

The Influence of project based learning on student creativity in developing entrepreneurship-based educational games tools

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Abstract

Creativity is an important skill in accordance with 21st century learning which demands 4C skills. Every lesson is expected to apply an appropriate model, one of which is project based learning. The aim of this research is to determine the effect of implementing PjBL on student creativity in entrepreneurship-based educational games media development courses. This study is a one group pretest-postet experiment with the sample being 5th semester students of the early childhood education program, Jambi University. The data collection technique uses project assessment with the paired sample t-test analysis technique. The results showed that the 2-way significance value (t-tailed) was $0.00 < 0.05$. Therefore, it can be stated that the application of project based learning influences student creativity in developing entrepreneurship-based educational games tools.

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INTRODUCTION

Creativity is one of the soft skills in the form of a skill related to the ability to see how to solve a problem with a form of thinking where students are required to think logically, reason and analyze a given problem. Munandar found that student learning creativity can be measured based on five indicators, namely fluency, flexibility, originality, elaboration, and evaluation (Setiawan et al., 2021). Fluency in thinking is the ability of students to raise many questions, flexibility in thinking is the ability of students to come up with solutions from different points of view, authenticity is the ability of students to generate ideas they have, elaboration is students' ability to detail the details of an object, idea or situation, and evaluation is the ability to make decisions in open situations (Agustiana et al., 2020).

Based on the results of the learning program plan (RPS) analysis, in the previous semester the entrepreneurship-based APE (Alat Permainan Edukatif/Educational games tools) development course had not implemented the projectbased learning (PjBL) model and this resulted in the projects produced by students still lacking innovation and creativity. Therefore, an appropriate learning model is needed, one of which is using a project based learning model. According to Maryati (2017), the use of project based learning models

can significantly increase children's creativity. Isoni also believes that project based learning is a learning activity that has practical values which are very important for skill development, personal development and the development of children's creativity (Agustina, 2021). The application of project based learning can encourage the growth of creativity in children so that it can also become an achievement for the children themselves (Alayinda et al., 2019).

The PjBL model is student-centered learning by carrying out a project or activity as the core of learning, where students will look for problems as the first step in gathering new knowledge from real learning experiences (Sari et al., 2019). Apart from that, Agustina (2021) also defines that project based learning is a learning method motivated by constructivism theory which provides many opportunities and freedom for students to create a more active and interesting learning environment. Isoni also believes that project based learning is a learning activity that is used to train children's abilities in solving problems encountered in everyday life (Agustina, 2021). Based on the opinions of several experts above, it can be concluded that the project based learning (PjBL) model is a student-centered learning model and provides freedom and opportunities for students to be more active and creative.

Alayinda et al (2019) explained that implementing PjBL can encourage the growth of creativity in children so that it can also become an achievement for the children themselves. This model can be applied to children both individually and in groups. This activity provides opportunities for each child to develop the abilities and skills they already have or have mastered which in the end can create optimal creativity in children. The implementation of PjBL is in accordance with the demands of 21st century learning, namely where students must have at least four main skills, namely, the ability to think critically, creatively, communicate and collaborate or often known as 4C competencies (creativity, critical thinking, collaboration and communication). Therefore, the aim of this research is to determine the effect of implementing the project based learning model on student creativity in developing entrepreneurship-based educational game tools.

METHOD

This research is an experimental study with one group pretest-posttest by comparing one class before and after treatment. The sample in this study were students in the 5th semester of the early childhood education teacher education study program Jambi University who were carrying out courses in developing entrepreneurship-based educational game tools. Data collection techniques using project assessment techniques and data analysis using the T test. The research instrument contains indicators of creativity which can be seen in table 1 below:

Tabel 1. CreativityIndicators

Indicators	Descriptor
Resolusi (Problem Solving)	Students are able to find educational games tools problems that exist in ECE institutions
	Students are able to analyze educational games tools problems that exist in ECE institutions
	Students are able to determine solutions to educational games tools problems that exist in ECE institutions
Elaborasi (Details)	Students are able to name the types of educational games tools that exist in ECE institutions
	Students are able to develop designs for of educational games tools development in ECE institutions
Novelty	Students are able to carry out innovative entrepreneurship-based educational games tools development
	Students are able to analyze in detail the design of educational games tools development innovations and related development aspects

Assessment using a Likert scale ranging from 1-4. Scale 1: less; scale 2: sufficient; scale 3: good; and scale 4: very good. Treatment was carried out over 8 meetings starting from meeting 9 to 16.

RESULTS AND DISCUSSION

Result

The research was carried out by providing treatment in 8 meetings. At meetings 9-12, students created an APE development project based on the use of used goods, and at meetings 13-16 carried out the development of APE based on educational game tools with the integration of technology. The following are the results of descriptive analysis which aims to provide an overview or description of data seen from the calculated average (mean), standard deviation, maximum and minimum values. The following are the results of descriptive statistical testing in table 2:

Tabel 2. Result of descriptive analysis

	Pretest	Posttest
N	9	9
Minimum	11	20
Maximum	19	26
Sum	142	208
Mean	15.78	23.11
Std. Deviation	2.386	1.900
Variance	5.694	3.611

The t-test is used to test that the independent variable is able to explain the dependent variable well. The following is a zx table that shows the results of hypothesis testing.

Based on table 3, it can be concluded that the 2-way (t-tailed) significance value is $0.00 < 0.05$. So there is a difference in point scores between the pretest and posttest. Therefore, it can be stated that H_0 is rejected and H_a is accepted, the application of project based learning influences student creativity in developing entrepreneurship-based educational game tools.

Discussion

Creativity is very important for students, especially in creating innovation, which in this case is developing entrepreneurship-based educational game tools. This is in line with the opinion of Wulandari (2016) who believes that creativity provides benefits from a broad and narrow scope. In a broad sense, creativity can be used to face the challenges of modern life in the 21st century. Meanwhile, in a narrow sense, creativity can develop students' potential in learning. Creativity makes students dare to create new ideas based on analysis of needs and problems in the field. Prasrihamni et al (2022) explain that innovation is basically a necessity. After receiving the innovation process, education becomes a more exclusive education in encouraging the learning success expected by the educational unit.

The application of the project based learning model in this entrepreneurship-based educational game tool development course has proven successful in increasing student creativity, because PjBL has a clear syntax so that students can develop their ideas through the correct stages. In accordance with the opinion of Sakilah et al (2020) who explain that PjBL is a learning model that is able to increase student learning motivation, improve critical thinking skills, improve student skills, improve communication skills, improve collaboration skills and problem solving abilities. In implementing PjBL, students are invited to work together and carry out appropriate projects starting from problem analysis, designing initial designs, monitoring and guidance, trials and evaluation. This means that the projects produced by students are expected to be in accordance with educational based games development needs. Hartono and Puji reveal the advantages of the Project Bases Learning learning model as follows (Yani et al., 2020): (1) makes students motivated to learn in making projects; (2) make students more creative and innovative in learning and able to solve problems; (3) increasing

collaboration, namely students need to work together in groups and be able to create a pleasant atmosphere; (4) as well as creating scientific attitudes such as thoroughness, honesty, responsibility and creativity. Based on the advantages of the project based learning model, it can make students more creative in learning, this model will be able to increase student creativity in learning.

CONCLUSION

The implementation of project based learning in the entrepreneurship-based educational game tool development course is effective in increasing student creativity in developing meaningful educational based games for early childhood. Through the PjBL model, students are actively involved and this model is in accordance with the demands of 21st century learning which emphasizes 4C capabilities. Future research can apply the PjBL model in other courses.

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REFERENCES

- Agustiana, I. G. A. T., Agustini, R., Ibrahim, M., & Tika, I. N. (2020). Efektivitas Model OPPEMEI untuk Meningkatkan Kemampuan Berpikir Kreatif Mahasiswa. *Journal of Education Technology*, 4(2), 150–160 <https://doi.org/10.23887/jet.v4i2.25343>
- Agustina, P. (2021). Kontribusi Project Based Learning Terhadap Stimulasi Pengembangan Kreativitas Anak Usia Dini. *Early Childhood Education and Development Journal*, 3(1), 27-34.
- Alayinda, A., Ali, M., & Yuniarni, D. (2019). Peningkatan Kreativitas Melalui Metode Proyek di PAUD Aisyiyah Busthanul Atfhal 3 Pontianak Tenggara. *Jurnal Pendidikan dan Pembelajaran Khatulistiwa (JPPK)*, 8(3). <http://dx.doi.org/10.26418/jppk.v8i3.31902>
- Alzoubi, A. M., Al Qudah, M. F., Albursan, I. S., Bakhiet, S. F., & Abduljabbar, A. S. (2016). The Effect of Creative Thinking Education in Enhancing Creative Self-Efficacy and Cognitive Motivation. *Journal of Educational and Developmental Psychology*, 6(1), 117–130. <https://doi.org/10.5539/jedp.v6n1p117>
- Anwar, A., Amir, Z., & Sari, I. K. (2020). Pengaruh Project Based Learning Terhadap Motivasi Belajar Sekolah Dasar Negeri 167 Pekanbaru. *JMIE (Journal of Madrasah Ibtidaiyah Education)*, 4(1), 127-142.
- Astuti, R., & Aziz, T. (2019). Integrasi Pengembangan Kreativitas Anak Usia Dini di TK Kanisius Sorowajan Yogyakarta. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 3(2), 294. <https://doi.org/10.31004/obsesi.v3i2.99>
- Ernawati, M. D. W., M, D., Asrial, & Muhaimin. (2019). Development of Creative Thinking Skill Instruments for Chemistry Student Teachers in Indonesia. *International Journal of Online and Biomedical Engineering*, 15(14), 21–30. <https://doi.org/10.3991/ijoe.v15i14.11354>
- Natty, R. A., Kristin, F., & Anugraheni, I. (2019). Peningkatkan kreativitas dan hasil belajar siswa melalui model pembelajaran project based learning di sekolah dasar. *Jurnal Basicedu*, 3(4), 1082-1092.
- Prasrihamni, M., Marini, A., Nafiah, M., & Surmilasari, N. (2022). Inovasi Pendidikan Jenjang Sekolah Dasar Dalam Pelaksanaan Pembelajaran Di Era Digital. *JRPD (Jurnal Riset Pendidikan Dasar)*, 5(1), 82-88.
- 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.
- Wulandari, R. (2016, January). Menumbuhkan Kreativitas Melalui Model Pembelajaran Berbasis Proyek. In *Prosiding Seminar Nasional Pendidikan Sains 2016* (pp. 849-857). Program Studi Pendidikan Sains Program Pascasarjana Universitas Negeri Surabaya.

Yani, L. I., & Taufina, T. (2020). penerapan model project based learning dalam pembelajaran tematik terpadu di kelas V sekolah dasar (studi literatur). *e-Jurnal Inovasi Pembelajaran Sekolah Dasar*, 8(3), 206-217.