Implementation of the Project Based Learning (PjBL) Learning Model to Improve Student Learning Outcomes on Design Material at Canva in Informatics Subjects

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A B S T R A C T

This study aims to improve student learning outcomes using the Project Based Learning learning model on Design Material in Canva in Informatics Subjects at SMA Negeri 6 Padang class XII MIPA academic year 2024-2025. This study uses a classroom action research method which is a type of qualitative research that emphasizes the process, designed to achieve improvements in practice and real situations in the classroom. The research subjects were class XII MIPA 1 as many as 36 students. The results of the study can be concluded that student activity in each cycle is increasing. This can be seen from the student learning outcomes that have improved. The average initial value is 61.75 with a percentage of completeness of 33.33% (category is not good) so that cycle I is carried out. In cycle I, student learning outcomes with an average value of 79.58 with a percentage of completeness of 72.22% (Enough) increased from the initial value, but there are still shortcomings so that improvements are needed in cycle II. In cycle II, there was an increase in student learning outcomes with an average score of 84.44 and a completion percentage of 91.67% (very good). The implementation of the Project-Based Learning (PjBL) model is very effective in improving and encouraging student learning outcomes to a better level. With this model, Informatics learning becomes more interesting, interactive, and meaningful, thus helping students achieve optimal results.

A B S T R A K

Penelitian ini bertujuan untuk meningkatkan hasil belajar siswa menggunakan model pembelajaran Project Based Learning pada Materi Design di Canva pada Mata Pelajaran Informatika di SMA Negeri 6 Padang kelas XII MIPA tahun ajaran 2024-2025. Penelitian ini menggunakan metode penelitian tindakan kelas dimana termasuk jenis penelitian kualitatif yang menekankan pada proses, dirancang untuk mencapai perbaikan praktik dan situasi nyata di kelas. Subjek penelitian yaitu kelas XII MIPA 1 sebanyak 36 orang siswa. Hasil penelitian dapat disimpulkan bahwa aktivitas siswa pada setiap siklusnya semakin meningkat. Hal ini dapat dilihat dari hasil belajar siswa yang sudah meningkat. Rata-rata nilai awal 61.75 dengan presentase ketuntasan sebesar 33.33% (kategori tidak baik) sehingga dilakukannya siklus I. Pada siklus I hasil belajar siswa dengan nillai rata-rata 79.58 hasil presentase ketuntasan 72.22% (Cukup) meningkat dari nilai awal, namun masih terdapt kekurangan sehingga masih memerkulan perbaikan pada siklus II. Pada siklus II terdapat peningkatan hasil belajar siswa dengan nilai rata-rata 84.44 hasil presentase ketuntasan nya 91.67% (Sangat baik). Penerapan model pembelajaran Project-Based Learning (PjBL) sangat efektif dalam meningkatkan dan mendorong hasil belajar siswa ke tingkat yang lebih baik. Dengan model ini, pembelajaran Informatika menjadi lebih menarik, interaktif, dan bermakna, sehingga membantu siswa mencapai hasil yang optimal.

1. Introduction

Education in the Industrial Revolution 4.0 Era is a phenomenon that responds to the needs of the industrial revolution by adapting new curricula to the current situation. This curriculum can open a window to the world at your fingertips, for example, by utilizing the Internet of Things (IoT). However, this does not come without challenges for teachers in its implementation. Teachers still lack competencies in critical thinking and problem-solving skills, communication and collaboration skills, creative and innovative thinking skills, and technology and information literacy [1]. The information and knowledge gained are digital, both structured and unstructured, and easily accessible. This requires students to develop independent learning skills because there will be many ways to learn and many accessible resources.

Therefore, the role of teachers is crucial in the learning process for students at school. The teacher's role here is

to provide a good and comfortable learning environment for students and act as a facilitator in the learning process by introducing applications appropriate to the competencies being studied. One such application is Canva. Canva is a media that can support the visual learning process and train students' visual literacy skills. Canva can be accessed via desktop and mobile devices. Thus, users can be creative anytime and anywhere [2].

Professional teachers should be able to select and implement effective learning models to improve students' knowledge and skills. Therefore, teachers are always required to be creative and innovative in improving their teaching competencies to achieve predetermined learning competencies and objectives. Improving a teacher's teaching competency will be very useful in helping students achieve the expected level of learning mastery. However, in reality, many teachers do not consider and pay attention to how to deliver material that aligns with the model used when teaching. This can be seen in teachers who present subject matter according to their own preferences and desires without considering the model used to convey the learning material. This results in many students feeling bored and tired. As a result, students do not understand the material presented, impacting student learning outcomes that are unsatisfactory, as evidenced by the large number of students who do not meet the Minimum Competency (KKM) standards at SMA N 6 Padang.

The Project-Based Learning (PjBL) model is a learning model that uses projects (activities) as the core of learning [3]. Project-based learning is a learning strategy that empowers students to acquire new knowledge and understanding based on their experiences through various presentations. Therefore, when applied to Creative Products and Entrepreneurship learning, it will attract more student participation and help students succeed in the learning process [4]. Project-Based Learning (PjBL) can help students achieve these goals by providing meaningful and real-life learning experiences. The stages and strategies used in implementing PjBL can vary depending on the needs and conditions of each educational institution [5]. Projects in PjBL are built on students' ideas as alternative solutions to specific real-life problems, allowing students to directly experience the problem-solving learning process [6].

Learning outcomes are the abilities students acquire after learning activities [7]. Learning outcomes are specific competencies or abilities achieved by students after participating in the teaching and learning process and include cognitive, affective, and psychomotor skills [8]. Learning outcomes are everything achieved by students through specific assessments established by the educational institution's curriculum [9]. Mastery of learning outcomes can be seen from their behavior,

whether in the form of knowledge, thinking skills, or motor skills. At school, learning outcomes or academic achievement can be seen from students' mastery of the subjects they have taken [10].

Previous research has provided convincing evidence regarding the effectiveness of the Project Based Learning (PjBL) learning model to improve learning outcomes. One study showed that there was an increase in entrepreneurial learning outcomes in creating product designs and solving problems given to 32 students after the implementation of the Project Based Learning learning model [11]. Other research also shows that the implementation of the Project Based Learning learning model can increase the activeness and learning outcomes of class XII BDP 1 students, semester V SMK Negeri 1 Kota Bogor [12]. Therefore, this study aims to improve student learning outcomes using the Project Based Learning (PjBL) learning model on Design Material in Canva in Informatics Subjects at SMAN 6 Padang.

2. Research Method

This study employed classroom action research (CAR), a deliberate observation of the teaching and learning process in the classroom. Classroom action research is a type of qualitative research that emphasizes process and is designed to improve real-world classroom practices and situations. Classroom action research is an observation of learning activities, specifically actions that are intentionally created and occur simultaneously in a classroom [13]. Classroom action research is research conducted by teachers during classroom learning. Through action research, researchers can determine how data is collected [14]. Classroom action research is crucial for teachers because it can solve learning problems that can improve the quality of education in Indonesia [15].

The conceptual framework influences practice over time due to its influence on the development of new accounting standards. Furthermore, the conceptual framework is an activity for providing financial information, structured within a standard framework to facilitate standardization of financial information [16]. The application of the Project-Based Learning (PjBL) learning model can lead to improved student learning outcomes. The conceptual framework design is illustrated in Figure 1.

Figure 1. Draft Conceptual Framework

The classroom action research phase consists of cycles, encompassing planning, implementation, observation, and reflection, each cycle forming a cycle until the research is complete, resulting in data that can be collected to answer the research problem [17]. The details of these stages can be explained as follows: Planning, implementation, observation, and reflection in cycle I. The steps are as follows:

a. Planning: The activities carried out include preparing a Learning Implementation Plan, similar to the project-based learning model, preparing learning media, preparing observation sheets for teacher and student activities, and developing questions.

b. Implementation: The stage where teaching and learning activities take place according to the predetermined learning implementation plan.

c. Observation: This stage occurs during the teaching and learning process and utilizes the students' environment.

d. Reflection: This stage assesses the successes and difficulties of the learning process in cycle I for improvement in the next cycle. The actions in cycle II are the same as those in cycle I. However, the actions taken in cycle II aim to resolve errors that occurred in cycle I so that the teaching and learning process in cycle II achieves improved results. These results are in line with expectations, namely improved student learning outcomes.

After being reduced, the neatly arranged data is presented in narratives, matrix patterns, graphs, or diagrams, making it easier to draw conclusions or improve subsequent action plans. Conclusions about changes are drawn in stages, starting from the beginning (temporary conclusions), continuing, and reaching interrelated final conclusions, with the first conclusion serving as a foundation. Data processing in this study aims to determine student learning outcomes with design materials in Canva using equation 1 and the Respondent Achievement Presentation Level, which will be presented in equation (1) [18].

$$P = \frac{f}{N} \times 100\% \qquad (1)$$

Table 1. Respondents' Achievement Presentation Level

No	Achievement Presentation	Criteria
1	90% - 100%	Excellent
2	80% - 89%	Good
3	51% - 79%	Fair
4	36% - 50%	Poor
5	0% - 35%	Poor

The success indicators in PTK are indicators that serve as benchmarks for success in learning to improve student learning outcomes in MIPA 1 learning. This research was concluded after students experienced an increase in learning outcomes with a minimum completion score of 80.

3. Result and Discussion

Initial Conditions Before conducting this classroom action research, the researcher conducted observations and collected data on the initial conditions of the learning outcomes and interest of the class being treated, namely class XII MIPA 1, in the 2024/2025 academic year. Based on the initial conditions from the daily tests, it can be concluded that the completion rate of class XII MIPA 1 students was 33.33%, indicating that this class was not completing its assignments. Since the completion threshold set by SMA Negeri 6 Padang for Class XII is 80, the study will attempt to implement the Project-Based Learning model to improve student learning outcomes, which will be implemented over several cycles.

3.1. Cycle I

3.1.1. Planning

In this cycle I research, the researcher planned the actions to be implemented, including:

a. Creating a Teaching Program Plan (RPP)

b. The researcher prepared worksheets and explained the steps of the practicum that would be carried out.

c. The program plan was used for 2 x 30-minute lessons with the following details:

1) Apperception (20 minutes).

2) The main activity consists of working on a brochure design project in Canva, exploring student abilities, and creating student worksheets to determine students' knowledge levels (60 minutes).

3) Closing (10 minutes).

d. Student abilities, which step by step will lead students to be able to collaborate in solving a given problem or case.

e. Creating an evaluation tool used to collect data.

f. Student abilities after receiving an action using the Project-Based Learning model.

3.1.2. Implementation of Actions

The implementation of actions in Cycle I was carried out in November 2024. The researcher carried out activities according to the plan, namely:

a. Starting with an explanation to students about the activities they must complete during the activity.

b. Based on information obtained during previous teaching observations, the researcher delivered

material that was directly practiced in the computer laboratory.

c. The researcher observed and assessed the material practiced during the lesson.

d. During the Canva design project, several students were seen communicating with their closest friends about how to use the application.

e. The researcher instructed students who understood to explain how to solve the problem to their friends.

f. The researcher assigned grades based on the individual results of the practical work.

g. The researcher also tested Canva knowledge by providing multiple-choice questions.

3.1.3. Observation Results

The following are the observations the researcher obtained during the first cycle of the research:

a. Several students appeared enthusiastic about understanding the practical material.

b. Whenever they encountered a problem, students immediately asked the researcher about anything they didn't understand.

c. During the practical work, some students encountered difficulties in completing the task and asked their closest friends. However, others encountered difficulties in carrying out the practical work and directly asked the researcher, the teacher.

d. The researcher provided directions to students in a loud voice so that students experiencing similar problems could understand.

3.1.4. Reflection

Based on the field observations, data on student learning outcomes in the first cycle were obtained, which are presented in Table 2.

Tabel 2. Student Learning Outcomes in Cycle I

	Complete	Not Complete	Total
Number of students	26	10	36
Percentage	72.22%	27.73%	100%

The average score was 79.58, and the completion rate was 72.22%. Therefore, the researcher believes that there were weaknesses or obstacles encountered in Cycle I. These weaknesses were:

a. Students had difficulty understanding or were unfamiliar with the location of the menus.

b. Students were not yet familiar with computer operation.

c. Students had difficulty understanding the search function in the element tools in Canva.

d. Students' comprehension levels varied, requiring the researcher to repeatedly explain how to use Canva.

3.2. Cycle II

3.2.1. Planning

In the planning of Cycle II, the researcher, as the teacher, planned the following actions:

a. The researcher will display a PowerPoint presentation on poster design in Canva to help students better understand how to use Canva.

b. The researcher will prepare examples relevant to the designs to be created.

c. The researcher will prepare a worksheet and explain the steps of the practicum.

d. The researcher will prepare an evaluation test to assess knowledge of Canva's tools and the material presented.

3.2.2. Implementation of Actions

As planned, the researcher implemented Cycle II in November. The sequence of actions was as follows:

a. The cycle II action began with prayer, checking student attendance, and explaining the procedures to be implemented in the informatics lesson.

b. All students received a worksheet containing the steps for using Canva to create a poster, which they would practice directly on their respective computers.

c. The researcher prepared a practical exercise on creating a poster in Canva.

d. After preparing the exercise, the researcher provided further guidance on creating the practical assignment.

e. The teacher assisted students in gaining a clearer understanding.

f. To evaluate the problem-solving process, the teacher assisted students in reflecting on or evaluating the problems they had solved.

3.2.3. Observation Results

The following are observations the researcher obtained in class X informatics:

a. During Cycle II, it was clear that students were very enthusiastic about completing the assignments; all students were actively involved in completing the tasks assigned by the researcher.

b. Students were able to explore their ability to organize facts and thoughts by providing opinions based on their own perspectives.

c. Based on the evaluation conducted after correction, the results were in line with the expected achievement indicators.

d. Because of the 36 students in grade XII MIPA 1, only a few students scored below the minimum completion limit.

3.2.4. Reflection

From the results of the evaluation conducted over two weeks, it was clear that all 36 students, only a few, were unable to score above the minimum completion limit. However, errors were still evident due to lack of thoroughness in their work. The learning outcomes of students in Cycle II, who achieved average scores, are presented in Table 3.

Tabel 3. Student Learning Outcomes in Cycle II

	Complete	Not Complete	Total
Number of students	33	3	36
Percentage	91.67%	8.33%	100%

Based on the table above, the average learning outcome score is 84.44 and the completion rate is 91.67% among all students. Therefore, the researcher concludes that the implementation of the Project-Based Learning model was successful.

3.3. Discussion

The table between cycles above shows a remarkable improvement in student learning outcomes for each indicator required to be mastered after the intervention. This improvement in learning outcomes can be seen from the comparison of the initial scores, Cycle I, and Cycle II.

Tabel 4. Percentage of student learning outcomes completion in cycle I and cycle II

	Average	Percentage
Initial Value	61.75	33.33%
Cycle I	79.58	72.22%
Cycle II	84.44	91.67%

Based on the table above, we can conclude that this classroom action research experienced significant success in cycle II, so it was not necessary to continue to cycle III. Therefore, the hypothesis was proven where the implementation of the Project Based Learning model can improve student learning outcomes in informatics subjects for class XII MIPA 1 students at SMAN 6 Padang.

4. Conclusion

The results of the study can be concluded that student activity in each cycle is increasing. This can be seen from the student learning outcomes that have increased. The average initial value is 61.75 with a completion percentage of 33.33% (not good category) so that cycle I is carried out. In cycle I, student learning outcomes with an average value of 79.58 with a completion percentage of 72.22% (Enough) have increased from the initial value, but there are still shortcomings so that improvements are still needed in cycle II. In cycle II, there is an increase in student learning outcomes with an average value of 84.44 with a completion percentage of 91.67% (Very good). The application of the Project-Based Learning (PjBL) learning model is very effective in improving and encouraging student learning outcomes to a better level. With this model, Informatics learning becomes more interesting, interactive, and meaningful, thus helping students achieve optimal results.

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