed. Teachers and students discuss together in order to improve results during the learning process so that in the end, a new solution is found to answer the problems raised in the first stage of learning.

Method

The method used in this research is research and development (R&D) and quasi-experimental method. Research and development (R&D) is used to develop PjBL to improve students' higher-order thinking skills in the fifth grade of Islamic primary school.

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PjBL to improve students higher-order thinking skills in this study is developed into 4 (four) steps. The four steps can be described as follows: (1) Conducting a needs analysis of PjBL in Islamic Primary School in Kota Tangerang Selatan. (2) Designing the first draft of PjBL to improve students higher-order thinking skills with stages; (a) Develop a PjBL, (b) Designing student books, (c) Designing teacher books, (d) Designing lesson plans, (e) Develop instruments of assessment of higher-order thinking skills. (3) Validation and Revision of the PjBL; (a) Expert judgement, consists of social studies expert, primary education expert, Instruction model expert, Indonesian language expert, and (b) Trial learning models are carried out in two stages namely one-to-one try-out and small-group try-out. (4) The implementation of project-based learning to improve students higher-order thinking skills in 3 in Islamic Primary School in Kota Tangerang Selatan.

As stated previously, the second method of this study is a quasi-experimental method. The quasi-experimental method is used to find the differences in students' higher-order thinking improvement in social studies using project-based learning models against students who get learn using conventional learning models. This study uses a quasi-experimental design model Nonequivalent Control Group Pretest-posttest, where the experimental group and the control group are not randomly selected (Sugiyono, 2009):116). Data collection techniques in this study use tests and observation instruments. The research was conducted on the 5th-grade students of Islamic Primary Schools Al Mursyidiyyah Kota Tangerang Selatan. The research subjects are 34 students from class Vc as an experimental group and 34 students from class Va as a control group.

Results and Discussion

This study aims to determine the effects of PjBL in social studies learning to improve higher-order thinking of fifth graders in Al Mursyidiyyah Islamic primary school students in Kota Tangerang Selatan. The indicators of higher-order thinking in this study refer to the revised Bloom theory (Krathwohl et al., 2002: 68), which is to analyze, evaluate, and create. Analysis of the results of the research and discussion in this study includes an analysis of student activities in project-based learning and the effects of project-based learning to improve HOTS. This can be described as follows.

PjBL Development in Social Studies in Islamic Primary School

PjBL model in this study has been developed with several stages, namely needs analysis, model draft development, expert evaluation, one-on-one evaluation, and small group evaluation and the field trial the model in Islamic Primary School.

After all the processes are completed properly, the following is the table of project-based learning model stages in social studies learning to improve students' HOTS in the fifth grade of Islamic Primary School.

Tabel 1. PjBL Stages in Social Studies to Improve Higher-Order Thinking Skills in Islamic Primary School Students

No	Stages	Activities
1	Start with essential questions	Teachers start learning by giving stimulus questions. (e.g): a. Why do the surroundings become dirty and seedy? b. What are the effects of a dirty and seedy living environment on the health of the surrounding community? c. What are your plans to deal with the dirty and seedy surrounding community?
2	Designing project planning	a. Heterogeneous group formation 1) Group Name: 2) Names of group members 1..... 2.....

No	Stages	Activities
		3..... 4..... b. What is the theme of your project? c. You can use the learning resources as follows: ▪ Buku Books ▪ Websites ▪ Magazines ▪ Newspaper ▪ Surrounding Environment.
3	Create Schedule	Write down the duration needed to complete your project!
4	Project Implementation	a. Write the problem of the project to be solved! b. Find the answers to the questions above by reading books, magazines, and websites (if possible)! c. Conduct the interviews with the surrounding community (The examples of interview's guidelines are in the appendix)! d. Conduct the observations (The examples of observation guidelines are in the appendix)! e. Discuss the material, observations, and interviews with your group! f. Write the results of your group discussion! g. Arrange the project report of your group!
5	Exhibition and critique	a. Display your group project products in front of the class! b. Present your product in front of the class! c. Give constructive criticism and suggestions for the other group projects! d. The teacher and students determine the best group.
6	Evaluation of the experience	a. How did you feel during the project activities? b. What did you find in this project activities? c. What are the things that you need to improve in the next project activities?
7	Assess the outcomes	The teacher evaluates the Islamic Primary School students social studies learning outcomes by referring to the HOTS questions.

The explanation of Table 1 can be described as follows:

After reviewing theory, model developing, experts evaluation, one to one evaluation, small group evaluation, and conducting field trials, the researchers finally determined the final design of project-based learning model in social studies to improve HOTS of the fifth grade of Islamic Primary School students.

The first step is the teacher asking questions that encourage students to think deeply. The second step is to prepare a project planning. In this study, planning is simplified to form groups, determine project themes, and plan the simple steps to complete the projects. The third step is to set a schedule. The schedule is set simply, which is 4x35 minutes. The limitation of this schedule considers the tight schedule of Islamic Primary School, which must accommodate 5 (five) subjects in accordance with the Ministry of Education and Culture and also religious subjects. The fourth step is the implementation of the project with the examples of activities that can be seen in the table1. In point b is written "if possible" because it considers heterogeneity in the availability of learning resources in Islamic Primary School. The fifth step is the step that becomes one of the emphases of development in this research, namely exhibition and suggestion. In this study, the researchers simplify the exhibition to a limited extent in the classroom by displaying students' project products. Furthermore, teachers and students from other groups are asked to observe and give comments and suggestions honestly and constructively for example, by using good words and not dropping the group being assessed. This simple action is expected to have significant implications to students motivation because they know that other people see, read and evaluate their products. The sixth step is the reflection or evaluation experience. In this step, the researchers replace the step of assessing learning outcomes in the PjBL model of Buck Institute by evaluation experience. The seventh step is the assessment of learning outcomes that are focused on improving students' HOTS in social studies.

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Students Activities in Project-Based Learning in Social Studies

Data on student activities in project-based learning in social studies in this study were obtained by an observation technique—observations made during the implementation of learning. The student activities consist of (1) Listening to the questions asked by the teacher, asking questions before starting the project. (2) Planning the project implementation procedures. (3) Preparing a project completion schedule. (4) Implementing the project based on the plan and schedule that have been predetermined in groups. (5) Presenting the project results of each group in front of the class. (6) Givingsug questions and constructive criticism of the products of other groups' projects. (7) Expressing their feelings and experience during project activities. (8) Discussing their experiences with each other to improve the performance of the learning process in the future and presenting new findings obtained through project activities already done.

Data on The Students' Higher-Order Thinking Skills

To find out the increase in students' higher-order thinking skills can be seen in Table 2.

Table 2. The Acquisition of Average, Gain, and N-Gain of both classes

MI Al Mursyidiyyah	Experiment Class		Control Class	
	Pretest	Post-test	Pretest	Post-test
Average	64,3	83,8	64,6	75,1
% Gain	19,5		10,5	
N-Gain	0,54		0,30	

Based on Table 2, it can be seen that the average score of students' higher-order thinking pretest in the experimental group for social studies is 64.3 out of 100 and the average value of the control class pretest is 64.6 out of 100. This data shows that before the implementation of learning, students in the two classes sampled at Islamic primary school of Al Mursyidiyyah namely the VC class as an experimental group and the VA class as a control group have equivalent HOTS. Meanwhile, the acquisition of the average value of the high-level thinking skills of the experimental class students is 83.8 out of 100 and a posttest average score of 75.1 out of 100.

When we compared to the average score of the experimental class with the average score of the control class, a difference of 19.5% was obtained in the experimental group and 10.5% in the control group. The N-Gain in the experimental group obtained 0.54, which is included in the medium category and 0.30 in the control group, which is also included in the medium category. But the acquisition of N-Gain experiment class is better than the N-Gain of the control class.

To provide a measurable explanation for the difference in increase of higher-order thinking from the two classes, a hypothesis test is needed. However, prior to the hypothesis test, a brief test of the data analysis requirements of the research results, which includes the normality test and the data homogeneity test is first presented. The Data of normality and homogeneity test results can be seen in Table 3.

Normality Test

Table 3. Normality Test of Higher-order Thinking Skills Data

No	Data	Sig.	A	Decision
1	*Pretest* Experiment	0,279	0,05	Normal
2	*Pretest* Control	0,125	0,05	Normal
3	*Postest* Experiment	0,844	0,05	Normal
4	*Postest* Control	0,270	0,05	Normal
5	*N-Gain* Experiment	0,844	0,05	Normal
6	*N-Gain* Control	0,270	0,05	Normal

Based on Table 3, it is known that the pretest, posttest, and N-Gain data of high-level high-skill students in the VC class and Va Class follow the normal distribution. After knowing the normality of the data, then the data homogeneity test is required. Homogeneity test results can be seen in Table 4.

Homogeneity Test

Table 4. Test the Homogeneity of High-Order Thinking Skills Data

No	Data	Sig.	α	Decision
1	Homogeneity of Pretest	0,597	0,05	homogeneous
2	Homogeneity of Postest	0,131	0,05	homogeneous
3	Homogeneity of N-Gain	0,524	0,05	homogeneous

Table 4 shows that the pretest, posttest, and N-Gain data for high-order thinking skills in social studies of the fifth-grade Islamic primary school students come from homogeneous variants.

Because the data from both classes are normally distributed and come from a homogeneous sample variant, the next step is to test the difference between the two averages in od data using the Independent Sample T-Test. The test criteria are if the p value> 0.05, then the hypothesis H_0 is accepted and H_1 is rejected, or there is no significant difference in high-level thinking social studies between the experimental group and the control group. If the p-value <0.05, then the hypothesis H_1 is accepted and H_0 is rejected, or there is a significant difference in the level of thinking ability between the experimental class and the control group. The results of testing the differences in higher-order thinking skills in social studies between the two classes can be seen in Table 5 below.

Hypothesis Testing

Table 5. Different test results of high-level thinking skills in social studies of students with Independent Sample T-Test

T-Test of Students Higher Order Thinking Skills		
Pretest	Posttest	N-Gain
0,810	0,000	0,000

Based on table 5, it can be seen that a significant value of the statistical test results of the pretest data obtained by 0.810 is greater than 0.05 so that H_0 is accepted and H_1 is rejected, and it can be stated that there is no significant difference in students' higher-order thinking ability in social studies before the implementation of learning. The results of T-Test on the students' pretest data shows that these two classes are eligible for being research samples because both classes have equivalent initial abilities. Meanwhile, the test results of the posttest data of the two classes obtained a significance value of 0,000 less than 0.05 so that H_0 was rejected and H_1 was accepted, and it can be stated that there is a difference in the HOTS in social studies of the fifth-grade students at Islamic primary school of Al Mursyidiyyah after the implementation of learning.

Discussion

Students' Activities in PjBL in Social Studies

Students' activities in PjBL require them to think, work together, be disciplined, and be patient because the project implementation is limited by a predetermined time. The observation data on student activities during learning has an average score of 3.5, which is good. This data shows that project-based learning can facilitate and motivate students to be more involved in the learning process. This finding is in line with Chiang & Lee (2016) who conclude in their research that PjBL influences students' learning motivation and problem-

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solving skills. Chiang & Lee emphasized that PBL can increase student motivation. In line with Chiang & Lee, Rismawati, Sunarno, & Sarwanto (2019) and Sasson, Yehuda, & Malkinson (2018) also concluded that PjBL could create a good learning environment for students so that it will positively affect students' attitude, knowledge and HOTS. The positive learning environment will affect motivation, interest and achievement of student achievement as well. In the PjBL model, the learning is built based on learning activities, the reality of daily life inside and outside the classroom, and real assignments that provide challenges for students to solve it (Iwamoto, Hargis, & Vuong (2016); Goodman (2010). In PBL, students learn through real project activities and cooperate with each other. Thus students will explore their knowledge through that collaboration (Amamou & Cheniti-belcadhi, 2018; Iwamoto, Hargis, & Vuong, 2016).

Students' Higher-Order Thinking Skills

The data of students' higher-order thinking skills in social studies is analyzed by using the Independent Sample T-Test. The test result shows that the pretest data of high-order thinking skills in social studies in the experimental group is 64.3 and the control group is 64.6. The acquisition of the two classes does not differ significantly with the T-test result of 0.810. According to Sugiyono (2009), a good pretest result is the one that shows equivalent results.

Meanwhile, the posttest data of the two classes showed a significant difference with a value of 0,000. To see in detail the magnitude of the comparison between the scores of high-level thinking of the two classes, view Table 1 (one) above about the average increase in HOTS of both classes. The data in table 1 shows that the posttest score of HOTS in social studies in the experimental group is 83.8; meanwhile, the posttest score of the control group is 75.1. Thus, based on the acquisition of scores and testing with the Independent simple T-Test, it can be interpreted that the students' HOTS in social studies in the experimental group is higher than the students' HOTS in social studies in the control group.

Then, to complete the explanation in this study, a different test on the gain of the two classes was also carried out. The test result obtained was a significance value of 0,000. This value is smaller than 0,005, so it can be decided that there is a significant difference in the improvement of higher-order thinking in social studies of the two classes. The difference of students' higher-order thinking in social studies after the implementation of learning is caused by the difference in learning models applied in the two classes. The experimental group was carried out using a project-based learning model while in the control group. The conventional learning model was used. This research is in line with research conducted by Suherman et al. (2020) that students' HOTS in PjBL class was better than in non PjBL class. Agreeing with Suherman et al., Eliyasni, Kenedi, & Sayer (2019), Pinho-lopes & Macedo's research (2014) also concluded that Project-Based Learning is useful and successful in promoting higher-order thinking and facilitates in the development of student knowledge. Macedo's also emphasized the acquisition of knowledge as one of the effects of implementing PBL. Furthermore, Muliawan, Nahar, Gerhana, & Mardiyana (2018) also stated that the implementation of project-based learning is one way to improve students' higher-order thinking. Meanwhile Fini et.al (2018) stated that PBL does not only affect students' high-order thinking skills, but also influences students' self-efficacy, teamwork, and communication skills. According to Fini et al's view, the accompanying effect of PBL

implementation is that it can improve self-efficacy, teamwork, and communication skills.

Finally, it can be stated that this research shows that PjBL development in social studies has an effect on the improvement of students' higher-order thinking skills in Islamic Primary School. The previous studies in PjBL were all done in higher and secondary education. Meanwhile, this study was conducted in the fifth-grade students of Islamic primary school and in social studies education.

Conclusions

From this research, it can be concluded that the findings of this study show that the development of PjBL in social studies has an effect on improving students' higher-order thinking skill in Islamic primary school. Furthermore, students are actively involved in project-based learning. Data from observations of student activities during learning took place an average score of 3.5, which is included in the good category. The novelty of this research is the development of PjBL in social studies can improve students' higher-order thinking skills of Islamic Primary School.

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