Optimizing the Potential of Creativity and Student Learning Outcomes Using the PJBL Learning Model in PKK Subjects at SMK Negeri 6 Surabaya

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Article Info	Abstract
   	This study was conducted to analyze the optimization of creativity potential and student learning outcomes in the PKK subject. The method used was Classroom Action Research (CAR) with two cycles, involving 31 students of class XI KC 1 and located at SMKN 6 Surabaya. The results of the study showed a significant increase in the cognitive, psychomotor, and creativity aspects of student learning. The completion of learning the cognitive aspect using the N-Gain test analysis resulted in an increase from 55%. to 71%, with a high category. The learning outcomes of the psychomotor aspect also increased with the analysis using the mean, namely cycle I of 75 to 86 in cycle II. Student creativity increased from cycle I by 68% and cycle II by 86%. Therefore, the optimization of the PJBL model in PKK competencies is said to have succeeded in achieving the completion criteria with a very good category.

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1. INTRODUCTION

Vocational education has a major role in forming a young generation that is technically competent, as well as creative and adaptive to changing times. The main challenge in vocational schools is designing a learning process that can explore and develop students' potential to the maximum, both in terms of creativity and academic achievement. Creativity is a key skill in facing the challenges of the Industrial Revolution 4.0 and Society 5.0, as emphasized by the OECD (2020) that creativity is a 21st century competency that must be fostered early in education. On the other hand, optimal learning outcomes are an indicator of the success of the learning process, so that the two cannot be separated in the context of developing vocational school students.

In PKK competency, students are required not only to understand entrepreneurial theory and create innovative products. However, the reality in the field shows that PKK learning still tends to be conventional and focuses on delivering material theoretically. This causes students to be less actively involved, so that their creativity potential and learning outcomes have not developed optimally. Based on a study by Hartono (2019), learning that is only oriented towards cognitive knowledge tends to inhibit the development of students' critical and creative thinking skills. Therefore, a learning model is needed that is able to stimulate active student involvement and encourage them to produce real work.

The PjBL learning model is the right alternative in facing today's educational challenges. This approach encourages active involvement of students in completing real projects related to everyday life as part of the learning process. Through PjBL, various

important 21st century skills such as critical thinking, collaboration, creativity, and communication can be developed in an integrated manner to equip students to face the world of work and life more adaptively. As explained by Acim (2024), this model allows students to learn meaningfully and contextually because they are faced directly with real problems that must be solved. In addition, PjBL also provides opportunities for students to explore ideas, design problem solving, and produce real products that can be evaluated. With these characteristics, the PjBL model is very relevant to be applied in PKK learning which focuses on practice and results orientation.

The implementation of PjBL can significantly improve learning outcomes, both in the cognitive domain and practical skills, through active involvement in the process of designing and completing meaningful learning projects. Research by Farihatun (2019) shows that students who learn using PJBL show increased academic achievement, emotional involvement, and learning satisfaction. This is due to the student-centered learning process, so they feel more in control of their learning activities. In addition, projects worked on in PJBL provide direct experience that can strengthen students' conceptual understanding and practical skills.

In the context of SMK Negeri 6 Surabaya, the implementation of the PJBL model in PKK subjects has great potential to be optimized. This school has adequate resources, both in terms of facilities and diverse student potential, especially in the fields of art, beauty, and entrepreneurship. However, this potential has not been fully explored due to the limited use of innovative learning approaches. According to Sudjimat (2022), optimization of learning in SMK must be based on strengthening entrepreneurial character, creativity, and collaboration, all of which can be facilitated through PJBL. Therefore, the implementation of PJBL is a strategic step to integrate meaningful learning with the achievement of curriculum objectives in SMK.

It is also important to note that student creativity does not only come from teacher stimulus, but also from challenging and enjoyable learning situations. A learning environment that provides freedom to think, explore ideas, and be creative can increase students' motivation and confidence in expressing their abilities. Based on Vygotsky's theory which was redeveloped by Widhayanti, et al. (2024), the learning process involving scaffolding (gradual support) in project activities has been proven effective in generating creativity and increasing learning retention. Thus, the implementation of PJBL also contributes to creating a productive and enjoyable learning environment.

In line with the Independent Curriculum which emphasizes strengthening the Pancasila Student Profile, the PJBL model provides ample space for students to develop character traits such as mutual cooperation, independence, and critical thinking. Through collaborative projects, students learn to work together, manage time, resolve conflicts, and make decisions, all of which are part of the soft skills competencies that are much needed in the world of work. As explained in the Independent Curriculum Implementation Guide (Kemdikbudristek, 2022), project-based learning is one of the recommended approaches to building students' character and competencies as a whole. Thus, the implementation of PJBL in PKK not only improves cognition but also students' character.

Optimal student learning outcomes are a reflection of the success of planned learning that is in accordance with the needs of students. In its implementation, learning outcomes are not only seen from the cognitive aspect, but also affective and psychomotor. According to Sitompul (2022), meaningful learning is learning that is able to connect knowledge with real experiences of students, and this can be facilitated effectively through a project-based approach. In this context, PKK learning can be a strategic medium in fostering students' attitudes of responsibility, curiosity, and self-confidence to create products that are useful and economical.

Based on the various problems that have been described, it is important to conduct research to examine the effectiveness of the PjBL learning model in optimizing the potential for creativity and learning outcomes of students in the PKK subject at SMK Negeri 6 Surabaya. It is hoped that this research can be used as a reference by educators and policy makers in developing adaptive, contextual learning strategies that are in accordance with the needs of the global era. Through this approach, students are not only recipients of material, but also play an active role in building and managing their learning process.

2. RESEARCH METHOD

This study uses the type of Classroom Action Research (CAR). Classroom Action Research is classified as quantitative and qualitative research. Classroom Action Research is different from descriptive research or experimental research. In descriptive research, what is described is the object at the time of the research, while experimental research is described regarding the cause and effect after a treatment. The research was carried out in two learning cycles, if the action is still not good, an evaluation will be carried out and carried out in the next cycle. Therefore, the research can be continued to cycle II by planning appropriate improvements, so that the research results obtained are better, as described as follows (Arikunto, 2019)
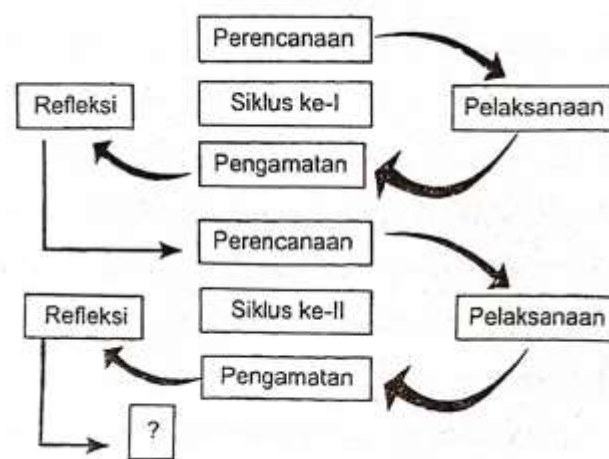

Figure 1. Classroom Action Research Design
(Source: Arikunto, 2019)

The explanation of the process above is:
a. Planning
   Before starting the research, researchers need to design the problem formulation, set objectives, and prepare an action plan to be implemented. This step includes the preparation of research instruments such as observation sheets, questionnaires, and interview guides. In addition, researchers must also prepare learning tools, including teaching modules, student worksheets (LKPD), and assessment instruments.
b. Implementation of Actions and Observations
   This stage involves the implementation of actions in the form of implementing a project-based learning model (PJBL) to help build students' conceptual understanding. Along with the implementation, observation activities are carried out to directly observe the process and results of PJBL implementation in the classroom.

c. Reflection

The reflection stage is carried out by reviewing and evaluating data obtained from the results of observations of the implementation of the action. This process aims to examine the extent to which the actions implemented have an impact on learning and achieving goals. Reflection is an important part of research because it functions as a basis for determining the sustainability of the action, whether it is necessary to carry out a further cycle or simply stop if the success indicators have been achieved.

The population of the study included all students of grade XI Beauty School of SMKN 6 Surabaya consisting of 3 classes with a total of 105 students, with a sample taken by purposive sampling of 31 students of grade XI KC 2. Data collection instruments included test questions and questionnaires. The data collected included information on cognitive, psychomotor and creativity learning outcomes of students in PKK learning. Data were collected through test questions consisting of pretest and posttest, surveys including questionnaires distributed to students to obtain data on their creativity inlearningPKK.

The data to be obtained from this test question is presented in the form of a final score and then the N-gain and mean tests are carried out. This is done in cycles 1 and 2. Furthermore, it is done to obtain data on student creativity in PKK learning. The instrument is compiled based on the theory that has been obtained and compiled using a Likert scale using an assessment of 1 to 5. The scores obtained on the creativity instrument are then presented in the form of a percentage. The following is a reference table to determine the percentage assessment criteria.

Table 1. Assessment Criteria for Student Questionnaire Percentage

No	Level of Achievement	Category
1	0% - 20%	Very bad
2	21% - 40%	Not good
3	41% - 60%	Enough
4	61% - 80%	Good
5	81% - 100%	Very good

(Source: Riduwan, 2018, p.15)

3. RESEARCH RESULTS AND DISCUSSION

The learning outcomes of students in the cognitive domain were measured through the implementation of pre-tests and post-tests. Learning completion was determined based on the Learning Objective Achievement Criteria (KKTP), namely with a minimum score of 75. The success of improving learning outcomes was analyzed using the N-Gain calculation with an effective category if the N-Gain value exceeded 65. In cycle I, the average pre-test score of students was 55.34. After implementing the Problem Based Learning (PBL) learning model, the average post-test score increased to 78.62, and all students achieved completion. This shows that the PBL model contributes positively to improving students' conceptual understanding. In cycle II, there was an increase in the average pre-test score to 73.96, and the post-test score increased further to 92.06. This increase further strengthens that the continuous implementation of the PBL model is effective in improving students' cognitive learning outcomes. Further analysis of this increase was carried out through the N-Gain calculation.
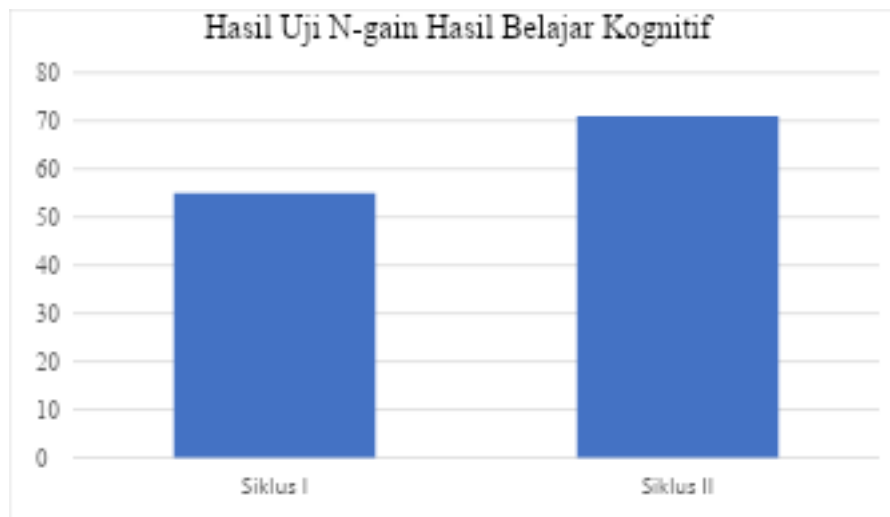
Figure 2. Results of the N-gain Test of Cognitive Learning Outcomes

Based on Figure 2, the results of the N-Gain analysis in cycle I of 0.55 are categorized as moderate effectiveness with a percentage of 55%. While in cycle II, N-Gain increased to 0.71 with an effectiveness level of 71%, with a high category.

The learning outcomes of the psychomotor domain of students were measured using a practical instrument by carrying out practical activities of decorating gifts in the PKK subject. Students were declared complete if the learning outcomes or scores obtained were more than or equal to the KKTP, namely 75. The success criteria in this study had achievements in each psychomotor aspect with an average score of >80 which is presented in Figure 3.
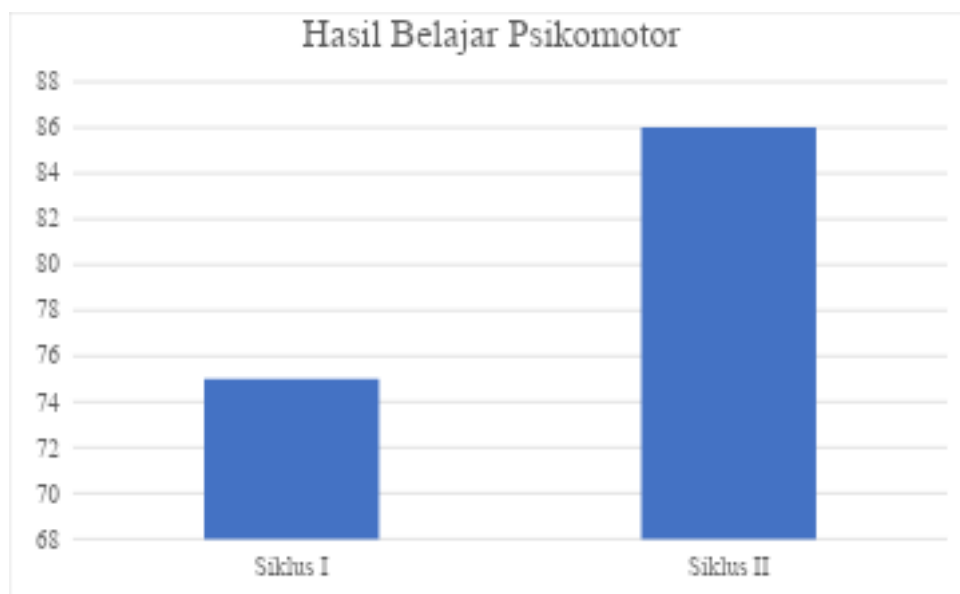

Figure 3. Average Psychomotor Learning Outcomes

The results of students' psychomotor learning were measured through delivery practice. The average in the cycle was 75. The results of the practice showed that the completion criteria had not been achieved, therefore improvements were made which then resulted in results in cycle II of 86. Based on these results, it can be seen that there was an increase in psychomotor learning outcomes. Furthermore, to obtain data related to student creativity,

a questionnaire was distributed that had been prepared and would be filled in by 31 students. The results of the data are presented in the following diagram.

Figure 4. Percentage of Student Creativity Results

Based on the diagram above, it can be seen that there is an increase in each statement. The percentage has increased from cycle I by 68% and cycle II by 86%. Therefore, the optimization of the PJBL model on PKK competency is said to have succeeded in achieving the completion criteria with a very good category.

Discussion

The results of the analysis show that the optimal implementation of the PjBL learning model provides a significant contribution to improving student learning outcomes, both in cognitive and psychomotor aspects. The PjBL model is a learning approach that is oriented towards product creation, either in the form of goods or services, such as designs, schemes, written works, art, technology, and other forms of work as a result of the learning process. This approach places students as the main actors in learning activities, encouraging them to be more active, have initiative, and be involved in the process of exploring and applying knowledge. In addition, PjBL also provides space for students to convey the results of their work through presentations or evaluative discussions (Santoso, 2022). In line with that, Mekarisce and Sari (2022) stated that the PjBL model gives students the freedom to work independently, think creatively, and build understanding through direct experience, because this learning is innovative and student-centered (student-centered learning).

The PjBL learning model has been the focus of many studies, one of which is by Rati et al. (2017) who stated that this approach emphasizes the ability of students to learn independently through collaboration in solving problems faced. In this process, students are directed to produce a real project that can be appreciated both physically and non-physically. In line with this view, Yani and Taufik (2023) emphasized that PjBL is an integrated learning model, where students are directly involved in learning projects that encourage them to be responsible for their own learning process until they achieve the final result in the form of a product, such as written work, drawings, designs, or other forms of output. The application of this model not only improves learning outcomes but also has a positive impact on increasing student creativity.

The increase in students' learning creativity occurred as a result of the implementation of learning designed using the PjBL approach. This finding is in line with the results of

research conducted by Setiawan (2021), which showed an increase in the number of students with a high creativity category after participating in project-based learning. In cycle I, there was an increase of four students, and in cycle II there were six more students who fell into the high learning creativity category.Actiontaken to increase creativity is by integrating the PjBL approach in the learning process. In line with that, Nugraha (2023) stated that creativity is not only influenced by intelligence, talent, and learning outcomes, but affective and psychomotor factors also support the creation of creative expressions as a whole.

4. CONCLUSION

Based on the research results, it can be concluded that the implementation of the PjBL model has proven effective in improving student learning outcomes, both in the cognitive and psychomotor domains. Cognitive learning outcomes showed a significant increase from cycle I to cycle II. The average post-test score increased from 78.62 in cycle I to 92.06 in cycle II. This is supported by the N-Gain analysis which shows an increase in learning effectiveness from the moderate category (0.55) to high (0.71).

In the psychomotor domain, the results of the delivery practice showed an increase from an average value of 75 in cycle I to 86 in cycle II, which means it has exceeded the completion criteria. In addition, the level of student creativity also increased from 68% to 86%. Thus, the application of the PBL model in learning the expertise competency of Beauty Salon has proven successful in improving students' understanding of concepts, practical skills, and creativity as a whole.

5. BIBLIOGRAPHY

Acim, A., Maysuri, T., & Sopacua, J. (2024). Pengaruh Penerapan Model Pembelajaran Project Based Learning Dalam Upaya Meningkatkan Hasil Belajar Pada Sma Negeri 3 Maluku Tengah. *JIM: Jurnal Ilmiah Mahasiswa Pendidikan Sejarah*, *9*(4), 566-580.DOI : https://doi.org/10.24815/jimps.v9i4.32918

Arikunto, Suharsimi dkk. 2019. Penelitian Tindakan Kelas. Jakarta: Bumi Askara

Farihatun, S. M., & Rusdarti, R. (2019). Keefektifan pembelajaran project based learning (PJBL) terhadap peningkatan kreativitas dan hasil belajar. *Economic Education Analysis Journal*, *8*(2), 635-651. DOI : https://doi.org/10.15294/eeaj.v8i2.31499

Hartono, D. P., & Asiyah, S. (2019). PjBL untuk meningkatkan kreativitas mahasiswa: sebuah kajian deskriptif tentang peran model pembelajaran PjBL dalam meningkatkan kreativitas mahasiswa. *Jurnal Dosen Universitas PGRI Palembang*. Retriveid from : https://jurnal.univpgri-palembang.ac.id/index.php/prosiding/article/view/2694

Kemdikbudristek. (2022). Panduan Implementasi Kurikulum Merdeka. Jakarta: Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.

Mekarisce, A. A., & Sari, R. E. (2022). Penerapan Model Project Based Learning dalam Pembuatan Dokumen Rencana Strategis Puskesmas pada Mata Kuliah Manajemen Strategik. In *Prosiding Seminar Nasional" Sport Health Seminar With Real Action" Ilmu Kesehatan Masyarakat Universitas Negeri Malang*. Retriveid from : http://conference.um.ac.id/index.php/starwars/article/view/3684

Nugraha, I. R. R., Supriadi, U., & Firmansyah, M. I. (2023). Efektivitas strategi pembelajaran project based learning dalam meningkatkan kreativitas siswa. *Jurnal Penelitian Dan Pendidikan IPS*, *17*(1), 39-47. Retriveid from : http://ejournal.unikama.ac.id/index.php/JPPI

Rati, N. W., Kusmaryatni, N., & Rediani, N. (2017). Model pembelajaran berbasis proyek, kreativitas dan hasil belajar mahasiswa. *JPI (Jurnal Pendidikan Indonesia)*, *6*(1), 60-71. DOI : https://doi.org/10.23887/jpi-undiksha.v6i1.9059

Riduwan. 2018. Skala Pengukuran Variabel-Variabel Penelitian. Bandung: Alfabeta.

Santoso, G. (2022). Revolusi Pendidikan di era society 5.0; pembelajaran, tantangan, peluang, akses, dan keterampilan teknologi. *Jurnal Pendidikan Transformatif*, *1*(2), 18-28.

Setiawan, L., Wardani, N. S., & Permana, T. I. (2021). Peningkatan kreativitas siswa pada pembelajaran tematik menggunakan pendekatan project based learning. *Jurnal Basicedu*, *5*(4), 1879-1887. DOI : https://doi.org/10.31004/basicedu.v5i4.1068

Sitompul, L., & Nababan, E. B. (2022). Implementasi Pembelajaran Bermakna Melalui Metode Project Based Learning (PJBL) Pada Materi Teks Prosedur Kelas XI. *Kode: Jurnal Bahasa*, *11*(2), 149-166.

Sudjimat, D. A. (2022). Mencetak SDM terampil dan berkarakter melalui implementasi model IPJBL pada pendidikan vokasi di era industri 4.0. DOi : http://repository.um.ac.id/id/eprint/2471

Widayanthi, D. G. C., Subhaktiyasa, P. G., Hariyono, H., Wulandari, C. I. A. S., & Andrini, V. S. (2024). *Teori Belajar dan Pembelajaran*. PT. Sonpedia Publishing Indonesia.

Yani, L. I., & Taufik, T. (2023). Penerapan Model *Project Based Learning* Dalam Pembelajaran Tematik Terpadu Di Kelas V Sekolah Dasar (Studi Literatur). Didaktik : E-Jurnal Inovasi Pembelajaran SD Universitas Negeri Padang, 8(2). DOI : https://doi.org/10.36989/didaktik.v8i2.617