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THE INFLUENCE OF PROJECT-BASED LEARNING ON ENTREPRENEURIAL CRAFTS LEARNING OUTCOMES THROUGH LEARNING INDEPENDENCE

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ABSTRACT

Background: The development of learning independence is very necessary in the success of the learning process. Students who have high learning independence tend to learn better, are able to monitor, evaluate, and manage their study schedules effectively. More than that, students can estimate the time in working on the project.
Aim: This study aims to examine the effect of the implementation of the project-based learning model on the learning outcomes of entrepreneurial crafts in terms of the learning independence of class X students.
Method: This research is an experimental research with a factorial design method. The research data was obtained through a student learning independence questionnaire and also a student comprehension test. This study involved 32 students who were taken using a random sampling technique. The data were analyzed by using SPSS 26, by conducting descriptive statistical tests, prerequisite tests namely normality and homogeneity tests, and then tested research hypothesis using two-way Anova.
Findings: Project-based learning models are more effective than direct learning models in improving learning outcomes. Project-based learning models provide positive interactions with students' independent learning. Learning outcomes of students with high learning independence shows a significant difference between the Project-based learning and direct learning model. The learning outcomes of students with low learning independence show a significant difference between the learning model of Project-based learning and direct learning model.

KEYWORDS *project-based learning, learning independence, learning outcome*

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INTRODUCTION

The learning model is a form of learning that is illustrated from start to finish which is presented specifically and uniquely by the teacher. The learning model is a pattern of applying a method approach, and learning techniques. Based on the Regulation of the Minister of Education and Culture Number 65 of 2013 concerning Process Standards, the preferred learning model in the implementation of the 2013 curriculum is the inquiry learning model, the discovery learning model, the project-based learning model, and problem-based learning models. So that the learning process can meet the process standards as expected in the government regulations above, then of course teachers are required to understand well and mature the models, approaches, methods, and strategies that will be used in developing the educational process (Wardani et al., 2019).

Supriyantoko et al. (2022) stated that one of the learning models suggested in the Regulation of the Minister of Education and Culture was the Problem-Based Learning (PBL)

model and the Project-Based Learning (PjBL) model. In the project-based learning model , project-based learning focuses on questions or problems that can direct students to find solutions to these problems, using appropriate concepts or knowledge. This knowledge is built by carrying out independent investigations, and the teacher only acts as a facilitator. Project work takes quite a long time, is oriented towards the final product, and the learning outcomes are in the form of a product (Supriyantoko et al., 2022). Meanwhile, problem-based learning begins with presenting problems to students, directing students to solve problems or study these problems. Often this learning model is wrapped in the form of a case study. Troubleshooting is done in a short time. The learning outcomes are in the form of solutions to problems that are presented in the form of presentations or writing (Supriyantoko et al., 2022). While the similarities of these two teaching strategies are that they both focus on open-ended questions/tasks, authentic learning, student-centered, multi-discipline, focus on strengthening independent learning skills, communication, collaboration, critical thinking, time management, and project management skills.

The application of project-based learning is inseparable from the independence of student learning. Learning independence can be described as the ability of students to face problems, have self-confidence, be able to do something without the help of others, and of course be responsible (Martiani, 2021). Thus, in the implementation of project-based learning, students can work on their projects calmly, confidently and responsibly. This is reinforced by Sumarmo (2004) in Nurhikmayati and Sunendar (2020) who argued that independent learning is the ability to monitor one's own abilities, and is the hard work of human personality. The development of learning independence is very necessary in the success of the learning process (Azzahra et al., 2022). Students who have high learning independence tend to learn better, are able to monitor, evaluate, and manage their study schedules effectively. More than that, students can estimate the time in working on the project.

One of the subjects given to senior high schools is craft and entrepreneurship lessons. In craft and entrepreneurship learning, of course, the process of learning activities is required to attract and give the impression that students are always remembered and provide motivation when learning so that students are more enthusiastic about learning.

The problem that often occurs during the learning process is the use of learning models that are still not optimal so that they cannot increase students' interest because the learning model used is still conventional, where in terms of In this case, teachers often carry out learning methods of "lecturing" and ways of interacting between teachers and students who are lacking. The results of interviews with teaching teachers and observations of learning in class, particularly in Craft and Entrepreneurship subjects, show that this also occurs in craft and entrepreneurship subjects in secondary schools in South Denpasar, such as SMA Negeri 5, SMA Negeri 6, and SMA Negeri 10 Denpasar in particular. class X (Ten), where the teacher more often uses the lecture method and also questions and answers as a learning method. The students only hear, take notes, even memorize the material provided by the teacher. Thus, students' knowledge is only limited to what the teacher conveys in front of the class. The non-involvement of students directly in the learning process causes a reduction in students' interest in learning, because students only listen and memorize the material provided by the teacher.

In addition, there are several problems that are often experienced by students in the implementation of craft and entrepreneurship learning, namely students still feel bored and lazy

when attending Craft and Entrepreneurship lessons because the learning model used is still conventional, namely lectures and questions and answers. So that this results in less interaction between teachers and students, learning does not trigger student learning independence, students are less responsible for the assignments given, such as being late in submitting assignments.

In 2020, Asdiansyah et al. (2020) conducted research with the aim of: (1) Testing the effect of using the Project Based Learning (PjBL) learning model for students. (2) Testing the influence of students' interest in learning. (3) Testing the effect of using the Project Based Learning (PjBL) learning model with an interest in learning on learning outcomes to draw shapes (Still life). This study used a re-experimental design (Pretest – Posttest Control Group Design), by randomizing two groups (control group and experimental group). The results of the analysis in this study are as follows: 1) There is an effect of using the Project Based Learning (PjBL) learning model on the learning outcomes of students' still life. 2) There is no effect of learning interest on students' learning outcomes in drawing shapes (Still life). 3) There is no interaction between the use of the Project Based Learning (PjBL) learning model and the Direct learning model with an interest in learning on students' learning outcomes in drawing shapes (Still life).

The next research was conducted by Hamidah and Citra (2021) which aims to determine the effect of the Project Based Learning (PjBL) learning model on the interests and learning outcomes of students at SMA Negeri 4 Seluma. The method used is quasi-experimental (Quasi-Experimental) with a Randomized Control Group Pretest-Posttest Design. The results showed that the interest and learning outcomes of students in the experimental class (XI IPA 1) were higher than the control class (XI IPA 2) with a Sig. (2-tailed) of 0.000. The conclusion from this study is that the Project Based Learning (PjBL) model is effectively used as a learning model for students' interests and learning outcomes in biology at school.

Furthermore, in 2022, Irfana et al. (2022) conducted research against the background of the problem that learning that was previously carried out face-to-face has now turned into online (in-network) learning. This causes a decrease in students' interest and learning outcomes while participating in online learning. The low learning outcomes are evidenced by the acquisition of an average score of 30 students in grade 4, there are 47% of students whose scores reach the KKM and 53% of students whose scores do not reach KKM 75. This research uses a quantitative research approach with an intact-group comparison design experimental method. This study uses questionnaires and test data collection instruments. Then the data were analyzed using the Independent Sample t-test. Based on the results of the t test obtained tcount>ttable, namely 15.878> 1.688 and the results of the t test on learning outcomes variables show that tcount>ttable, 6.964> 1.688. Thus it can be concluded that the Project Based Learning (PjBL) learning model is effective in increasing students' interest and learning outcomes.

Above are previous research related to the application of Project-based learning models on student learning outcomes. The current research is different from previous studies. Differences occur in the research location, the research sample used (along with the sampling technique). The current research design is different from the previous one, namely the current research uses a 2x2 factorial design. Then, the method of data analysis used is also different, where in this study the data will be analyzed using two-way Anova.

Based on the explanation above, this study aims to identify and explain differences in learning outcomes between students who are given the Project-based learning model and the direct learning model, the interaction between the Project-based learning model. with the Independent Learning of students, differences in learning outcomes between students who are given a Project-based learning learning model and conventional learning for students who have high learning independence, and differences in learning outcomes between students who are given a Project-based learning learning model with conventional learning in students who have low learning independence. The results of this research can be used as one of the study materials in an effort to explore the process of teaching and learning activities and student learning outcomes with the Project Based Learning learning model, especially in Craft and Entrepreneurship lessons at SMA Negeri 6 Denpasar which is reviewed from the independent learning of students.

METHODS

The research is an experimental research with quantitative approach to see the causal-effect relationship of the related variables. This study uses a factorial design.

Table 1. Factorial Design 2x2 Design

Variable	**Learning model**	
	Project-Based Learning (A1)	***Direct Learning (A2)***
High Independence (B1)	A1B1	A2B1
Low Independence (B2)	A1B2	A2B2

Information:

1) A1B1: The learning outcomes of students who are taught using the Project-based learning method with high independence;
2) A1B2: The learning outcomes of students who are taught using the Project-based learning method with low independence;
3) A2B1: The learning outcomes of students who are taught using the direct learning method with high independence; And
4) A2B2: The learning outcomes of students who are taught using the direct learning method with low independence.

By comparing the experimental class that uses the Project-based learning method and the control class that uses teaching methods as is often done or conventional methods with regard to learning interests and student learning outcomes as moderator variables. Then the two classes were evaluated and compared between classes that received the Project-based learning method and classes with conventional methods. In the experimental class, did they experience changes, whether they experienced an increase or decrease that occurred after learning Crafts and Entrepreneurship using the Project-based learning method compared to the results before using the Project-based learning method.

This experimental model goes through three steps namely giving a pretest to measure the dependent variable before treatment or treatment is carried out (pretest), giving experimental treatment to experimental subjects in the form of using the Project-based learning method in

Craft and Entrepreneurship subjects of class X SMA Negeri 6 Denpasar in terms of student learning independence, giving posttest to measure the dependent variable after treatment.

This research was conducted at SMA Negeri 6 Denpasar for the 2021/2022 academic year. The supporting aspects contained in the Public High School are in the 2021/2022 academic year which has implemented the 2013 curriculum. The research implementation for each research sample was carried out six times giving treatment in the control class and the experimental class.

X class students at SMA Negeri 6 Denpasar which consisted of 12 classes in the 2021/2022 academic year. The sampling technique in this study was Random Sampling which was randomized by class, so that each class had the same opportunity to become the research sample. Sampling was carried out through homogeneity tests and normality tests.

Table 2. Research Sample

Class	Number of Students	Group
X IPA 1 SMA Negeri 6 Denpasar	32	Experiment Group
X IPA 2 SMA Negeri 6 Denpasar	31	Control Group
TOTAL	**63**	

Table 3. Research Sample for Each Group

Variable	Learning model		Total
	Project-Based Learning (A1)	***Direct Learning (A2)***	
High Independence (B1)	8	8	16
Low Independence (B2)	8	8	16
Amount	16	16	**32**

The statistical analysis used in testing the hypothesis is to use a two- way Anova (2x2). In this study aims to investigate the effect of one independent variable on one dependent variable. The data obtained from the experimental and control groups will be analyzed based on descriptive statistics and inferential statistics. Descriptive statistics will be analyzed based on data tendencies, which include mean, median, mode, standard deviation, variance, maximum score range and minimum score range. However, before carrying out inferential statistical analysis, a prerequisite test is first carried out. All analyzes in this study will be carried out with the help of SPSS 26.

RESULTS AND DISCUSSION

Hypothesis Testing Results 1

Table 4. Summary of Two-way Anova Test Results

Tests of Between-Subjects Effects

Dependent Variable: Learning Outcomes

Source	Type III Sum of Squares	df	MeanSquare	F	Sig.
Corrected Model	794,750 [a]	3	264,917	36,495	.000
Intercepts	213858000	1	213858000	29461.373	.000

independence	760,500	1	760,500	104,768	006
Group	6.125	1	6.125	.844	.009
Independence * Group	28.125	1	28.125	13,875	.000
Error	203,250	28	7,259		
Total	214856000	32			
Corrected Total	998,000	31			
a. R Squared = .796 (Adjusted R Squared = .775)					

The table above shows that H $_0$ is rejected and Ha $_{is}$ accepted. This can be interpreted that there are differences in learning outcomes between groups of students with project-based learning models and groups of students with direct learning models.

Hypothesis Testing Results 2

Table 5. Summary of ANOVA Test Results (Interaction of Learning Models on Learning Outcomes)

ANOVA

Learning outcomes

	Sum of Squares	**df**	**MeanSquare**	**F**	**Sig.**
Between Groups	794,750	3	264,917	36,495	.000
Within Groups	203,250	28	7,259		
Total	998,000	31			

The results of the ANOVA test show that H_0 is rejected and H_a is accepted, which means that there is an interaction effect between the learning model and student learning independence on student learning outcomes.

Hypothesis Testing Results 3

Table 6. Summary of Post Hoc Test Results for Students with High Learning Independence

Learning outcomes

Tukey B [a]

Variables	**N**	**Subset for alpha = 0.05**	
		1	***2***
Low Learning Independence (PBL)	8	76.38	
Low Learning Independence (DL)	8	77.38	
High Learning Independence (DL)	8		85.25
Higher Learning Independence (PBL)	8		88.00
Means for groups in homogeneous subsets are displayed.			
a. Uses Harmonic Mean Sample Size = 8,000.			

In Hypothesis 3, the focus is on students' high learning independence. It can be seen that there are differences in the mean or average of each group. Thus, H_0 is rejected and H_a is

accepted, which means that in students with high learning independence, the learning outcomes of students in the project-based learning model group are higher than students in the direct learning learning model group.

Hypothesis Testing Results 4

Table 7. Summary of Post Hoc Test Results for Students with Low Learning Independence

Learning outcomes

Tukey B [a]

Variables	N	Subset for alpha = 0.05	
		1	*2*
Low Learning Independence (PBL)	8	76.38	
Low Learning Independence (DL)	8	77.38	
Higher Learning Independence (PBL)	8		85.25
High Learning Independence (DL)	8		88.00
Means for groups in homogeneous subsets are displayed.			
a. Uses Harmonic Mean Sample Size = 8,000.			

Judging from the average value (mean) of students with low learning independence, it can be seen that students in the direct learning learning model group have a higher average score than students in the project-based learning model group, namely 77.38 > 76.38. Thus, H_0 is rejected and H_a is accepted, which means that in students with low learning independence, the learning outcomes of students in the direct learning learning model group are higher than those in the project-based learning group.

Learning Model of Project-Based Learning has a Significant Effect on the Learning Outcomes of Crafts and Entrepreneurship

Learning outcomes can be associated with numbers or symbols that can show the ability of students after they follow the learning process. This is supported by the statement put forward by Nurhadiyati et al. (2020), Prabowo et al. (2020), and Sucipto (2017), where they argue that learning outcomes are related to the final results in the form of numbers or symbols that can reflect students' abilities during the learning process or after the learning process is complete.

Not only can it be seen from symbols or numbers, but the learning process can also be reflected in the changing behavior of students, attitudes, and also their skills. This statement is supported by Oemar Hamalik in Asdiansyah et al. (2020) who argues that learning outcomes are the process of changing the behavior of students which can be measured and observed through the knowledge, attitudes, and skills of students, which is indicated by improvement and development better condition than before.

One of the factors that can affect student learning outcomes is the learning method used by the teacher in the learning process. In this research, project-based learning as well as direct learning is used as a learning model in crafts and entrepreneurship subjects. After being given treatment by applying the learning model to the two groups of students, the students were given

a written test with a total of 40 questions. Then, to find out the differences in student learning outcomes in the project-based learning model group and the direct learning learning model group, an analysis was carried out using a two-way ANOVA test with the help of SPSS. The results of the analysis show that the value of Sig. for the group of project-based learning and direct learning learning models , namely .000, smaller than the predetermined significant level, namely 0.05, so that H_0 is rejected and Ha $_{is}$ accepted. This can be interpreted that there are differences in learning outcomes between groups of students with project-based learning models and groups of students with direct learning models.

There are several factors that cause differences in student learning outcomes with project-based learning models and groups of students with direct learning models. Project-based learning model is able to provide better understanding of concepts and learning outcomes compared to the direct learning model. The project-based learning model is a method that uses contextual learning, in which students play an active role in solving problems, making decisions, researching, presenting and creating documents. This is supported by Sukaswanto and Yuswono (2020) who argue that project-based learning or project-based learning is an effective approach that focuses on creative thinking, problem solving and student interaction between their peers to create projects and use new knowledge. In line with this, Suarni et al. (2014) suggested that project-based learning is designed to solve complex problems by conducting investigations, which focus on the concepts and principles of the core material or learning topics, facilitating students to be active in learning, assignments - other meaningful tasks by working directly to solve the problem, and the peak can produce a real product with the aim of understanding the material as a whole, increasing motivation, higher-order thinking skills, ability to solve problems, and increasing process skills in students.

With the concept of learning by doing that is offered by the project-based learning model, students are given the opportunity to explore material in various ways. This is supported by Pasaribu and Simatupang (2020) where project-based learning provides an opportunity for students to understand the material or topics taught by the teacher by learning directly, by conducting collaborative experiments with their friends. Thus, students will more easily understand and get concepts regarding learning topics.

In this study, students were given problems, then together with the teacher determined what steps to take, followed by determining the schedule for implementing the steps to solving the problem, students were divided into several groups, they were given responsibility for working on the problem solving project. according to a predetermined schedule. The teacher only monitors students, provides motivation, and facilitates students in working on the project. Then, after the project is completed according to a predetermined schedule, the teacher and students carry out an assessment and evaluation of project work.

Thus, students will get more opportunities to explore issues related to topics or learning materials presented by the teacher. On this occasion, students get space to interact with their friends. This can lead to an increase in interaction that can occur from all directions in the learning process in the classroom. Thus, there are some students who are less sociable and then become more courageous to socialize with their friends through discussion activities related to the projects they are working on.

This is supported by research conducted by Kurniawan et al. (2018) where in their research, They found that the project-based learning model is also supported by constructivist

learning theory, which places more emphasis on students building own knowledge through their own experience. There is an opportunity to convey ideas or opinions, listen to the opinions of others, and reflect on their ideas to others. The advantages of the project-based learning learning model can improve problem solving skills, make students more active and successful in solving complex problems.

In applying the project-based learning model , students are required to produce a product as a form of problem solving. So that they gain experience in organizing projects, allocating time, and managing information sources, tools and craft materials that they will use. So, after applying this learning model, students can improve their abilities and skills. The results of this study are in line with the results of research conducted by Nurhadiyati et al. (2020b) where in his research he found that project-based learning is a learning model that emphasizes student activity in solving various open-ended problems and applying their knowledge in doing a project to produce a certain authentic product that gives students experience in organizing projects, allocating time, and managing resources such as equipment and materials to complete assignments.

the project-based learning model can provide students with a learning atmosphere that is varied and different from the previous learning process. So that students can build their knowledge and understanding with their respective learning styles. This is supported by the results of research conducted by Nugraha et al. (2021) the project-based learning model helps students learn with a varied and different learning atmosphere from before. Each learner has a different learning style, builds knowledge and experience in a different way. Project-based learning is a model for classroom activities that differs greatly from ordinary, isolated, teacher-centered classroom activities. Project-based learning activities are long-term, interdisciplinary, learner-centered and integrated with real-world issues and practices. With project-based learning, students explore, make judgments, interpret and synthesize information in meaningful ways. The use of project-based learning models has a significant influence on student learning outcomes, inseparable from the activities students participate in during the learning process. The results of this study prove that the application of project-based learning can develop students' scientific learning activities, namely in the form of activities: 1) making observations (observing includes reading, listening, listening and seeing activities (without or with tools); 2) asking questions; 3) carry out investigations or experiments; 4) reasoning; and 5) establishing relationships with other people in an effort to obtain information or data (communicating).

Thus, there are differences in student learning outcomes in the form of knowledge and skills, changes in attitudes in the group of project-based learning models and direct learning learning models. This is supported by the results of research conducted by Anwar et al. (2021), Irfana et al. (2022), and Nurhidayati et al. (2020a), who also found that the application of the project-based learning model provided better learning outcomes than the direct learning model. The project-based learning learning model provides more interaction opportunities, learning becomes more interesting and meaningful for students, students are more focused and deep into the material being studied, students become more aware of the material presented and students are able to answer evaluation questions appropriately and get high learning outcomes. The advantages of the PjBL learning model in increasing student interest and learning

outcomes are because all students can participate actively in learning and making projects, resulting in increased interest and practicing critical thinking.

Interaction Between Project-Based Learning Learning Models and Student Learning Independence

The independence of students can be seen from the way they show their confidence in solving obstacles without help from others. This is in line with the opinion given by Sanjaya (2021), in which students can be said to be independent if they are able to solve the problems they face, make their own decisions, show initiative, while still paying attention to their environment.

The results of the analysis show that the F value obtained is equal to 13,875, with a Ftable of 4.17 at a significance level of 0.05. This shows that the value of F is greater than the value of Ftable, so that H_0 is rejected and H_a is accepted, which means that there is an interaction effect between the learning model and student learning independence on student learning outcomes. In applying the project-based learning learning model, students are required to produce a product as a form of problem solving given by the teacher. Students are required to organize the steps that must be carried out, set the time for processing, carry out investigations or experiments, find supporting information, and also interact with the surrounding environment.

So, having an independent attitude, especially in the project work process is very important. Independence in learning will make students responsible and more disciplined about what they are doing. This statement is supported by Candra et al. (2019) which states that the main characteristic of independent learning is the development of students' abilities to carry out the learning process that does not depend on the factors of the teacher, friends, class and others. The level of student learning independence can be determined based on how much initiative and responsibility students have to play an active role in terms of learning planning, learning processes and learning evaluation. The greater the active role of students in these various activities, indicating that these students have a high level of learning independence.

The project-based learning learning model requires students to be able to find information related to projects they are working on independently and in collaboration with their group mates. Students are also required to analyze the information they get. The teacher is only a motivator and facilitator. Students develop their own information they get. This is supported by the results of research conducted by Nahdliyati et al. (2016) which found that the project-based learning method makes students learn to search for information independently and find, recognize, and detail problems to be solved later.

Research conducted by Muslihudinn and Andini (2020) learning by using the project based learning model requires the ability of students to manage and organize their own learning (self regulated learning). In learning with this model, student initiative and independence in learning are the main capital that must be developed or developed in each student. The ability of students to organize and manage their own learning activities (self-regulation) will have an impact on several strategic aspects of learning improvement which include; 1) management of students' motivation and emotional control in learning, 2) management of learning behavior and learning time management, 3) management of cognitive and metacognitive strategies as well as

management of students' academic skills in learning, 4) control and planning of contextual factors that can provide impact on the learning process.

Learning independence is an individual attitude, especially students in learning who are able individually to master competence, without depending on other people and responsibilities. These students individually have an attitude of responsibility, are not dependent on other people, are confident and able to control themselves. This learning independence is very necessary for students so that learning achievement can be optimal. Learning independence is an encouragement in a person to carry out learning activities with full confidence and confidence in his ability to complete his learning activities without the help of other people.

This is supported by the results of research conducted by Saputri (2021) which found that independence is a positive mental attitude of an individual for the convenience of carrying out planning activities to achieve goals by positioning or conditioning himself so that he can evaluate himself and his environment. The independence possessed by students is to foster self-confidence, and to receive learning material more quickly so as to shape the character of students for the better.

Differences in Learning Outcomes between Students who are given the Project-Based Learning Learning Model and Direct Learning for Students who have High Learning Independence

Learning independence is one of the factors that influence the learning model applied by the teacher in the learning process which will also affect student learning outcomes. Students with high learning independence will have confidence in what they do, be able to think creatively, not avoid problems that come, try to work optimally, and be responsible. This is in line with the theory put forward by Ekawati (2019) where students who have high learning independence will be able to take responsibility for the tasks they are doing, do not depend on other people, do not feel inferior when they differ from others, and also responsible for their own actions.

The results of this study indicate that the group of students with a high level of learning independence, Sig. obtained is 0.000, which is smaller than the specified significant level of 0.05. Meanwhile, from the calculations it was found that the value of $t_{count} > t_{table}$ is 1.985 > 1.761, with a significant level of 0.05. Thus, H_0 is rejected and H_a is accepted, which means that in students with high learning independence, the learning outcomes of students in the project-based learning model group are higher than students in the direct learning learning model group. Then, judging from the average value (mean) of students with high learning independence, it can be seen that students in the project-based learning model group have higher average scores than students in the direct learning model group, namely 88.00 > 85.25.

The results of this study are supported by research conducted by Ekawati et al. (2019) where project-based learning models are more effective than conventional learning models. Project-based learning increases the independence of students. So the end result of the learning process is a product that can be meaningful and useful. The project-based learning learning model can measure students' performance abilities in learning that demands to apply students' knowledge and skills by demonstrating what students can do in accordance with learning goals and targets. In learning that defines a project-based learning model, students are forced to think

critically, work together, be creative, communicate in carrying out projects, while students who take conventional learning only listen to teacher lectures, take notes and ask questions or class discussions. With the phases of the project-based learning model such as discussing, thinking creatively, working together and communicating to find answers to problems, conducting experiments, presenting project results and evaluating project results, students practice their independent learning in every meeting, so that the average -the average learning independence of students who take part in project-based learning model learning is higher than students who take conventional learning.

Research conducted by Supriyantoko et al. (2022) also supports the results of the current research. Supriyantoko et al. (2022) found that students who have strong independence will not give up easily. An attitude of independence can be shown by the ability to solve problems faced by behavior. For students who have high learning independence, learning with the PBL learning model challenges students' abilities and provides satisfaction to discover new knowledge for students, increases motivation, independence, and students' learning activities and can assist students in transferring students' knowledge to understand real world problems, helping students to develop their new knowledge and be responsible in the learning they do.

Research conducted by Martiani (2021) also supports current research, where in his research it was found that compared to conventional learning, project-based learning involves students more in the learning process. The project-based learning model is student-centered innovative learning and places the teacher as a motivator and facilitator, in which students are given the opportunity to work autonomously in constructing their learning. The project-based learning model directs students to problems directly and then the solution involves project work that is indirectly active and is trained to act or think creatively.

Thus, compared to the direct learning learning model, the project-based learning learning model which requires students to be able to organize projects, allocate time, and manage information sources, the craft materials they will use, to create products in the end, requires students to become an independent person. Thus, they are able to develop their ability to understand topics or learning materials, understand topics thoroughly because they learn directly. This then affects the learning outcomes that students get. Not only excel in aspects of knowledge related to topics or learning materials, but also improve their competence in the skills of finding and processing information, interacting and communicating with friends, being responsible and disciplined in what they do, fostering students' self-confidence and mastering topics that they are studying.

Differences in Learning Outcomes between Students Given the Project-Based Learning Learning Model and Direct Learning for Students who Have Low Learning Independence

As previously stated, independent learning is one of the factors that can determine the success of implementing a learning model. Independent learning is also a factor that can determine the success of student learning. This is because independent learning causes students to have self-confidence, motivation to learn, responsibility, discipline, focus on learning, and also self-knowledge.

Low learning independence will certainly affect student learning outcomes, because students lack confidence, especially when expressing opinions and when their opinions are

different from others. The results of this study are supported by research conducted by Supriyantoko et al. (2022) where students will experience difficulties in learning when they do not have confidence in their strengths. Because, belief in himself will make them feel capable of achieving the various goals they are planning. In line with this, research conducted by Suleang et al. (2021) suggests that low self-confidence will result in ineffective actions. Actions that are not effective will certainly give bad results. Poor results will further justify that you do not have competence and will result in lower self-confidence. Someone who is confident in himself, all the activities he does are full of optimism is someone who has self-confidence.

For project-based learning model, students are required to solve problems, make decisions, research, present and create documents. Meanwhile, in the direct learning model, students are given more opportunities to listen to the material explained by the teacher. This learning model is teacher-centered and not student-centered.

Students with low learning independence who are given the application of project-based learning learning models experience difficulties in following each stage. For example, students have difficulty completing projects on time, do not participate actively in determining the steps and schedule for project work, cannot find and analyze sources of information, depend on the teacher and their group mates, do not have the motivation to follow each stage of project work. Meanwhile, these students will feel more comfortable when learning with the direct learning model because they only need to wait for the teacher to explain the material, read the material provided by the teacher without any further activity from the reading activity. So, this has an impact on students' critical thinking, students' responsibilities towards the tasks given, students' lack of initiative.

This is in line with the statement conveyed by Gusnita et al. (2021)learning independence possessed by students shows problem solving abilities. If the learning independence of students is low, then the ability to solve problems is not good. Independent learning is a process of self-control to learn not to depend on others, to be able to make decisions and initiatives to solve problems without expecting help from others, and to have confidence in carrying out tasks.

In their research, Gusnita et al. (2021) also suggested that if students have low learning independence, they tend to follow the learning methods of other friends, where the learning methods are not necessarily in accordance with their learning methods. In addition, students will also feel overwhelmed in understanding the information they get from various sources, feel unsure that the results of the project are good or satisfactory, find it difficult to accept different opinions, and are unable to show that they are capable.

The results of the current research are also supported by the results of research from Kidjab et al. (2019) which found that students with low learning independence will not be able to take responsibility for what they do and the assignments they do will be neglected or not collected on time, they will act not according to the rules or a predetermined schedule, depend on other people around them, and have no confidence that they are capable of achieving their goals. In the learning process, students are required to be able to manage their own abilities so that they do not have to depend on others. Because students only rely on help from other people, this causes these students to no longer develop their abilities, especially the ability to work alone. Independence in learning means that students have their own awareness to learn, are able to determine for themselves the steps to be taken in learning, are able to obtain their own learning resources, and carry out self-evaluation activities and reflect on the learning activities that have

been carried out. Having independent learning, students will have clear goals, be able to assess themselves, consider learning progress, such as high views and beliefs about their own abilities, assess learning, influencing factors in learning, and anticipate impact (self-efficacy) during the process learning.

In their research, Kidjab et al. (2019) also found that students' lack of self-initiative would certainly affect their learning process. This is because, the initiatives that students have can encourage themselves to find solutions to every problem and how they take to solve these problems without depending on others. If students have the will to act in this way, it will support students in learning mathematics. The level of student learning independence can be determined based on how much initiative and responsibility students have to play an active role in terms of learning planning, learning processes and learning evaluation. The greater the active role of students in these various activities, indicating that these students have a high level of learning independence.

CONCLUSION

The learning model of Project-based learning is more effective than the direct learning model in improving student learning outcomes in Craft and Entrepreneurship subjects. The Project-based learning learning model provides positive interaction with the Independent Learning of students.

The learning outcomes of students with high independence show significant differences between the learning model of Project-based learning and direct learning. Students who are given the Project-based learning learning model show better results compared to students who are given the direct learning learning model.

The learning outcomes of students with low independence show a significant difference between the learning model of Project-based learning and direct learning. Students who are given a Project-based learning learning model show better results compared to students who are given a direct learning learning model.

There needs to be more mature preparation in the application of learning models. The use of the project-based learning model requires teacher skills in good classroom control and management to deal with classroom conditions that are rather difficult to control and easily become noisy during project implementation, due to freedom during project implementation. It is suggested to other parties to conduct the same research on other subjects as a comparison with the results of this study.

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