Development of Higher Order Thinking Skills Through Project-Based Learning Methods

Syahraini Tambak[1]*, Rahmayani Siregar[2]

Department of islamic Religious Education, Faculty of Islamic Religion, Universitas Islam Riau, Indonesia

The purpose of this study was to analyze the effect of the project-based learning model on the high-level thinking skills of students of the Islamic Religious Education Study Program, Islamic University of Riau. This type of research is quantitative with a correlation approach. This study involved 259 samples. Data collection techniques using questionnaires, documentation and data analysis techniques using normality tests, descriptive and simple linear regression. The results showed that the level of mastery of the project-based learning model in student perceptions and students' higher-order thinking skills was in the high category. significance 0.000. The big influence is moderate (0.440 or 44%). The Project-based learning model influences the high-level thinking skills of students of the Islamic Religious Education Study Program at the Islamic University of Riau. This research has implications for the theory of higher order thinking skills in Islamic Higher Education.

Keywords: Project-Based Learning Model, Higher Order Thinking Skill, Islamic Higher Education

INTRODUCTION

Higher-order thinking skills are important things that must be possessed by every student, because they are the key to success in training their ability to manage information, solve problems, solve high-level questions in the world of education. The literature building shows that higher order thinking can connect, collect, convey, organize, and transform knowledge in solving a problem in a new situation by thinking critically and creatively. Setiawan et al., (2015); Tambak et al., (2022) According to Istiyono et al., (2012), the ability to think at a high level in each student can stimulate, evaluate and analyze so that students are able to think deeply about the material they are studying and develop it.

Educational institutions are required to prioritize the development of higher order thinking in the policies that cover them. High-level thinking can develop knowledge, expertise in describing and solving problems. Higher-order thinking needs to be applied in the learning process to prepare students when facing complications and facing challenges in the future. Permendikbud (2014); Tambak & Sukenti (2020). According to Meiriza & Sudarmin (2015), through higher-order thinking involves mental activity to explore creative, complex experiences in achieving a goal in acquiring knowledge at the levels of evaluative, synthetic and analytical thinking. Higher-order thinking skills are not just memorizing facts or saying something exactly as someone else has said, but we must also have curiosity about science.

So far there have been several studies examining higher order thinking skills in Indonesia. Meiriza & Sudarmin (2015) examined the application of self-assessment to analyze students' high-level thinking skills using a mixed methods approach, a combination of quantitative and qualitative. This study saw that there was no emphasis on students' higher order thinking skills in learning, making decisions and still lacking in problem identification skills. Research on higher-order thinking skills was also carried out by Albab, Koes H & Zulaikah (2016) who examined the effect of e-scaffolding in think pair share on high-order thinking skills in particle dynamics with a quantitative approach. This study saw that students had difficulty understanding Newton's laws contained in particle dynamics. Diani, Asyhari & Julia's (2018) research on the effect of the reading, mind mapping and sharing (RMS) model on students' high-level thinking skills on the subject of discussing impulses and momentum with a quantitative approach. This study saw that the students' lack of ability to accept the material that had been conveyed by the teacher. Research by Mayasari & Adawiyah (2015) at Banjarbaru public high school examined the effect of problem-based learning models in biology learning on higher-order thinking skills and learning outcomes with a quantitative approach. This study saw that the lack of ability of students to recycle waste efficiently and effectively in order to preserve nature in the school environment. Research by Nurhayati & Angraeni (2017) examined the analysis of students' higher order thinking skills in solving optical concept problems through a problem-based learning model with a quantitative approach. This study saw that the lack of students' ability to solve high-level questions was due to the fact that in the learning process they did not develop students' higher-order thinking skills, even though students were individuals who were already at the level of intellectual development of high-level formal operations.

Although there have been various researchers who have examined higher-order thinking skills, this problem still occurs in the world of education. This also happens in the Islamic Religious Education Study Program (PAI) of the Faculty of Islamic Studies (FAI) at the Islamic University of Riau (UIR), where there are some students who do not develop high-order thinking skills. It was found that some students were less able to answer high-level questions and solve a problem even though the lecturers always provided good learning, solutions in solving problems, as well as their friends who always provided motivation and good guidance. Another thing was found by some students who were lacking in encouraging themselves to develop and practice higher-order thinking skills. There are some students who are not careful, are not persistent in thinking and answering questions that are relatively complicated. Prasetyani et al., (2016)

The problem of low-level thinking skills in students is assumed to be overcome by using a project-based learning model by lecturers in lectures. According to Rahayu, Purwanto & Hasanah (2017) one of the factors that influence higher-order thinking skills is realizing the role of the lecturer through a project-based learning model to encourage students to be able to answer high-level questions and be able to solve a problem. Besides that, there is research by Sambite et al., (2019) that high-level thinking skills are influenced by project-based learning based on simple teaching aids.

So based on this, this research examines higher-order thinking skills by providing a project-based learning model to students in the Islamic Religious Education Study Program (PAI) of the Faculty of Islamic Religion (FAI) Islamic University of Riau (UIR). Strengthening the project based learning model to develop higher order thinking skills is something new that has never been studied by researchers in the world of Indonesian Islamic Higher Education. Therefore this problem is very urgent to be examined in a thesis entitled "the effect of project-based learning models on the high-level thinking skills of students of the Islamic Religious Education Study Program (PAI) Islamic University of Riau (UIR)".

The focus of this research is; What is the level of mastery of the lecturer's project based learning model in the perception of students of the Islamic Religious Education Study Program at the Islamic University of Riau (UIR)?; What is the level of high-order thinking skills of students of the Islamic Religious Education Study Program at the Islamic University of Riau (UIR)? : How does the project based learning model influence the high-order thinking skills of students of the Islamic Religious Education Study Program at the Islamic University of Riau (UIR)?

METHOD

This study uses quantitative research, with a correlation approach. Correlation is a study that involves collecting data to determine whether there is a relationship between two or more variables. Namely the independent or dependent variable. Arikunto (2006). This research was conducted at the Islamic Religious Education Study Program Faculty of Islamic

Religion Universitas Islam Riau, Jalan Kaharudin Nasution No. 113 Pekanbaru, Riau. This research was conducted for four (4) months starting from August to November 2022.

The population is a generalized area consisting of subjects and objects that have certain characteristics and qualities determined by the researcher to be studied and then conclusions drawn. Thus, the population is a group of people, objects and events that have certain characteristics and are used as research objects. Suryani & Hendryadi (2015) The population of this study only examined 2018 and 2019 class students, totaling 444 active students. Student batches of 2017 and 2016 are not included because they are in the completion stage, and some have even finished. Class of 2020 students are not included because they start their lectures online.

The sample is part of the number and characteristics possessed by the population. Sugiyono (2012) The sample use technique uses proportionate stratified random sampling. Proportionate stratified random sampling is a sampling technique in heterogeneous populations by taking samples from each sub-population whose number is adjusted to the number of members of each sub-population randomly or haphazardly. Because the population is very large, the researchers took a sample using the Slovin formula with a 4% error margin as follows: 259 students.

According to Siregar (2013) a questionnaire is an information gathering technique that allows analysis to study the behavior, attitudes, beliefs and characteristics of some of the main people in an organization who are usually deceived by the existing system. The questionnaire was distributed for one week starting from Thursday 12 August 2021 to Wednesday 25 August 2021. Due to the Covid 19 pandemic, the questionnaire was distributed online via the Google form. In this case a questionnaire distributed to students of the 2018 & 2019 batch of the Religious Education Study Program.

The data analysis technique used is descriptive. According to Suryani & Hendryadi (2015) descriptive in general is only giving a description of the actual state of the data without intending to make generalizations from the data. In descriptive statistics includes the activities of collecting data, processing data, and presenting data. Presentation can use tables, diagrams, sizes, and pictures. The purpose of this descriptive is to make a systematic description of factual and accurate data regarding facts and relationships between the phenomena being investigated or researched. Riduwan & Sunarto (2019)

On the other hand is a simple linear regression. Hypothesis testing using simple regression analysis is used to find out how the dependent (bound) variable can be predicted (forecast) through the independent (free) variables partially or simultaneously (simultaneously). Regression analysis can be used to decide whether to increase or decrease the independent variable. In the regression model, the independent variable explains the dependent variable. In simple regression analysis, the relationship between variables is linear. Where, changes in variable X will be followed by changes in variable Y permanently. Mathematically, a simple linear regression analysis model can be described as follows. Sugiyono (2011)

RESULT AND DISCUSSIONS

The first theme that became the focus of this research was mastery of the project-based learning method by lecturers of Islamic education at the Faculty of Islamic Religion, Islamic University of Riau. Table 1 shows that 243 students or 93.8% think that Islamic religious education lecturers master the use of project-based learning methods (mean = 103.86, sd = 9,868) are in the high category. This illustrates that Islamic religious education lecturers have mastered the project-based learning method in lectures.

[Table 1 about here.]

The second theme relates to the high-level thinking skills of students of the Islamic religious education study program, the Faculty of Islamic Studies, Riau Islamic University. Table 2 shows that 246 or 95% of students' high-order thinking skills (mean = 54.47, sd = 7.532) are in the high category. This illustrates that students of the Islamic religious education study program, Faculty of Islamic Religion, Islamic University of Riau have very highly level thinking skills in lectures.

[Table 2 about here.]

The third theme relates to the effect of the project-based learning method on students' higher-order thinking skills. Table 3 using simple linear regression shows that there is an effect of the project-based learning model on the high-level thinking skills of students of the Islamic Religious Education Study Program, Islamic University of Riau. This is indicated by the value (F = 202.179) and probability value (0.000) which is smaller than the significance value (0.005) (P <0.005). Based on this, the research hypothesis which states that there is an influence of the project-based learning model on the high-level thinking skills of students of the Islamic religious education study program at Riau Islamic University is accepted.

[Table 3 about here.]

Table 4 clearly illustrates the effect of the project-based learning model on the high-level thinking skills of students of the Islamic Religious Education Study Program at the Islamic University of Riau by 0.440 or 44%, this is indicated by the value (R Square + 0.440). The R Square value of (0.440) or (44%) illustrates that the effect of the project-based learning model on the high-level thinking skills of students of the Islamic Religious Education Study Program, Islamic University of Riau is in the moderate category. This shows that the level of influence of the project-based learning model on the high-order thinking skills of students of the Islamic Religious Education Study Program at the Islamic University of Riau is moderate.

[Table 4 about here.]

Furthermore, table 5 can show a prediction of the effect of

the project-based learning model on higher order thinking skills. The table coefficients show Nilan (constant) = 14.219 and a B value of 0.506 (X) and a significant level of 0.000 (X). From the coefficients table, a simple linear regression equation is obtained, namely: $\hat{Y} = a + bX = 1.880 + 0.506X$, the meaning of the equation is 1.880. The regression coefficient is 0.506 (X), stating that when the project-based learning model is used, it is predicted to be able to develop higher-order thinking skills by 0.506 (50.6%). Likewise, if the project-based learning model is not used, it is also predicted that it will automatically reduce higher-order thinking skills by 0.506 (50.6%).

[Table 5 about here.]

The results of the study describe the level of mastery of the project-based learning model by the lecturers' perceptions of students of the Islamic Religious Education Study Program at the Islamic University of Riau in the high category. Meanwhile, students' high-level thinking skills are also in the high category. Based on the data analysis carried out, it can be seen that there is a significant influence between the project-based learning model on the high-level thinking skills of students of the Islamic Religious Education Study Program, Islamic University of Riau. This is in accordance with the simple linear regression test which states that if the significant value is less than 0.05, namely 0.000 <0.05, it means that there is an influence of the project-based learning model on the high-level thinking skills of students of the Islamic Religious Education Study Program, Islamic University of Riau. This is based on the ANOVA table obtained a significance probability value of 0.000.

The data obtained also shows that higher order thinking skills are affected by 44% by the project-based learning model. This is based on table summary. To find out the level of relationship between project-based learning model variables and higherly level thinking skills can be seen in the Summary table. The table displays the value of the correlation coefficient (R) = 0.664 which shows a moderate relationship between the project-based learning model and the variable higher order thinking skills.

The results of the study illustrate that the project-based learning model is able to influence the high-level thinking skills of students of the Islamic Religious Education Study Program, Islamic University of Riau. The project-based learning model involves students on a problem that provides a project and then students determine answers to problems that have been submitted in finding their own so that in this way students are able to gain complete knowledge by using new ideas obtained both theory, concepts, information developed into something new and different.

Innovative learning focuses students with the ultimate goal in learning, namely students produce a product, this model requires students to be active. In its application, students can ask the teacher so that there is discussion or interaction between the teacher and students, the teacher is required to provide input, support if students experience difficulties during the learning process. Siregar (2018) Faturahman (2015) the project-based learning model can help students to develop mastery of project-based learning

involving students and teachers to learn to retrieve information and demonstrate their knowledge, then implement it in the real world.

The project-based learning model influences higher order thinking skills. The results of this study were reinforced by researchers Sambite et al., (2019) who revealed that the project-based learning model had an effect on higher-order thinking skills. So that the project-based learning model is better used in improving higher-order thinking skills. Rahayu etal., (2017). According to Fathurrohman (2015) project-based learning is a learning model that involves a project in the learning process. Projects carried out by students can be in the form of individual or group projects and carried out within a certain period of time collaboratively, producing a product whose results will be presented.

According to Saenab et al., (2019) project-based learning is a model that can be applied in education, because this model has a very strong talent for creating experiences for students in the world of work and in the workplace, the experience meant here is experience that can train to work with others as well as possible. According to Istarani (2014) project-based learning is an innovative learning model or approach, which emphasizes contextual learning through complex activities. The focus of learning lies on the core concepts and principles of a discipline of study, involving students and investigations of problem solving and other meaningful task activities, giving students the opportunity to work autonomously to construct their own knowledge and culminate in producing real products.

According to Sani (2019) project-based learning is to broaden the skills and knowledge obtained by making projects related to teaching materials and students have competence, and it is best if the project is made related to community needs. According to Suranti et al., (2016) the project-based learning learning model is a productive learning related to students and teachers, teachers as facilitators and motivators, namely those who encourage students to be able to carry out examinations and carry them out by working together in observing and carrying out projects that implement their knowledge to get new things and be able to use technology and also be able to solve problems. According to Daniel (2016) project-based learning are assignments that are distributed according to problems or questions that challenge, engage students in compiling, solving problems, obtaining decisions, or evaluating activities, giving rights to students autonomously with time within the limit period and ending after do percentages. In this lesson students play an active role in solving a problem and are observant in making decisions.

Sulaeman (2020) suggests that the project-based learning model is giving assignments to students that must be completed within a predetermined time limit, starting from preparation, data collection, management, formation and presentation of a product to be presented. This learning model currently plays an important role in developing students' higher-order thinking skills.

According to Maula et al., (2014) project-based learning is a learning model which is one that uses real world problems as a framework for students to be able to learn by thinking critically, thinking creatively, thinking at a higher level and problem-solving skills as well. acquire fundamental

knowledge and design of learning materials. According to Ardianti et al., (2017) project-based learning is a learning model with special characteristics in the presence of an activity to design and implement a project in which there is to produce a product. This learning model adds to the learner's experience of using all the talents he has to solve all the problems in completing the tasks he has.

According to Fitriani et al., (2017) higher order thinking skills or HOTS are critical and creative thinking skills, such as decision making, problem solving, fluency, observing, exploring, classifying, developing hypotheses, and metacognitive which includes awareness, self-monitoring and self-regulation. High-level thinking skills are high-level thinking at the top of Bloom's cognitive taxonomy which can equip students to transfer knowledge, namely analyzing, evaluating and creating.

According to Sulaeman (2020) higher order thinking skills are intersections between the three components of the top cognitive process dimensions (analyzing, evaluating, and creating) and the three highest dimensional components (conceptual, procedural and metacognitive). Higher-order thinking skills are interrelated with the cognitive, affective and psychomotor domains which form a single unit in the learning process. According to Purbaningrum (2017) higher order thinking ability is a capacity above the information provided, with a critical attitude to evaluate, has metacognitive awareness and has problem solving abilities. Thinking at a high level here is higher than just memorizing facts or telling someone information.

According to Sani (2019) higher-order thinking skills are abilities that include logical, critical, creative, reflective and metacognitive thinking. This skill is needed to solve problems and make decisions, this skill will occur if someone has information stored in memory and obtains new information, then organizes this information into one goal. According to Yulianis (2019) the ability to think at a higher level is the skill to analyze, evaluate and create some of the knowledge that a person acquires. Higher-order thinking skills are skills in managing information in order to be able to handle sizable challenges. According to Nugroho (2018) Higher-order thinking skills are changing ways of thinking even higher than finding facts, memorizing facts or applying rules, procedures and formulas. This skill requires us to do something based on facts and be able to apply it to find new solutions to problems. According to Setiawan, Dafik &

Lestari (2014) higher order thinking skills are the ability to connect, manipulate and transform existing knowledge and experience to think critically and creatively in an effort to make decisions and solve problems in new situations. According to Helmawati (2020) high-level thinking skills are the ability to stimulate students to analyze, interpret and even be able to manipulate previous information so that it is not monotonous. Higher-order thinking skills are used for someone to receive new information, store it and use it to solve problems based on situations.

CONCLUSION

Based on the results of data processing that has been done, it can be concluded that, firstly, the level of mastery of the project-based learning model of lecturers in the perception of students of the Islamic Religious Education Study Program, Islamic University of Riau is in the high category. The two levels of high-order thinking skills of students of the Islamic Religious Education Study Program at the Islamic University of Riau are in the high category. Third, there is the influence of the project-based learning model on the high-level thinking skills of students of the Islamic Religious Education Study Program at the Islamic University of Riau with a significant value of 0.000. The influence of the use of project-based learning models by lecturers on the high-level thinking skills of students of the Islamic Religious Education Study Program at the Islamic University of Riau is in the moderate category (0.440 or 44%) which is in the range (0.40-0.599), while the remaining 56% influenced by other factors. It can be predicted that if the project-based learning model is used it will contribute to increasing higher order thinking skills by 0.506 or 50.6%. Conversely, if the project-based learning model is not used, the students' higher order thinking skills decrease by 0.506 or 50.6%.

ACKNOWLEDGEMENT

REFERENCES

Abdullah, Ridwan Sani. "Pebelajaran Berbasis HOTS (Higher Order Thinking Skill)." Tanggerang: Tira Smart (2019).

Albab, Akhmad Fauzul, and Siti Zulaikah. "Pengaruh E-Scaffolding Dalam Think Pair Share Terhadap Kemampuan Berpikir Tingkat Tinggi Dinamika Partikel." Jurnal Pendidikan Sains 4.1 (2016): 1-8.

Ardiana, Meiriza, and Sudarmin Sudarmin. "Penerapan Self-assessment untuk Analisis Keterampilan Berpikir Tingkat Tinggi Siswa." Jurnal Inovasi Pendidikan Kimia 9.1 (2015).

Ardianti, Sekar Dwi, Ika Ari Pratiwi, and Mohammad Kanzunnudin. "Implementasi project-based learning (pjbl) berpendekatan science edutainment terhadap kreativitas peserta didik." Refleksi Edukatika: Jurnal Ilmiah Kependidikan 7.2 (2017).

Ariyana, Yoki, R. Bestary, and R. Mohandas. "Buku pegangan pembelajaran berorientasi pada keterampilan berpikir tingkat tinggi." Direktorat Jenderal Guru dan Tenaga Kependidikan Kementerian Pendidikan dan Kebudayaan

Hak (2018).

Burhan, Bungin. "Metodologi Penelitian Kuantitatif Komunikasi, Ekonomi, dan Kebijakan publik serta ilmu-ilmu sosial lainnya." Jakarta: Prenada Media (2005).

Daniel, Farida. "Kemampuan berpikir kritis siswa pada implementasi project-based learning (PJBL) berpendekatan saintifik." JPMI (Jurnal Pendidikan Matematika Indonesia) 1.1 (2016): 7-13.

Diani, Rahma, Ardian Asyhari, and Orin Neta Julia. "Pengaruh model RMS (reading, mind mapping and sharing) terhadap kemampuan berpikir tinggi siswa pada pokok bahasan Impuls dan Momentum." Jurnal Pendidikan Edutama 5.1 (2018): 31-44.

Effendy, Khasan. "Memadukan Metode Kuantitatif dan Kualitatif." Bandung: Indra Prahasta (2010).

Fitriani, Wulandari, Fauzi Bakri, and Sunaryo Sunaryo. "Pengembangan lembar kerja siswa (lks) fisika untuk melatih kemampuan berpikir tingkat tinggi (high order thinking skill) siswa SMA." WaPFi (Wahana Pendidikan Fisika) 2.1

(2017).

Helmawati, S. E. "Pembelajaran Dan Penilaian Berbasis Hots: Higher Order Thinking Skill." (2020).

Hendryadi, dan Suryani. "Metode Riset Kuantitatif, Edisi Pertama." (2015).

Jagantara, I. Made Wirasana, Putu Budi Adnyana, and Ni Luh Putu Manik Widiyanti. "Pengaruh model pembelajaran berbasis proyek (Project Based Learning) terhadap hasil belajar biologi ditinjau dari gaya belajar siswa SMA." Jurnal Pendidikan dan Pembelajaran IPA Indonesia 4.1 (2014).

Maharani, Ade Dewi, and Silvi Susanti. "Analisis Kemampuan Berpikir Tingkat Tinggi Pada Materi Sistem Pertahanan Tubuh Siswa Kelas XI SMA."

Mayasari, Ria, and Rabiatul Adawiyah. "Pengaruh model pembelajaran berdasarkan masalah pada pembelajaran biologi terhadap hasil belajar dan keterampilan berpikir tingkat tinggi di SMA." JPBI (Jurnal Pendidikan Biologi Indonesia) 1.3 (2016).

Milla Minhatul Maula, Maula, Prihatin Jekti Prihatin, and Fikri Kamalia Fikri. "Pengaruh model PjBL (Project-based learning) terhadap kemampuan berpikir kreatif dan hasil belajar siswa pada materi pengelolaan lingkungan." (2014).

Muhammad, Fathurrohman. "Model-Model Pembelajaran Inovatif." Yogyakarta: Ar-Ruzz Media (2015). Istarani, I. "Model Pembelajaran Inovatif." (58)

Muslim, Siska Ryane. "Pengaruh Penggunaan Model Project Based Learning Terhadap Kemampuan Pemecahan Masalah Matematik Peserta Didik SMA." SJME (Supremum Journal of Mathematics Education) 1.2 (2017): 88-95.

Nugroho, R. Arifin. "HOTS (Kemampuan Berpikir Tingkat Tinggi: Konsep, Pembelajaran, Penilaian, dan Soal-soal)." Jakarta: PT Gramedia Widiasarana Indonesia (2018).

Nurhayati, Nurhayati, and Lia Angraeni. "Analisis kemampuan berpikir tingkat tinggi mahasiswa (higher order thinking) dalam menyelesaikan soal konsep optika melalui model problem-based learning." Jurnal Penelitian & Pengembangan Pendidikan Fisika 3.2 (2017): 119-126.

Pratama, Hendrik, and Ihtiari Prastyaningrum. "Pengaruh model pembelajaran project-based learning berbantuan media pembelajaran pembangkit listrik tenaga mikrohidro terhadap kemampuan berpikir kritis." Jurnal Penelitian Fisika Dan Aplikasinya (JPFA) 6.2 (2016): 44-50.

Purbaningrum, Kus Andini. "Kemampuan berpikir tingkat tinggi siswa smp dalam pemecahan masalah matematika ditinjau dari gaya belajar." JPPM (Jurnal Penelitian dan Pembelajaran Matematika) 10.2 (2017).

Ramadhani, Irham, and Motlan Sirait. "Efek model pembelajaran berbasis proyek dengan strategi think talk write dan kreativitas ilmiah terhadap hasil belajar kognitif tingkat tinggi siswa SMA pada pelajaran fisika." Jurnal Pendidikan Fisika 4.1 (2015): 17-24.

Riduwan, Sunarto. "Pengantar Statistika untuk penelitian pendidikan, sosial, ekonomi, komunikasi dan bisnis." Cetakan Ke-4 Bandung: Alfabeta (2011).

Saenab, Sitti, Sitti Rahma Yunus, and Husain Husain. "Pengaruh Penggunaan Model Project Based Learning Terhadap Keterampilan Kolaborasi Mahasiswa Pendidikan IPA." BIOSEL (Biology Science and Education): Jurnal Penelitian Science dan Pendidikan 8.1 (2019): 29-41.

Sarwono, Jonathan. "Analisis data penelitian menggunakan SPSS." (2006).

Setiawan, Harianto, and Nurcholif Diah Sri Lestari Dafik. "Soal matematika dalam PISA kaitannya dengan literasi matematika dan keterampilan berpikir tingkat tinggi." Prosiding Seminar Nasional Matematika, Universitas Jember. 2014.

Syofian, Siregar. "Metode Penelitian Kuantitatif dilengkapi dengan perbandingan perhitungan manual & SPSS." Jakarta: Prenadamedia Group (2013).

Sucipto, Sucipto. "Pengembangan ketrampilan berpikir tingkat tinggi dengan menggunakan strategi metakognitif model pembelajaran problem-based learning." JP (Jurnal Pendidikan): Teori dan Praktik 2.1 (2017): 77-85.

Sugiyono. "Statistika untuk penelitian." Bandung: CV. Alfabeta (2006).

Sulaeman, Maman. "Aplikasi project-based learning (PBL) untuk membangunketerampilan berpikir kritis dan kreatif siswa." Depok: Bioma Publishing (2020).

Sunyoto, Danang. "Analisis regresi dan uji hipotesis." Yogyakarta: Caps (2011).

Suranti, N. M. Y. "Gunawan, dan Sahidu, H.(2016). Pengaruh Model Project Based Learning Berbantuan Media Virtual Terhadap Penguasaan Konsep Peserta didik pada Materi Alat-alat Optik." Jurnal Pendidikan Fisika dan Teknologi 2.2: 73-79.

Tambak, S., & Sukenti, D. "Strengthening Islamic Behavior and Islamic Psychosocial in Developing Professional Madrasah Teachers." Jurnal Cakrawala Pendidikan, 39. 1 (2020): 65-78. https://doi.org/10.21831/cp.v39i1.26001.

Tambak, S., Ahmad, M. Y., & Sukenti, D. "Strengthening Emotional Intelligence in Developing the Madrasah Teachers' Professionalism (Penguatan Kecerdasan Emosional dalam Mengembangkan Profesionalisme Guru Madrasah)." Akademika 90. 2 (2020): 27-38. https://doi.org/10.17576/akad-2020-9002-03.

Tambak, S., Hamzah, H., Ahmad, M. Y., Siregar, E. L., Sukenti, D., Sabdin, M., & Rohimah, R. B. "Discussion method accuracy in Islamic higher education: the influence of gender and teaching duration." Jurnal Cakrawala Pendidikan 41. 2 (2022): 507-520. http://doi.org/10.21831/cp.v41i2.40644

Tambak, S., Mahfud, C., Latipah, E., & Sukenti, D. "Professional Madrasah Teachers in Teaching: The Influence of Gender and the Length of Certification of Madrasah Teachers." Dinamika Ilmu: Jurnal Pendidikan 21. 2 (2021): 417-435. https://doi.org/10.21093/di.v21i2.3527.

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

.

LIST OF TABLE

TABLE 1 | Mastery Of Project-Based Learning Model Level

Description	Low Stage		High Stage		Mean	Standar Deviasi	Kategori
	N	%	N	%			
Model Project Based Learning					103,86	9,868	Tinggi
	16	6.2	243	93.8			

TABLE 2 | Higher Order Thinking Skill Level

Description	Low Stage		High Stage		Mean	Standar Deviasi	Kategori
	N	%	N	%			
Higher Order Thinking					54.47	7.532	Tinggi
	11	4.2	246	95			

TABLE 3|The Influence Of Project-Based Learning Method on Higher Order Thinking

Model	Sum of Squares	Df	Mean Square	F	Sig
Regression	6441.869	1	6441.869	202.179	.000[b]
Residual	8188.602	257	31.862		
Total	14630.471	258			

TABLE 3|Islamic Education Journal / halaqa.umsida.ac.id/index.php/

TABLE 4 | Magnitude of Project-Based Learning Method on Higher Order Thinking

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.664[a]	.440	.438	5.645

TABLE 4 | Magnitude of Project-Based Learning Method on Higher Order Thinking

TABLE 5| Coefficients

Model	Unstandardized Coefficient		Standardized Coefficients	t	Sig
	B	Std. Error	Betta		
Model Project Based Learning	1.880	3.715		.506	.613
	.506	.036	.664	14.219	.000