

The Effect of Project Based Learning on the Increase Students' Civic Knowledge Capabilities in the Digital Age

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ABSTRAK

Rendahnya pemahaman civic knowledge di kalangan mahasiswa menjadi tantangan dalam pembelajaran yang bertujuan mengembangkan kesadaran dan partisipasi kewarganegaraan. Penelitian ini bertujuan untuk menganalisis pengaruh pembelajaran berbasis proyek (Project-Based Learning atau PjBL) terhadap peningkatan pemahaman civic knowledge. Penelitian ini menggunakan pendekatan experimental research dengan desain One Group Pretest-Posttest Design. Populasi penelitian terdiri atas 113 mahasiswa, dengan sampel sebanyak 51 mahasiswa yang dipilih secara purposif. Data dikumpulkan melalui tes yang telah diuji validitasnya untuk mengukur pemahaman civic knowledge sebelum dan sesudah pembelajaran. Analisis data dilakukan menggunakan uji n-gain dengan bantuan perangkat lunak SPSS untuk mengevaluasi efektivitas model pembelajaran yang diterapkan. Hasil penelitian menunjukkan bahwa penerapan PjBL secara signifikan meningkatkan pemahaman civic knowledge mahasiswa. Terdapat perbedaan yang signifikan antara nilai pretest dan posttest, dengan peningkatan rata-rata kemampuan civic knowledge yang lebih tinggi setelah pembelajaran berbasis proyek. Temuan ini mengindikasikan bahwa PjBL tidak hanya meningkatkan pemahaman teori, tetapi juga mendukung pengembangan keterampilan analitis dan kolaboratif mahasiswa dalam memecahkan masalah kewarganegaraan.

ABSTRACT

The low level of civic knowledge comprehension among students poses a challenge to learning processes aimed at fostering civic awareness and participation. This study aims to analyze the effect of Project-Based Learning (PjBL) on improving civic knowledge comprehension. The research employed an experimental research approach with a One Group Pretest-Posttest Design. The population consisted of 113 students, with a purposive sample of 51 students. Data were collected through validated tests designed to measure civic knowledge comprehension before and after the learning intervention. Data analysis was conducted using the n-gain test with the assistance of SPSS software to evaluate the effectiveness of the applied learning model. The results revealed that the implementation of PjBL significantly enhanced students' civic knowledge comprehension. A significant difference was observed between pretest and posttest scores, with a notable increase in average civic knowledge comprehension after the project-based learning intervention. These findings indicate that PjBL not only improves theoretical understanding but also supports the development of students' analytical and collaborative skills in addressing civic issues.

1. INTRODUCTION

Civic knowledge mention to compassionate and recognition of the content or information that citizens should know about their government, legal system, social structure, and civic control (Schulz et al., 2023). Civic knowledge disquiet what citizens need to know and understand properly (Chen et al., 2024). Civil knowledge hold statement items related to history and contemporary knowledge, such as an understanding of the structure and mechanisms of constitutional government and the principles underlying it (Alscher et al., 2022). Citizenship education was created strategically as a learning subject with the overall aim of developing individuals with the potential to become Indonesian citizens with noble character (Winataputra, 2009). This educational theoretical framework includes cognitive, affective, and

psychomotor dimensions, integrating concepts, ideas, values, and morals rooted in Pancasila. Programmatically, it aims to instill values and provide learning experiences that students can apply in their daily lives. Citizenship Education functions as a holistic approach to developing well-rounded people who embody the principles of Pancasila and make a positive contribution to society.

This function requires an educator to be able to implement learning strategies that can focus on three components of development or basic competencies in Citizenship Education learning, namely civic knowledge, civic attitudes (Civic Dispositions), and civic skills (Civic Skills) in an integrated manner. Citizenship education aims to create the nation's successors who will have the ability to think critically, rationally, and creatively in responding to citizenship issues (Altaany & Abdelbary, 2024; Yoldaş, 2015; Ziemes, 2024). There are many influencing factors in the civics education learning process, such as educators, students, learning atmosphere, lecture material taught, learning models, and so on (Banks, 2020). These factors need to receive serious attention so that the teaching and learning process can run well, so that ultimately it can increase student understanding optimally. To achieve competency and improve learning outcomes and the quality of education, an educator, including lecturers in the Elementary Citizenship Education Learning Development course, is expected to have extensive knowledge and be able to design learning and be able to create enjoyable learning for students.

Based on the results of pre-research observations on March 8 - March 20, 2024, taking place in class B semester 4 of the UAD PGSD study program, information was obtained that not all students have good civic knowledge, this is proven by the fact that there are still some students who do not understand the existing concept of democracy in Indonesia country. Knowledge of citizenship is only limited as a subject and only limited to school, after learning is finished or in real life, one usually no longer gets knowledge of citizenship, while this knowledge of citizenship can be said to be lifelong knowledge. Today it is true that civic engagement is very low among young people (Manganelli et al., 2014; Ziemes, 2024).

During the elementary citizenship education development and learning lecture process, there were still several students who did not understand the material presented. The factor that causes this is that during the learning process, students come to class with inadequate learning preparation. The learning model used predominantly uses the conventional model, namely the lecture and question and answer method, which causes boredom for students during learning (Pangestu et al., 2024). Apart from discern the learning process in class, researchers also manage interviews with lecturers. As a result of the interviews, information was obtained that students' responses and attitudes during lecture activities tended to be passive, only a few students were active, and most of them were still not confident in expressing their opinions and had difficulty understanding the material that had been presented even though the lecturer had done the best he could in delivering the material. The problems that exist in the learning process are important for a lecturer to be able to use a learning model that can develop civic knowledge. What can be done to solve the problem above is regarding the efforts made by a lecturer to increase students' civic knowledge in the Elementary Citizenship Education Development and Learning course, the lecturer can choose one of the learning models. The learning model is a form of illustrated learning from start to finish which is presented typically by the teacher (Rahayu & Fauzi, 2020). One of them is the Project Based Learning (PjBL) learning model (Maros et al., 2021). It is hoped that the application of this model can improve students' ability to find concepts and facts in lecture material which in turn can also solve problems that occur in the human environment, especially in terms of democracy. The reason why researchers use the PjBL learning model is because PjBL learning focuses on developing critical thinking skills, active learning, and being able to express memory of the material as well as establishing good cooperation between groups (Anggereini et al., 2023; Hasan et al., 2023).

The research gap analysis was conducted after reviewing various studies from reputable journals. Existing research indicates that the Project-Based Learning (PjBL) model, when supported by electronic media, effectively enhances students' learning motivation (Maritasari et al., 2022; Safaruddin et al., 2020; Telaumbanua, 2022). Additionally, the PjBL model has been shown to positively impact students' critical and creative thinking abilities, problem-solving skills, and conceptual understanding (Ardianti & Raida, 2022; Niswara et al., 2019; Pramesti et al., 2022). Furthermore, incorporating real-world contexts into learning processes enables students to grasp concepts more effectively by making connections between academic material and everyday applications. This approach not only facilitates quicker comprehension but also ensures that knowledge is retained for a longer period. Research has demonstrated that learning tied to real-life scenarios significantly enhances student understanding. Despite these findings, there is limited research quantitatively investigating how the PjBL model specifically influences students' civic knowledge in the context of digital-era demands. This gap highlights the need for further exploration of the PjBL model's potential in civic education. To address this gap, this study focuses on the innovative application of the PjBL model in civic learning, emphasizing its integration with digital-age competencies. The novelty of this research lies in its investigation of how the PjBL model can foster civic knowledge comprehension in a rapidly evolving digital environment. The primary objective of this study is to analyze

the effect of Project-Based Civic Learning on improving students' understanding of civic knowledge, with the aim of contributing to the development of effective, contextually relevant learning strategies in the digital age.

2. METHOD

This study uses a pre-experimental method with a one-group pretest-posttest design. The selection of the pre-experiment method is because the subject used is a student, so several factors can affect learning outcomes such as student conditions, environmental conditions, learning conditions, and other unexpected things (Levy & Ellis, 2011). The one-group pretest-posttest research design was used to see the effectiveness of a treatment in the learning process that did not use comparisons and was only carried out in one group. Desian one group pretest-posttest can be seen in Table 1.

Table 1. One Group Pretest Posttest Design

Pretest	Treatment	Posttest
T ₁	X	T ₂

(Dani et al., 2018)

The research steps using one group pretest-posttest design based on Table 1 are to carry out a pretest (T1) to see the initial understanding before giving treatment. In this study, the treatment given (X) uses a project-based learning model to improve students' understanding of civic knowledge. The strait carried out a posttest (T2) by looking at the final understanding of students' civic knowledge after being given treatment in the form of learning using a project-based learning model. This research procedure generally consists of three stages, namely the planning stage, the implementation stage, and the completion stage. The planning stage consists of analyzing students' understanding of civic knowledge, analyzing project-based learning models, determining populations and research samples, and preparing question instruments. The implementation stage consisted of providing treatment in the form of a project-based learning model to PGSD UAD students who took the Civic Education Learning course, data collection using instruments that had been prepared and validated, and data processing and analysis using IBM SPSS 25. The last stage is the completion stage, which is to conclude the results of the research and findings during the research process. The population in this study is all PGSD UAD students in the fourth semester who take the Civic Education Learning course consisting of four classes totaling 113 students. The sample in this study is 51 fourth-semester students. The sample is selected by the researcher by considering the needs of the research and is considered representative (Coe et al., 2022). The two classes that were sampled were two classes that had the same homogeneity.

The instrument used in this study is a test question that is in accordance with the indicator of civic knowledge comprehension. This instrument has been validated by validators who are experts in their fields with results that are suitable for use in measuring students' understanding of civic knowledge. The main cognitive test instrument used was the development carried out by the researcher himself, which consisted of a multiple-choice test with 15 questions and a description test with about 5 questions, so that the total questions in the cognitive test were 20. These indicators are used as a reference by researchers in compiling test instruments. Cognitive is drawn with several indicators, namely: a) the concept/principle of democratic substance, b) questions about the meaning and application of democracy, c) the constitution and democratic representative institutions of government, d) the structure and operation of democratic institutions, e) democratic citizenship and the role of citizens, f) the cultural, social, political, and economic context of democracy, and h) the history of democracy in certain countries and globally (Patrick & Learning, 2001).

The data collected were analyzed using statistical methods to examine the impact of the project-based learning (PjBL) model on the understanding of civic knowledge among elementary school teacher education (PGSD) students in the digital era. This analysis aimed to determine the extent to which the PjBL model enhances students' comprehension of civic concepts by fostering active engagement, critical thinking, and collaborative problem-solving skills. Integrating real-world applications and digital tools into the learning process, the study sought to provide evidence of the model's effectiveness in equipping future educators with a deeper understanding of civic knowledge, essential for fostering informed and participatory citizens in a rapidly evolving digital society.

3. RESULT AND DISCUSSION

Result

The results of this study can be seen in the learning outcomes of students before being given assistance (pretest) and learning outcomes after being given treatment (post-test). The results of the students' pre-test before taking are shown in [Table 2](#).

Table 2. The Average Pretest Score is an Indicator of PGSD Student Civic Knowledge

Statistics	Indicator						
	1	2	3	4	5	6	7
Valid N	51	51	51	51	51	51	51
Missing	0	0	0	0	0	0	0
Mean	56.20	55.84	57.76	56.24	56.08	56.16	57.29

Based on [Table 2](#), it can be concluded that of the seven civic knowledge indicators, there is a difference in the average value of each indicator. The highest average score indicator is the third indicator, namely the constitution and democratic representative government institutions. The indicator that was detected with the lowest average score was the fifth indicator, namely democratic citizenship and the role of citizens. After the test results before being treated and analyzed, the next is the provision of treatment in the form of learning with a project-based learning model for four meetings.

The results of the students' civic knowledge test after being given treatment in the form of learning with a project-based learning model are shown in [Table 3](#).

Table 3. The Average Posttest Score is an Indicator of PGSD Student Civic Knowledge

Statistics	Indicator						
	1	2	3	4	5	6	7
Valid N	51	51	51	51	51	51	51
Missing	0	0	0	0	0	0	0
Mean	80.00	80.94	80.75	82.78	82.43	81.45	82.43

Based on [Table 3](#), after learning with the project-based learning model, there was an increase in the average score of each indicator of students' civic knowledge comprehension. The indicator with the highest average score is found in the fourth indicator of the structure and operation of democratic institutions. Meanwhile, the indicator with the lowest average value is the first indicator, the concept/principle of democratic substance. To see which indicators have experienced a significant increase, the N gain test is carried out. The results are shown in [Table 4](#).

Table 4. The average N-gain Indicator of PGSD Student Civic Knowledge

Statistics	Indicator						
	1	2	3	4	5	6	7
N-gain	0.53	0.55	0.53	0.60	0.58	0.57	0.59
Category	Middle	Middle	Middle	Middle	Middle	Middle	Middle

Based on [Table 4](#), the indicator of civic knowledge understanding that has experienced the most significant increase is the fourth indicator, namely the understanding of the structure and operation of democratic institutions with a N-gain value of 0.60 in the medium category. However, overall, each indicator has improved after being given treatment in the form of project-based learning. Therefore, it can be concluded that learning with a project-based learning model has a positive influence on the understanding of civic knowledge of PGSD students during lectures in the current digital era.

Discussion

The citizenship education in the digital era is increasingly urgent. The nation's generation as agents of change needs to have a deep understanding of citizenship ([Aziz & Rachmawati, 2024](#)). In the dynamic digital era, where information spreads so quickly and access to virtual public spaces is increasingly easy, students are required to be able to participate in social and state life actively. Integrating civic values in citizenship education is the key to forming students' character who have noble, nationalistic, and democratic character. This is important so that students can respond to various challenges of the digital era such as hoaxes, hate speech, and social polarization wisely and responsibly. As

prospective educators, students need to be equipped with a comprehensive understanding of citizenship (Hajiheydari & Delgosha, 2023). In a digital era, full of disruption, the role of students as agents of change is increasingly crucial. By integrating civic values, students can become a generation that is aware of their rights and obligations as citizens. In addition, a deep understanding of democracy will equip students with the ability to critically analyze social and political issues, as well as actively participate in various democratic activities both on campus and in the community.

The results of observations and tests that have been carried out show that there is a significant gap in understanding the concept of democracy among students. This is an important indicator that there needs to be an evaluation of the ongoing citizenship learning process. A lack of understanding of the concept of democracy as the foundation of state life will certainly have an impact on the quality of student participation in various aspects of social life. Several factors could be the cause of the low understanding of the concept of democracy among students. One of the main factors is the learning model which is still conventional and tends to be monotonous. Learning methods that are too teacher-centered and do not actively involve students in the learning process can make the material less interesting and difficult to understand. In addition, students' lack of active participation in activities related to democracy, such as group discussions, debates, or general election simulations, can also hinder the development of their understanding.

The gap in understanding the concept of democracy has quite serious implications for the quality of citizenship learning. If students do not have a strong understanding of democracy, it will be difficult for them to become active, critical, and responsible citizens. This can have an impact on the quality of future leadership, as well as community participation in the decision-making process. The citizenship education process has to be improved in a number of ways in order to address this issue. First, creative methods of instruction to put the wants of the students first must be applied. Examples of these strategies include problem-based learning, cooperative learning, and project-based learning (Purwaningsih & Wangid, 2021; Tesalonika et al., 2022). Second, in order for students to share ideas and deepen their comprehension, a discussion-friendly and debate-friendly learning atmosphere must be established (Suryani et al., 2024). Third, it is necessary to involve students in extracurricular activities related to democracy, such as student organizations, parliamentary simulations, or advocacy activities (Yusuf et al., 2020).

Project-based learning (PjBL) or project-based learning is a learning approach that focuses students on solving real problems through projects that are relevant to their lives. In the context of citizenship education, PjBL has great potential to increase students' civic knowledge. Through PjBL, students not only gain knowledge about theoretical concepts of citizenship but are also invited to apply this knowledge in the context of real projects. Project-based learning (PjBL) has been proven effective in increasing students' understanding of various subject matter (Dwi Maharani & Nurharini, 2024; Mustadi et al., 2024). The use of technology not only enriches the learning resources available to students but also allows them to access information more widely and in-depth (Chen et al., 2024). Through digital platforms, students can conduct research, collaborate, and present their work more efficiently (Zhang & Ma, 2023). For example, students can use presentation software to create interesting data visualizations or utilize social media to discuss with peers from various backgrounds.

The findings of this research contribute significantly to the field of civic education, particularly in the digital era, where the integration of democratic values into the educational process is essential for fostering critical and responsible citizenship. By demonstrating the effectiveness of the project-based learning (PjBL) model in enhancing students' civic knowledge, this study offers a robust framework for addressing the challenges of conventional, teacher-centered approaches that fail to engage students actively. The research emphasizes the importance of equipping future educators with the ability to connect theoretical knowledge with real-world applications, fostering students' critical and creative thinking abilities and encouraging them to actively participate in democratic processes.

The implications of this research are far-reaching. First, it highlights the urgent need to reform citizenship education by adopting innovative and student-centered pedagogical models, such as PjBL, that align with the demands of the digital age. Second, it underscores the role of technology in enriching the learning experience, providing students with access to diverse resources, and enabling collaboration on projects that mirror real-life democratic challenges. Lastly, the findings suggest that fostering a deeper understanding of democratic principles through practical, participatory activities can prepare students to navigate the complexities of digital society, counter misinformation, and engage in meaningful civic actions.

Based on these findings, several recommendations are proposed. Educators should prioritize the adoption of PjBL and other active learning models to enhance student engagement and comprehension of civic concepts. Institutions should create supportive environments for discussions, debates, and simulations that deepen students' understanding of democracy. Moreover, integrating extracurricular activities related to democratic practices, such as parliamentary simulations or advocacy programs, can

provide practical exposure to democratic processes. Finally, leveraging digital tools to facilitate research, collaboration, and project presentation is highly recommended to make learning more dynamic and relevant to students' lives. These strategies collectively aim to produce a generation of informed, active, and responsible citizens in an increasingly interconnected world.

4. CONCLUSION

This study concludes that the Project-Based Learning (PjBL) model is an effective pedagogical approach for enhancing the civic knowledge of elementary school teacher education (PGSD) students in the digital era. By fostering active engagement, critical thinking, and real-world application of democratic principles, PjBL bridges the gap between theoretical understanding and practical implementation of citizenship concepts. The findings underscore that integrating technology and collaborative problem-solving within PjBL not only deepens students' comprehension but also equips them with the skills to navigate the complexities of digital citizenship responsibly. This aligns with the research objective of analyzing the impact of PjBL on improving students' civic knowledge, demonstrating its potential to cultivate informed, participatory, and adaptive citizens who are prepared to address the challenges and opportunities of contemporary democratic life.

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