Edusentris: Jurnal Ilmu Pendidikan dan Pengajaran
p-ISSN 23560703 | e-ISSN 24422592
https://ejournal.upi.edu/index.php/edusentris/index

APPLICATION OF PROJECT BASED LEARNING MODEL ON GEOGRAPHY LEARNING

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ABSTRACT

This article examines the impact of project-based learning (PBL) models on the learning process. Project-based learning engages participants directly in tasks and projects, fostering experiential and active learning. The study employs a systematic review design to analyze how PBL affects educational outcomes. Through a comprehensive literature search, the author identified relevant articles using three search strategies and six inclusion and exclusion criteria. The search resulted in seven articles from six different journals published by three international publishers. The findings indicate that project-based learning models have a significant positive influence on the learning process, enhancing student engagement and educational effectiveness.

ARTICLE INFO

Article History:

Submitted/Received: 17 January 2023

First Revised: 15 February 2023

Accepted: 23 February 2023

First Available online: 1 March 2023

Publication Date: 1 March 2023

Keywords: *Project-based learning, geography, systematic review*

1. INTRODUCTION

21st-century education demands that students master a range of skills. These skills are aligned with the four pillars of learning: mastering material (learning to know), acquiring practical work skills (learning to do), developing basic cognitive competencies and personal identity (learning to be), and engaging actively in group discussions (learning to live together) (Scott, 2015). Essential 21st-century skills include creative thinking, critical thinking, collaboration, and communication (Suyanto et al., 2019).

The objectives of learning geography, as outlined in Minister of Education and Culture Regulation Number 65 of 2013, are: (1) for students to understand spatial patterns, environments, and regions; (2) for students to master fundamental skills in data collection and information retrieval; (3) for students to exhibit environmentally responsible behavior and wisely utilize natural resources while showing tolerance towards national culture; and (4) for students to develop a sense of patriotism, pride in their Indonesian identity, and responsibility towards the Unitary State of the Republic of Indonesia (NKRI) based on Pancasila and the 1945 Constitution (Rofifah, 2020).

However, most geography instruction in schools continues to rely on conventional teaching methods. This traditional approach often lacks interactive elements such as discussions, questioning, practical work, and project creation, which can lead to student disengagement and boredom (Sunendar et al., 2020). Students frequently perceive geography lessons as purely theoretical with little practical application (Sumarmi, 2012).

To address these issues, researchers propose using a project-based learning model. This model aims to enhance learning motivation, foster creativity, generate innovative ideas, and develop critical thinking skills by engaging students in real-world problem-solving activities.

Project-based learning, as defined by The George Lucas Educational Foundation (2005), is a curriculum-driven and standards-based approach. This method involves starting with guiding questions and engaging students in collaborative projects that integrate various materials from the curriculum. In project-based learning, guiding questions or problems are developed to suit diverse learning styles, allowing students to explore content through various methods and collaborative experiments. The approach focuses on investigating real-world problems and integrating subject matter across the curriculum, providing students with an in-depth exploration of relevant issues. Project-based learning encourages students to

undertake abstract and intellectual tasks, exploring, assessing, interpreting, and synthesizing information in meaningful ways.

According to Sahroni (2022), project-based learning offers teachers the opportunity to manage the classroom dynamically, fostering full participation. Zubaidah et al. (2022) support this view, noting that project-based learning is an innovative approach involving complex activities that enhance creativity and problem-solving skills. Mukarroma (2023) further highlights the benefits of this model, including increased interactivity, independence, and deeper understanding of the material. Nuryatin et al. (2023) also emphasize that project-based learning can boost student engagement and allow for the free development of students' potential.

However, the project-based learning model also has its drawbacks. Sahroni (2022) outlines several disadvantages: it can be time-consuming, costly, and demanding of skilled teachers and various resources. Additionally, it may involve challenges such as ensuring that all students fully understand the topic when working in different groups. Despite these challenges, the model's ability to enhance motivation, problem-solving skills, collaboration, and communication remains significant.

2. METHOD

The authors employed three strategies to identify relevant articles for this study. First, articles were sourced from the top three education publishers: Science Direct, Taylor and Francis, and Sage Publications. Using the keyword "project-based learning," the search was restricted to the period from January 2019 to September 2023, resulting in 520 articles.

Subsequently, the second author reviewed these articles, selecting those that specifically examined the impact of project-based learning models on aspects such as learning motivation, outcomes, and creativity.

The selection of articles was based on six criteria derived from previous systematic literature reviews. The article must focus on the impact of project-based learning models. Research subjects should include teachers, educators, and students. The study must involve case studies, experiments, or similar research designs. Articles must be published between January 2019 and September 2023. Only articles published in English were considered. The selected articles must be published in reputable journals.

Out of the 520 articles initially identified, the author applied the inclusion/exclusion criteria to filter the articles. This process is detailed in Figure 1, leading to the final selection of studies for analysis.

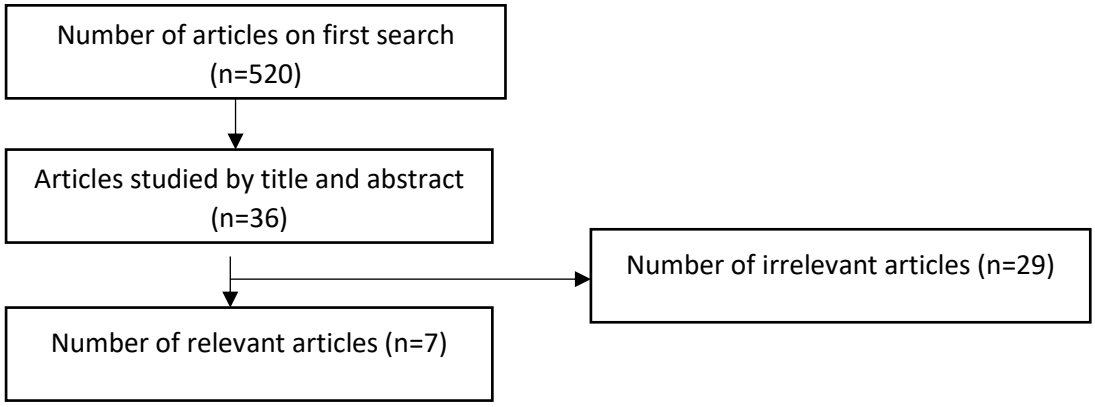

Figure 1. Selection Process

The initial step taken by the authors involved gathering 520 articles through the application of three search strategies. The authors then filtered these articles by reviewing their titles, which resulted in 36 articles remaining for further consideration. Next, the authors assessed the relevance of these articles by reading their abstracts in full. During this stage, 29 articles were excluded as they did not align with the research topic concerning project-based learning models. To ensure a focused examination of the impact of project-based learning models on geographic learning, the author selected 7 articles for in-depth analysis. These articles will be studied further in this research.

3. FINDINGS AND DISCUSSION

After completing the article selection process, the author identified 7 articles relevant to the topic of project-based learning. Table 1 presents the findings of the authors, detailing the results. The table shows that the 7 articles were published by three reputable journal publishers indexed by Scopus: Science Direct, Taylor and Francis, and Sage Publications. The articles appeared in the following journals: Environmental Learning Interactive [9], Innovation Learning and Language [9], Sage Open Education [1], International Journal of Engineering and Electrical Engineering [3], Leadership Projects and Societies [11], and Teaching and Teacher Education [5].

Table 2 shows the research design locations used by the authors and participants involved in the research.

Table 1. Journal and Year of Publication

Article Code	Article Title	Journal	Publisher	Year
TF 1	Project-based learning and its effectiveness: evidence from Slovakia	Interactive Learning Environment	Taylor & Francis	2021
TF 2	Motivational, Constructive self , and gender within learning based project	Innovation in learning and language	Taylor & Francis	2023
TF 3	is learning based project can applied context different locale? _ Colombian Caribbean Case Study.	Journal of Education	Taylor & Francis	2020
SG 1	Effectiveness of Project Based Learning as method involved learning _ participant educate in learning	Sage Open	Sage	2020
SG 2	Influence learning-based project to development think creative student	Journal international Engineering & Electrical	Sage	2019
Elementary 1	Experience student in learning based project on education management agile project.	Leadership projects and communities	ScienceDirect	2023
Elementary 2	Practice For learning based project: Study from practitioner experience in the United States	Teaching and teacher education	Science direct	2023

Table 2. Study design and participants

Article Code	Research design	Country	Participant
TF 1	Experiment	Slovakia	123 students
TF 2	Quantitative with experiment	Japan	180 students
TF 3	Experiment	Colombia	481 students
SG 1	Quantitative	Saudi Arabia	124 teachers
SG 2	Quasi- Experiment	Taiwan	36 students
Elementary 1	Experiment	south Africa	63 Students
Elementary 2	Qualitative	United States	34 teachers

Table 2 shows that among the 7 articles reviewed in the research, 71% employed an experimental study design (n=5), while the remaining studies used quantitative and qualitative methods. This indicates that a significant portion of the research aimed to assess the impact of the project-based learning model by applying treatments to experimental and control groups. The experimental design provided accurate and valuable data to address the research questions. Additionally, the studies utilized quantitative and qualitative designs. The research locations included Slovakia, Japan, Colombia, Saudi Arabia, Taiwan, South Africa, and the United States. Meanwhile, Table 3 shows the objectives and findings from the identified studies.

Table 3. Objectives and Findings Study

Article Code	Author	Objective	Findings
TF 1	Milan Maros, Marcela Korenkova , Milan Fila, Michal Levicky & Maria Schoberova	Know the difference between the experimental class using a model project and the control class using a traditional class l	project based learning model is an interesting and engaging learning model more efficiency _ high.
TF 2	Mitsuko Tanaka	Know connection between construction self and motivation Study with project-based learning model approach.	There is significant difference _ between gender and construction to motivation Study with project-based learning model approach.
TF 3	Mario Alberto de Ia Puente Pachecoa, Dick Guerra Florez, Carlos Mario de Oro Aguando and Humberto Llinas Solano	For test perception student towards the project-based learning model in develop and improve performance academic student.	Seen that students who use the project-based learning model have ability solution good problem. More project-based learning models superior rather than learning models traditional.
SG 1	Muhammad Abdullah Almulla	Know effectiveness of the project-based learning model as A method involved learning _ participant educate in learning.	In the learning process especially for future teachers' application of the project-based learning model to be right choice. _ This thing be marked with attitude participant students who support teachers in use of the project-based learning model.

SG 2	Shih-Yeh Chen, Chin-Feng Lai, Ying-Hsun Lai and Yu-Sheng Su	Know impact integrating the project-based learning model towards think creative	With the project-based learning model it provides chance Lots time Study For do practice laboratories and activities think creative. With involve student in activity learning think creative the result show Power imagination student increase in a way significant.
Elementary 1	Carl Marnewick	Know The advantages of the project-based learning model for student in Century front.	Findings _ from study This is a project-based learning model demonstrated as A helpful approach _ student in the learning process. Engaging student in A project life real and attainable Skills life For life in the future.
Elementary 2	Christopher G. Pupik Dean, Pam Grossman, Lisette Enumah , Zachary Herman, Sarah Schneider Kavanagh.	Know how is the teacher in apply learning based project (PjBL) in learning .	Findings _ from study This is a project-based learning model that has potency give Lots chance to student in train Work The same in finish tasks and develop Skills For analyze data, explore solution problem real, collaborate, communicate with various individual. Can be interpreted deep project-based learning model approach prepare student facing the future.

The implementation of the project-based learning model enhances student engagement and performance, fostering deeper involvement in the learning process. This model significantly boosts students' learning motivation, outcomes, creativity, and problem-solving abilities in real-life situations. By using project-based learning, students gain a better understanding of the subject matter and experience improvements in motivation, outcomes, and creativity. As a result, students are more fully engaged and participate more actively in their learning.

The project-based learning model is defined as a student-centered approach that aims to enhance the classroom learning process. Research reviewed in this study demonstrates that the project-based learning model can significantly boost learning motivation, interest, performance, understanding, independence, creativity, collaboration, and overall learning

outcomes. By employing this model, students achieve a higher level of understanding and satisfaction in their learning activities, making these activities more meaningful and impactful.

4. CONCLUSION

The application of the project-based learning model has demonstrated a significant positive impact on various aspects of the learning process. Analysis of the selected articles reveals that this model enhances students' understanding of the subject matter, boosts learning motivation, and improves overall performance. It also fosters greater creativity and effective problem-solving skills. The project-based learning model engages students more deeply in their learning activities, leading to increased involvement and satisfaction. By focusing on real-world problems and integrating collaborative projects, this approach not only improves academic outcomes but also cultivates essential skills such as independence, collaboration, and creativity. Overall, the findings underscore the effectiveness of project-based learning in creating a more engaging and impactful educational experience.

5. AUTHOR'S NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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