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Effect of project-based learning on students' collaboration skills of Islamic Religious Education Department students at Singaperbangsa Karawang University

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ABSTRACT

This research consists of two variables: project-based learning and student collaboration abilities. This study aims to describe the results of project-based learning, students' collaboration skills, and the influence of both in correlational relationships. The population in this study were all students of the Bachelor of Islamic Education Study Program at Singaperbangsa Karawang University, and the sample was 2nd-semester students. The research method used was correlational research with a quantitative approach. This method was chosen to identify the relationship between project-based learning and students' collaboration skills. Data related to project-based learning experiences and students' collaboration skills were collected using a questionnaire instrument, compiled using a Likert scale, and data analysis techniques using descriptive and inferential analysis. The results of this study show that 13% of students' Project-Based Learning is in a low category, 69% is in the medium category, and 19% is in the high category, so it can be concluded that the average Project-Based Learning of UNSIKA Islamic Religious Education students is in the medium category. Students' collaboration skills are 24% in the low category, 59% in the medium category, and 17% in the high category, so it can be concluded that the average UNSIKA Islamic Religious. Education Student's Collaboration skills are in the medium category. The coefficient correlation score is 0.000 < 0.05, so it can be concluded that H0 is rejected and Ha is accepted, which means that "There is an influence of project-based learning (X) on students' collaboration skills (Y)." From the results of the analysis, it is known that the value of R Square = 0.24; it can be concluded that the effect of project-based learning (X) on students collaboration skills (Y) of Islamic Religious Education Department students at Singaperbangsa Karawang University is 24.2%.

In comparison, 85.8% is influenced by other variables that may not be a variable of this study.

Keywords: Project-Based Learning; students collaboration ability; Islamic religious education

1. INTRODUCTION

Education is a means of building a nation. Human development can be realized if education is carried out correctly. In the modern era, various phenomena, including selfish attitudes, occur in people's lives. In today's modern era, it is common for individuals to prioritize their own personal needs, desires, and interests over shared interests or collective welfare (Rukajat & Makbul, 2022b). This can be seen in various aspects of people's lives, such as social interactions, decision-making, and attitudes towards social issues. We still remember that in the 2021-2022 period, the COVID-19 pandemic, people with purchasing power panicked about masks, water, medicines, and other basic needs. It is exacerbated by unscrupulous distributors hoarding staples that should be distributed but not channeled, as if without considering the negative impact on society in general, especially during a pandemic. This phenomenon gives us an indication that there are still fundamental things that need to be addressed in our education.

In a modern, often individualistic society, egocentrism can become the dominant behaviour because the primary focus of individuals is achieving personal success, self-satisfaction, and fulfillment of their desires (Kariadi & Suprapto, 2018). A modern society driven by competition and consumerism can also encourage egocentrism, in which individuals tend to be self-oriented in pursuing material success or social status (Nur Aini Farida, 2022).

With this inequality of problems, it is in line if one of the orientations in education is to develop skills and competencies relevant to the needs of the world of work and everyday life (Rukajat & Makbul, 2022a). This involves improving literacy, collaboration, numeracy, critical thinking, creativity, communication, digital, and social and emotional skills. Likewise, in education carried out at the higher education level, the collaboration abilities of students must be familiarized with various learning formats. One expected target is increasing collaboration skills (Agus Suprijono, 2009). Several efforts have been made, namely by implementing cooperative learning in class, case method learning in groups, and project-based learning.

From the results of a preliminary study through observation and interviews conducted by researchers in the UNSIKA Islamic Religious Education Department students, it is known that project-based learning has been required since the odd semester of 2022/2023 and has generally been implemented by lecturers in its realization. However, until now, research on the correlation between project-based learning and students' collaboration skills is still very minimal. Thus, the specific objectives of this study are to find out an overview related to project-based learning, an overview of students

collaboration skills (Makbul et al., 2022) as well as the effect of project-based learning on the collaborative skills of UNSIKA Islamic Religious Education department students so that the results of this study are expected to be able to provide an overview of the correlation between project-based learning variables and students collaboration skills.

Project-based learning in this study involves students in real projects or tasks relevant to real-life or real-world contexts (Slameto, 2010). In project-based learning, students learn theory and concepts and actively solve problems, investigate issues, and produce products or works that the community can appreciate. (Izzati, 2014). Meanwhile, student collaboration skills refer to cooperation between students in achieving common goals in the context of learning or projects (Hairunisa et al., 2019). This collaboration involves positive interaction, exchange of ideas, practical communication, and sharing responsibilities among student group members (Adityawarman, 2022)

The theory used as the basis for learning social constructivism emphasizes the importance of social interaction in learning. Project-based learning allows students to collaborate, communicate, and interact with team members and other stakeholders (Saenab et al., 2019). Through this social interaction, students can build mutual understanding and support and learn from each other. This theory, put forward by Lev Vygotsky, argues that one's learning and cognitive development does not occur individually but through social interaction (Suseno et al., 2022)

Vygotsky emphasized that individuals learn through collaboration in their social and cultural context. Therefore, Vygotsky emphasized the critical role of the social environment in shaping personal understanding and knowledge. Thus, collaboration is very much determined by the design of learning and the learning environment in which students study.

Therefore, in this study, hypotheses can be formulated as a theoretical review, which has been explained that "there is an influence of Project-Based Learning on the Collaborative skills of Students of Islamic Religious Education Department, Singaperbangsa University, Karawang." The formulation of this hypothesis will help direct research by providing a clear focus and objectives guiding researchers in choosing instruments, measurement methods, or data collection techniques appropriate for testing the proposed hypotheses. Thus, researchers can use statistics or other analytical techniques to test the truth—alternatively, the significance of the relationship between the variables studied.

2. METHODS

This study uses a quantitative approach with the correlational method. The correlational method was chosen to study the relationship between project-based learning variables and students' collaboration skills (A. et al., 2015). This method focuses on measuring the level of relationship between these variables without any attempt to determine causation between the two, as well as to determine whether there is a

relationship between the two variables and how strong the relationship is (Sugiyono, 2009).

The researcher collects data about the two studied variables in the correlational method. (Azmil, 2014). Then, statistical analysis calculates the correlation coefficient, which indicates the degree of correlation between the two variables. The most commonly used correlation coefficient is the Pearson correlation coefficient, which measures the degree of linear relationship between two variables. The results of the correlation analysis can show whether there is a positive relationship (positive correlation value), a negative relationship (negative correlation value), or no relationship (correlation value close to zero) between the two variables. The correlation value can also indicate how strong the relationship is.

The population in this study came from all students of the UNSIKA Islamic Religious Education department, consisting of 1140. To collect samples in the study, a purposive sampling technique was used by taking second-semester students as samples, assuming that project-based learning had been implemented since these students' entered college; second-semester students comprised seven classes, representing twenty students in each class.

The data collection techniques and research instruments selected to collect information related to project-based learning variables and students' collaboration skills using survey techniques involve collecting data through questionnaires prepared on a Likert scale, which are arranged based on derivatives ranging from conceptual, operational, aspect, and indicator definitions to the point of the question. As for the data analysis techniques using descriptive and inferential analysis.

3. RESULTS AND DISCUSSION

Project-Based Learning Descriptive Analysis

Research on 140 respondents using a survey as a data collection technique with a questionnaire instrument compiled based on a Likert scale, the results of data collection can be described as follows:

Table 1. Results of Project-Based Learning Descriptive Analysis with SPSS

Descriptives X				
			Statistics	std. Error
Project Based Learning	Means		58.9929	,40973
	95% Confidence Interval for Mean	LowerBound	58.1827	
		Upper bound	59.8030	
	5% Trimmed Mean		59.0079	
	Median		59,0000	

	Variances	23,504	
	Std. Deviation	4.84805	
	Minimum	39.00	
	Maximum	75.00	
	Range	36.00	
	Interquartile Range	7.00	
	Skewness	-,198	,205
	Kurtosis	1,424	,407

From the results of descriptive analysis, a table of project-based learning categories for Islamic Religious Education students is made as shown in the following table:

Table 2. Categorization of Project-Based Learning

Category Boundary	intervals	Frequency	Percentage	Information
X < (μ-1,0σ)	X < 54.14	18	13%	Low
(μ-1.0σ) ≤ X < (μ + 1.0σ)	54.14 ≤ X ≤ 63.84	96	69%	Medium
(μ + 1.0σ) ≤ X	63.84 ≤ X	26	19%	High
Amount		**140**	**100%**	

From the results of calculating these categories, it is known that students' Project-Based Learning is 13% in the low category, 69% in the medium category, and 19% in the high category, so it can be concluded that the average Project-Based Learning of UNSIKA Islamic Religious Education students is a category Medium.

Descriptive Analysis of Students' Collaboration Skills

Then, research on 140 respondents using a survey as a data collection technique with a questionnaire instrument arranged based on a Likert scale. The results of data collection related to collaboration skills can be described as follows:

Table 3. Results of Descriptive Analysis of Students' Collaboration Ability with SPSS

Descriptive Y				
			Statistics	std. Error
Collaboration Capability	Means		44.5143	,28268
	95% Confidence Interval for Mean	LowerBound	43.9554	
		Upper bound	45.0732	
	5% Trimmed Mean		44.4206	
	Median		44,0000	
	Variances		11,187	

	Std. Deviation	3.34467	
	Minimum	38.00	
	Maximum	52.00	
	Range	14.00	
	Interquartile Range	5.00	
	Skewness	,281	,205
	Kurtosis	-,452	,407

From the results of descriptive analysis, a table of the Collaborative Ability category of Islamic Religious Education students is made as shown in the following table:

Table 4. Categorization of Students' Collaboration Capability

Category Boundary	intervals	Frequency	Percentage	Information
X < (μ-1,0σ)	X < 41.16	33	24%	Low
(μ-1.0σ) ≤ X < (μ + 1.0σ)	41.16≤ X ≤ 47.85	83	59%	Medium
(μ + 1.0σ) ≤ X	47.85 ≤ X	24	17%	High
Amount		**140**	**100%**	

From the results of the calculation of these categories, it is known that the ability of students to collaborate is 24% in the low category, 59% in the medium category, and 17% in the high category, so it can be concluded that the average UNSIKA Islamic Religious Education Students Collaboration skills is a category Medium.

Test of Normality and Linearity of Variable X to Y

The results of the descriptive analysis that has been carried out become an overview regarding project-based learning variable data on the collaborative abilities of UNSIKA Islamic Religious Education Study Program students. Before proceeding to inferential analysis, a prerequisite test analysis is first carried out, namely the normality test and linearity test on the research variables, as follows the results of the normality test for the variable interest in reading on the liveliness of the discussion, the following are the results of the normality test using SPSS:

Table 5. Normality Test Results with SPSS Project-based Learning Variables on Students Collaboration Ability

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residuals
N		140
	Means	,0000000

Normal Parameters, b	Std. Deviation	2.91135905
Most Extreme Differences	absolute	,077
	Positive	,071
	Negative	-.077
Kolmogorov-Smirnov Z		,911
asymp. Sig. (2-tailed)		,377
a. Test distribution is Normal.		
b. Calculated from data.		

Table 5 shows the Kolmogorov Smirnov normality test results using SPSS, the sig value. 0.377 is more significant than 0.05, so it can be concluded that the research data is usually distributed.

The analysis is continued with a linearity test, and the linearity test is a test to find out whether the independent variable with the dependent variable has a linear relationship, while the results of the project-based learning variable linearity test on students' collaboration abilities are as follows:

Table 6. Results of the Lienarity Test with Variable SPSS
Project-based Learning on Students Collaboration Ability

ANOVA Table

			Sum of Squares	df	MeanSquare	F	Sig.
Collaboration Capabilities * Project-Based Learning	Between Groups	(Combined)	618,226	20	30,911	3,927	,000
		Linearity	376,806	1	376,806	47,868	,000
		Deviation from Linearity	241,420	19	12,706	1,614	,063
	Within Groups		936,745	119	7,872		
	Total		1554,971	139			

Refer to the results of the analysis with SPSS calculations of the significance value (sig.) in the columnDeviationfrom Linearity of 0.063 > 0.05, so it can be concluded that there is a linear relationship between project-based learning variables on the collaboration abilities of UNSIKA Islamic Religious Education Study Program Students s.

Simple Linear Regression Analysis X against Y

To determine whether project-based learning affects students' collaboration skills, the SPSS application regression analysis with a significance level of α = 0.05. The following is the result of the analysis using SPSS. The results of simple regression analysis can be seen in the following table:

Table 7. Coefficients a
The Effect of Project-Based Learning on Students' Collaboration Ability

Coefficients a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	std. Error	Betas		
1	(Constant)	**24,480**	3,026		8,090	,000
	Project Based Learning	**,340**	.051	,492	6,643	**,000**
a. Dependent Variable: Collaboration Capability						

Table 8. ANOVA b
Effects of Project Based LearningToStudents Collaboration Ability

ANOVA(b)						
Model		Sum of Squares	df	MeanSquare	F	Sig.
1	Regression	376,806	1	376,806	44,136	,000a
	residual	1178,166	138	8,537		
	Total	1554,971	139			
a. Predictors: (Constant), Project-Based Learning						
b. Dependent Variable: Collaboration Capability						

The regression line equation is written in the form $\hat{Y} = \alpha + bX$. This equation shows the direction of the relationship between X and Y, whether positive or negative. Based on SPSS analysis results, the coefficient table above shows a constant value of $\alpha = 24.480$. This number is a constant number, which means that if there is no project-based learning (X), the collaboration ability (Y) is 0.340. b = the regression coefficient number whose value is 0.340. This number means that for every 1% addition of project-based learning (X), students' collaboration skills (Y) will increase by 0.340. Because the coefficient value is positive, it can be said that project-based learning (X) positively affects students' collaboration skills (Y), where the regression equation can be written as $\hat{Y} = 24.480 + 0.340 X$.

Test the hypothesis

The hypothesis test aims to determine whether the regression coefficient is significant. The hypothesis proposed in this study is:

H0 = No effect of project-based learning (X) on students collaboration ability (Y)

Ha = There is an effect of project-based learning (X) on students collaboration skills (Y)

To ensure that the regression coefficient is significant or not, a hypothesis test is carried out by comparing the value (sig.) with a probability of 0.05, or you can also compare the t-count value with the t-table.

The basis for decision-making can be formulated as follows.

1. If the significance value (sig.) <0.05, it can be said that there is an effect of project-based learning (X) on students' collaboration skills (Y).
2. Conversely, the significance value (sig.) > 0.05, it can be said that there is no effect of project-based learning (X) on students' collaboration abilities (Y).

Based on the SPSS output in Table 7 **Coefficients,** it is known that the significance value (sig.) is 0.000 <0.05, so it can be concluded that H0 is rejected. Ha is accepted, which means that "There is an effect of project-based learning (X) on students collaboration abilities (Y)."

Table 9. Model Summary
The Effect of Project-Based Learning on Students' Collaboration Ability

Summary model b

Model	R	R Square	Adjusted R Square	std. An error in the Estimate
1	,492	,242	,237	2.92189
a. Predictors: (Constant), Project-Based Learning				
b. Dependent Variable: Collaboration Capability				

From the results of the analysis, it is known that the value of R Square = 0.24; thus, it can be concluded that the effect of project-based learning (X) on students collaboration skills (Y) of PAI students at Singaperbangsa Karawang University is 24.2%. In comparison, 85.8% is influenced by other variables that may not be a variable of this study.

DISCUSSION

Description of Project-Based Learning

Students Project-Based Learning is 13% in the low category, 69% in the medium category, and 19% in the high category, so it can be concluded that the average Project-Based Learning of UNSIKA Islamic Religious Education students is in the medium category.

This figure is obtained from survey scores using a questionnaire in which project-based learning has been carried out in lectures. Besides that, the 69% figure indicates that the effectiveness of project learning still needs to be improved. Project-based learning

requires students to be able to do deep learning and try to solve problems with their analytical and creative abilities.

Increasing project-based learning in UNSIKA's Islamic Religious Education study program is still encouraged, considering that various efforts have been made, from routinely validating RPS, monitoring and evaluating, providing recommendations, and encouraging project-based learning in lectures.

Description of Students Collaboration Ability

Students' collaboration abilities, 24% in the low category, 59% in the medium category, and 17% in the high category, so it can be concluded that the average UNSIKA Islamic Religious Education Students' Collaboration Ability is in the medium category.

This shows that students already have collaboration skills, although generally, they are still at a moderate level. This is reflected in implementing academic activities inside and outside the classroom. Some students are very good at communicating and coordinating, but some appear to be passively good at completing academic and non-academic assignments.

Collaboration should be used as capital as a very supportive skill in the world of work, considering that there are comprehensive aspects to becoming a collaborative person. The current era indeed demands collaboration, the ability to manage and work in a team, skills in completing one's tasks and creating a harmonious group climate, plus values that are highly considered in the world of work. Orientation to the process makes collaborative value highly considered today.

Therefore, the percentage of students' collaborative abilities should be maintained and increased, considering that students already have basic collaboration abilities.

Influence Project-Based Learning on Students Collaboration Ability

Referring to the research results, it is known that the significance value (sig.) is 0.000 <0.05, so it can be concluded that H0 is rejected. Ha is accepted, which means that "There is an effect of project-based learning (X) on students collaboration abilities (Y)." Thus, research proves that project-based learning affects students' collaboration abilities.

This is indeed theoretically in line considering that for there to be a relationship between project-based learning and students collaboration abilities, with project-based learning, students s are required to work in teams, develop designs, hold discussions, create joint projects, solve problems, and make presentations that also group so that directly or indirectly hone and familiarize students s in collaborating.

The results of this research support the theoretical arguments put forward by Lev Vygotsky about social constructivism, where cognitive development does not occur by itself but is also assisted by the social environment. This is relevant to project-based

learning, which requires interaction between group members in completing project-based tasks.

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