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THE EFFECT OF THE PROJECT BASED LEARNING MODEL ON THE LEARNING OUTCOMES OF CREATIVE PRODUCTS AND ENTREPRENEURSHIP

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Abstract

This study was conducted to analyze the differences in learning outcomes of Creative Products and Entrepreneurship subjects in grade XI students of SMK Sasmita Jaya 1 before and after the implementation of the Project Based Learning learning model. The method used is Quasi Experiment with Time Series Design design, where only pretest and posttest (final test) are carried out. The research population includes all students of grade XI (XI 1, XI 2, XI 3, and XI 4) totaling 144 people, with a limited sample of one class, namely class XI 3 which consists of 35 students. This research uses data collection techniques through observation, question items, and documentation. Data analysis was carried out by applying a prerequisite test in the form of a normality test, followed by a hypothesis test using a one-sample t-test and a paired sample t-test. In addition, to ensure the validity of the research instrument, tests were carried out on the validity, reliability, differentiation, difficulty, and analysis of the question items as a whole. Based on data analysis, the pretest results of grade XI 3 students of 69.91 experienced a significant increase to 85.54 in the posttest after the implementation of the Project Based Learning model, showing the effectiveness of the model.

Keywords: Project Based Learning; Learning Outcomes; Creative Products; Entrepreneurship

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INTRODUCTION

Based on the provisions in Chapter 1 Article 1 of Law Number 20 of 2003 concerning the National Education System, it is emphasized that: "Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential in society, nation, and state". The achievement of educational goals can be realized through the learning process, which is an integral component of educational activities. Thus, learning activities play a crucial role in the success of one's education, because the success of studies is highly dependent on the quality of the learning process. This learning process allows individuals to optimize their own potential and environmental resources to improve the quality of life. According to Liu & Pásztor (2022), learning is a process of transforming individual behavior and personality that occurs through interactive experiences with the surrounding environment which can

be seen in various forms including changes in knowledge, understanding, attitudes and behaviors, as well as in skills, skills and habits as well as other components in a person. According to Simanjuntak et al., (2021) "Learning is change, in this case, learning means an effort to change individual behavior. So learning will bring a change to the individual who learns".

The teaching process is an activity that has a great moral responsibility, in this case the teacher is responsible for the success of the learning process. Teaching activities are a series of structured actions that are consciously designed to guide the learning process of students in order to achieve predetermined learning targets (Sejati et al., 2021; Vhalery & Nofriansyah, 2018). The basics of the teaching and learning process are explained learning and teaching are two concepts that cannot be separated from each other (Tawfik et al., 2021). Learning refers to what a person should do as a subject receiving the lesson (educational target), while teaching refers to what the teacher should do as a teacher (Hussien, 2020). These various meanings indicate that teachers need to have the ability to organize learning activities while utilizing the potential of the environment as a means of supporting learning (Almulla, 2020).

The achievement of optimal learning outcomes in the implementation of learning activities has been influenced by two factors. These factors include internal factors that come from within the students themselves, which are divided into two aspects: (1) physiological related to physical conditions, and (2) psychological which includes intelligence, talents, interests, activities, emotions, motivation, attention, and discipline. On the other hand, external factors come from outside the student, such as the social environment and non-social factors. The social environment includes interaction with family, teachers, peers, and the community. Meanwhile, non-social (physical) factors include learning infrastructure facilities and environmental conditions.

Student learning outcomes are also influenced by the teacher's responsibility in carrying out his duties when teaching because the teacher can also be said to be a creator in the learning process. Stated that learning outcomes reflect the synergy between students' learning efforts and the role of teachers' teaching, so that they can be used as a benchmark for learning success (Polyiem & Nuangchalerm, 2022; Mutakinati et al., 2018). Meanwhile, Utami et al., (2022) emphasized that learning outcomes are a mastery of abilities obtained by students through the stages of meaningful learning experiences.

Teachers play a central role in determining the success of the education and learning process in the school environment (Tawfik et al., 2021). One of the important aspects that educators must have is the mastery of various learning models and techniques that are not only relevant to the subject matter, but also to the content implemented in the classroom by adapting it to the conditions of students and the existing learning environment (Polyiem & Nuangchalerm, 2022). In addition, teachers also have an important role in this, because the way they teach will determine the learning process that takes place. This is based on the problem that teacher-centered learning causes students not to get the opportunity to become active learners in the ongoing process. Such learning will cause low learning outcomes obtained by students, because teachers do not apply variations in the learning model and only use one model such as the lecture model. Thus, professional teachers are required to apply all their pedagogical capacities and expertise to the maximum. Its crucial aspects include the ability to choose a variety of learning models that are effective and efficient and also suitable for realizing the planned instructional objectives (Fadilla et al., 2021).

The Project Based Learning (PjBL) model is present as an alternative learning model with the aim of creating a special and authentic learning experience for students in undergoing the educational process (Tempera & Tinoca, 2023). Project Based Learning (PjBL) encourages students to actively carry out the process of exploration, evaluation,

analysis, synthesis, and processing of information to produce a variety of learning products (Rahmawati et al., 2020). This approach creates an interesting learning atmosphere and creates a pleasant feeling in the process, while being able to significantly improve and encourage the achievement of student learning outcomes (Liu et al., 2019).

This is reinforced by previous research in a study titled "The Influence of Project Based Learning Models on Student Creativity" (Quasi-Experimental Study on Craft and Entrepreneurship Subjects Class X SMK Pasundan 2 Bandung) confirming that the implementation of PjBL has a significant influence of 23.1% on increasing student creativity. N-gain analysis showed that the experimental class using PjBL achieved a score of 0.74 (high category), while the control class with conventional learning obtained a score of 0.60 (medium category).

METHODS

The methodology applied in this study follows a quantitative approach. The main characteristic of quantitative research lies in the use of numerical data throughout all stages of the research process ranging from data collection, interpretation, to the presentation of findings. In quantitative research, numbers serve as tools to describe and analyze information regarding the subject under investigation. This study specifically employs a quasi-experimental research method with a Time Series Design. According to Sugiyono (2017:72), the experimental method is a scientific approach used to determine the causal relationship between an intervention and its effect on dependent variables within a controlled setting. In the Time Series Design model, data is collected through repeated observations over time, including both a pretest and posttest (final test), allowing researchers to detect trends and changes resulting from the applied intervention. The population in this research includes all students of grade XI at SMK Sasmita Jaya 1, comprising four classes: XI 1, XI 2, XI 3, and XI 4, with a total of 144 students. From this population, the sample is limited to one class, namely class XI 3, consisting of 35 students. The selection of this class as the sample was based on purposive sampling to represent the characteristics needed for the research focus. Data were collected through a combination of observation, test items (questionnaires), and documentation. These instruments were used to measure students' learning outcomes before and after the implementation of the Project-Based Learning (PBL) model in the subject of Creative Products and Entrepreneurship.

RESULTS & DISCUSSION

Results

Below is a breakdown of the frequency distribution of learning outcomes of Creative Products and Entrepreneurship Class XI OTKP 3 at SMK Sasmita Jaya 1.

Table 1.
Learning Outcome Data for Class XI OTKP 3

No	Statistic	Value	
		Pretest	Posttest
1	Mean	69.91	85.54
2	Median	73.00	86.00

3	Std. Deviation	9.494	7.469
4	Minimum	53	73
5	Maximum	86	100

Source: Processed By Researchers (2023)

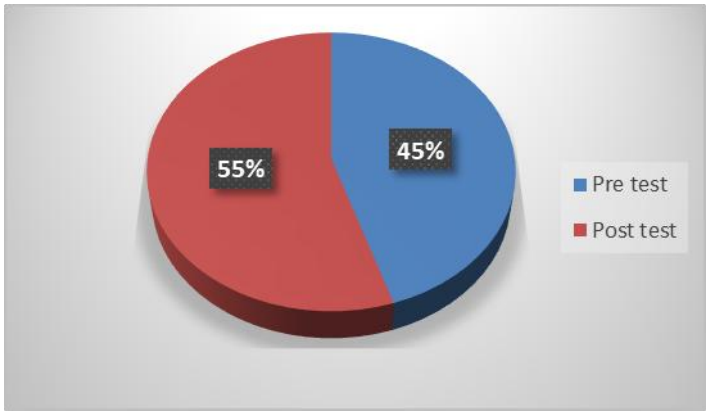

Figure 1.
Average Diagram of Learning Outcomes of Grade XI Students OTKP

The following table presents data on the learning outcomes of Class XI OTKP 3 students in the subject of Creative Products and Entrepreneurship, which includes pretest and posttest scores.

Table 2.
Learning Outcomes in Class XI OTKP 3

No	Name	L/P	Pretest	Postest
1	Agnes Monica	P	53	73
2	Andrian Octavianus	L	56	76
3	Asyila Azzahra	P	66	80
4	Betaria Marbun	P	56	76
5	Bintang Mayrendra Putra	L	66	80
6	Bulan Mayliani Putri	P	76	86
7	Dian Okti Rengganis	P	73	90
8	Dien Nursalna	P	80	93
9	Dinda Dewi Puspitasari	P	53	76
10	Dzulkifli Shobir	L	66	80
11	Eka Ayu Lestari	P	76	93
12	Erina Putri	P	73	90
13	Farischa Muthia Sulistriyo	P	83	100
14	Fauziyah Farabian	P	76	96
15	Jaenabira	P	76	93
16	Kartika Tulus	P	66	86
17	Khalisa Kurnia Putri	P	73	83
18	Lia Sari	P	73	80
19	Muhamad Ivandar Ilham	L	63	76
20	Nabila Utami	P	66	86
21	Naila Cikal Rabani	P	66	83
22	Najwa Firza	P	80	90
23	Natasya	P	86	86

24	Nazwa Aulia	P	73	93
25	Puput Mardhayanty	P	66	80
26	Putri Handayani	P	86	100
27	Putri Lestari	P	70	86
28	Ressa Tatia Febrina	P	53	76
29	Sabrina Sharadova	P	56	86
30	Sayabila Meilani Putri	P	73	90
31	Sella Claudya Siahaan	P	76	86
32	Septiani Cahaya Kirani	P	63	80
33	Septiyanah	P	66	76
34	Siska Nayla Anggraini	P	83	96
35	Prima Dwi Karenina	P	80	93

Source: Processed By Researchers (2023)

Discussion

1. Average Achievement Of Learning Outcomes Before Applying The Project Based Learning Learning Model in The Subject of Creative Products And Entrepreneurship Class XI OTKP 3 At SMK Sasmita Jaya 1

   Data analysis revealed that the average achievement of learning Creative Products and Entrepreneurship before the implementation of PjBL was recorded at 69.91, lower than the standard score of 75. The low learning outcomes of students in the learning process regarding Creative Products and Entrepreneurship materials are caused by the use of models in the learning process that are not optimal. The previously applied model tends to be less active and unpleasant due to the lack of variation in learning methods. This condition makes students act passively, only listening to the teacher's explanation without being involved in much of the learning activity. The lack of opportunities for discussion and interaction in the learning process causes the process that occurs in it to be uninteresting for students. In addition, this monotonous approach also has an impact on the low curiosity of more about the material taught in the learning process. These factors then contribute to student learning outcomes that have not been maximized in the subject of Creative Products and Entrepreneurship. Achievement of student learning outcomes is influenced by two fundamental aspects, namely internal factors (which come from the students themselves) and external factors (which come from the environment). Internal factors include various psychological and physiological components such as students' intellectual capacity, level of motivation to learn, interest in subject matter, ability to concentrate, attitudes and habits in learning, perseverance, socioeconomic conditions, and physical and mental state. Meanwhile, external factors are mainly related to the quality of the learning process, including the effectiveness of the teaching methods used in achieving learning objectives. Based on the results of research in class XI OTKP 3 at SMK Sasmita Jaya 1, the quality of teaching is still relatively low.

2. The Average Achievement Of Learning Outcomes After Applying The Project Based Learning Learning Model In the Subject of Creative Products And Entrepreneurship Class XI OTKP 3 At SMK Sasmita Jaya 1

   Based on the findings of the study, the average value of the students learning outcomes after the implementation of the Project Based Learning model reached 85.54, which significantly exceeded the standard score of 75. This phenomenon is empirically observed in the learning process in class XI OTKP 3, where student active participation

increases significantly through the application of the model. The implementation of Project Based Learning has succeeded in creating varied and conducive learning dynamics through collaborative discussion activities, so as to increase learning engagement and facilitate a more comprehensive conceptual understanding of teaching materials. The Project Based Learning (PJBL) model has proven effective in promoting the development of creativity and entrepreneurial skills among students. This is evident at Politeknik Negeri Kupang, where students have shown significant improvement in creativity as well as in their ability to design and develop business products through the implementation of PJBL (Usman et al., 2024). The results of research conducted at SMK Negeri 2 Dumai and SMK Negeri 1 Timpeh reveal that the implementation of Project Based Learning (PJBL) has significantly improved students' learning outcomes in the subject of Creative Products and Entrepreneurship (Evandel et al., 2023) . This model serves as an effective alternative to conventional teaching methods, as it is capable of enhancing academic achievement and promoting greater student participation (Lestari et al., 2023).

3. Significant Differences Between The Learning Outcomes Of Creative Products And Entrepreneurship Class XI OTKP 3 Before And After Implementing The Project Based Learning Learning Model At SMK Sasmita Jaya 1

   The results of the partial analysis indicated that there was a significant positive influence of the implementation of the Project Based Learning learning model on the improvement of learning outcomes of students in class XI OTKP 3 in the subject of Creative Products and Entrepreneurship at SMK Sasmita Jaya 1. The pretest data showed that students' academic achievement prior to the project-based learning intervention was at an average of 69.91, which is statistically significant differences from the standard score of 75. The findings of the study revealed that there was no significant influence on student learning outcomes before the implementation of the Project Based Learning learning model. However, posttest analysis showed a significant increase in the academic achievement of grade XI OTKP 3 students in the subject of Creative Products and Entrepreneurship after the application of the model, with an average score of 85.54. This data empirically proves the significant influence of Project Based Learning on improving post-intervention student learning outcomes. Based on the analysis of sample data, it can be concluded that there are significant differences in learning outcomes before and after the implementation of the Project Based Learning learning model, by showing a significant improvement. The average pretest score before the application of the model of 69.91 experienced a statistically significant increase to 85.54 in the posttest after the project-based learning intervention.

CONCLUSION

Before the introduction of the Project Based Learning (PBL) model, the learning outcomes of students in class XI OTKP 3 at SMK Sasmita Jaya 1 in the subject of Creative Products and Entrepreneurship had not reached the Minimum Competency Criteria (KKM). Initial findings indicated that students' understanding of the material was below the learning objectives set for them. The improvement in academic achievement through the use of PBL showed results above the KKM, and the average scores demonstrated significant progress, mastery, and acquisition of skills among students. Furthermore, there was a noticeable difference before and after the implementation of PBL, strongly highlighting the effectiveness of the project-based learning approach. Comparative analysis

revealed that the previous decline in average scores was offset by substantial gains, marking a clear distinction after the intervention and setting a newly established benchmark. These findings are robust due to the measurable distribution patterns shown by the data, providing a solid foundation for drawing conclusions. Additionally, the data revealed consistent improvement from the initial to the final assessment, reinforcing the idea that the use of PBL enhances student learning experiences and outcomes. Therefore, the researcher concludes these findings through the lens of relevance and integration of learning technology, which tends to facilitate the achievement of competencies in practical subjects such as the teaching of Creative Products and Entrepreneurship.

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