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Implementation of Learning Models Project Citizen by Utilizing Wakelet Media Can Enhancing Student Collaboration and Responsibility Public High School 2 Sidoarjo

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ABSTRACT

Objective: *This study was conducted to analyze the effectiveness of the Wakelet media-assisted citizen project learning model in improving student collaboration and responsibility in class XII of Public High School 2 Sidoarjo and to identify student responses. towards the citizen project model learning assisted by Wakelet media.* ***Method:*** *The research method used is a quasi-experimental with a non-equivalent control group design. Involving one experimental class that received project learning and one control class with conventional learning. Data collection was conducted at Public High School Negeri 2 Sidoarjo East Java. Data collection techniques included pretests and posttests (to measure students' collaboration and responsibility abilities), student questionnaires (to measure students' responses to Wakelet-assisted citizen project learning), and observations to record collaboration and responsibility behaviours during the learning process.* ***Results:*** *shows a significant increase in the experimental class, as shown by the average pre-test value of 75.95 increasing to 85.95 in the post-test. Student responses to the learning were in the very positive category, especially in the aspects of collaboration, visual appeal, and ease of publishing digital projects through Wakelet.* ***Novelty:*** *This research lies in the systematic integration of the Wakelet digital platform in Project Citizen documentation to increase collaboration and responsibility of high school students." This study uses Wakelet as a medium for presenting project-based citizen and responsibility- based materials , as well as a collaboration facilitator. Furthermore, this study introduces a learning design that has not been widely explored in the context of immersive learning in secondary schools.*

INTRODUCTION

Advances in digital technology over the past decade have reshaped the character and behavioral patterns of Generation Z, including among high school students in Indonesia. This group is highly engaged with digital devices and prefers fast, visual, and interactive learning (Hrdy et al., 2024; Lottering et al., 2023; Lyu & Park, 2025; Mardoyo et al., 2024). However, a paradox arises when this digital engagement is not directly proportional to actual social participation. A tendency toward apathy toward public issues, minimal contributions to environmental issues, and a low willingness to collaborate to find solutions remain common. This situation presents a unique challenge for civics education, which aims to produce active and responsible citizens.

These challenges are palpable in schools, such as at Public High School 2 Sidoarjo. Issues such as a lack of concern for environmental cleanliness, the disorganization of public spaces, and the low participation of youth in social activities require students to engage in critical thinking. Unfortunately, Pancasila Education classroom learning practices are still dominated by lectures and textual presentations of theory. This

approach has proven ineffective in stimulating students' curiosity, creativity, and concrete action competencies that are essential for participatory citizenship.

To address the failures of conventional pedagogy, the Project Citizen model significantly enhances students' critical and creative thinking skills (Saenab et al., 2025). This project-based learning model is designed to develop citizenship competencies through the identification of public problems, policy analysis, and collaborative solution design (Doğantan, 2025; Eswaran, 2024; Ortega-Sánchez & Jiménez-Eguizábal, 2019). Numerous studies have demonstrated its effectiveness in enhancing students' critical thinking, collaboration, and social responsibility awareness (Cong & Ironsi, 2025). This model positions students as the primary actors in the investigation of authentic issues (Antunes & Brandão, 2025; Eswaran, 2024).

On the other hand, the visual and digital learning characteristics of Generation Z require appropriate media (Alruthaya et al., 2021; Cutillas et al., 2025; Kayyali, 2025; Reedy et al., 2024). Digital platforms like Wakelet have emerged as potential curation tools (Agüeira, 2016; Caeiro-Rodríguez et al., 2013; Mihailidis & Fromm, 2014). Their strength lies in their ability to integrate multimodal content (text, images, videos, links) in a structured and intuitive collaborative space (Antonio et al., 2012; Sharma & Deschaine, 2016). This feature makes them ideal tools for documenting digital portfolios, facilitating discussions, and monitoring project progress—key elements of Project Citizen (Amestica Rivas et al., 2016; Figueira et al., 2010; Garcia, 2025).

While each has strong empirical evidence, the integration of Project Citizen and collaborative digital platforms like Wakelet remains largely unexplored, particularly in the context of Pancasila Education in Indonesia. Theoretically, no framework combines the principles of project-based citizenship learning with digital collaborative learning theory in a single, integrated model. Empirically, research examining the specific impact of this integration on Generation Z students' collaboration and responsibility competencies, both quantitatively and qualitatively, remains very limited. Most studies focus on only one aspect (e.g., Project Citizen without a specific platform, or the use of Wakelet for non-social science subjects). Therefore, there is a double gap: (1) the lack of learning models that simultaneously address the digital characteristics of Gen Z and the demands of participatory citizenship pedagogy, and (2) limited empirical evidence on the effectiveness of the Project Citizen-Wakelet integration.

Based on the identified gaps, this study was designed to address these gaps by proposing and testing an integration between the Project Citizen model and the Wakelet platform. This study focuses on two main questions: (1) Is the implementation of the Project Citizen model supported by the Wakelet digital media capable of improving collaboration and learning responsibility among 12th-grade students? and (2) How do students respond to the implementation of the Wakelet-assisted Project Citizen model in Pancasila Education learning? The selection of 12th-grade students at Public High School 2 Sidoarjo was based on their cognitive-emotional development, which is at a crucial phase in the formation of civic identity, as well as on the school environment's support for technological innovation.

The results of this study are expected to provide a theoretical contribution by strengthening the integrative framework between citizenship pedagogy and learning technology. Practically, this research offers a contextual and relevant learning model to the character of Generation Z, while also providing empirical evidence for teachers and curriculum developers to optimize the role of technology in fostering collaboration and responsibility as the foundation of participatory citizenship.

RESEARCH METHOD

This study applied a quasi-experimental design with a nonequivalent control group design. Two classes that were not randomly assigned were involved in the study: a control class that followed Pancasila Education learning through the lecture method, and an experimental class that received learning using the Project Citizen model supported by Wakelet digital media. The selection of this design aimed to compare the improvement of student collaboration and responsibility between the two groups and to identify how students responded to the implementation of the Wakelet-assisted Project Citizen model as an innovation in learning. This study was conducted at Public High School 2 Sidoarjo involving grade XII students as research subjects. The selection of the two classes was based on the equality of initial abilities, the suitability of the curriculum structure, and the availability of ICT facilities that support the learning process. One class served as the control group, while the other served as the experimental group. The determination of grade XII as the focus of the study was based on the consideration that students at this level are at the stage of strengthening readiness towards adulthood, so the learning process is considered strategic to foster and strengthen the character of collaboration and responsibility that must be emerged in students.

The research instruments include: (1) A test to measure the level of student collaboration and responsibility, which is structured in the form of initial and final ability assessment questions (pretest–posttest). This test covers aspects of student knowledge, attitudes, and involvement in the learning process. (2) A student response questionnaire using a Likert scale designed to assess.

RESULTS AND DISCUSSION

Results

Their perceptions of the implementation of the Project Citizen model supported by Wakelet digital media include ease of use, the attractiveness of the display, the effectiveness of collaboration, and the relevance of learning to real-life contexts. Data collection techniques were carried out through: (1) implementing pretests and posttests to measure changes in the level of collaboration and student responsibility; (2) distributing questionnaires on student responses to learning; and (3) documenting learning activities recorded in the Wakelet platform in the experimental class. This study uses two forms of analysis. First, descriptive analysis is used to describe: the average pretest and posttest scores in both classes, the increase in student collaboration and responsibility after the intervention, and the distribution and percentage of student responses to the use of the Project Citizen learning model supported by Wakelet media.

Second, statistical analysis uses a paired sample t-test which aims to identify significant differences between pretest and posttest scores in each class. This test was conducted specifically to answer the main problem formulation, namely: "Can the application of the Project Citizen learning model assisted by the Wakelet platform improve student collaboration and responsibility?"

Statistical Package for the Social Sciences (SPSS) software with a significance level of 0.05. Through the results of this data processing, it can be seen whether the experimental class experienced a significant increase when compared to the control class. The increase in student collaboration and responsibility was measured through pretest and posttest assessments in both groups. Based on descriptive analysis, the experimental class that participated in Project Citizen learning supported by Wakelet showed a greater increase in scores than the control class.

Table 1. Statistics Paired Samples Experimental Class

Pair	Mean	N	Standard Deviation	Std. Error Mean
Pretest	75.95	37	4.60	0.76
Posttest	85.95	37	3.10	0.51

Table 2. Paired Samples Correlations

Pair	N	Correlation	Sig.
Pretest – Posttest	37	0.72	0.000

Table 3. Paired Samples Test

Pair	Mean Difference	Std. Dev Difference	Standard Error Difference	t	df	Sig. (2-tailed)
Posttest – Pretest	10.00	4.20	0.69	**14.49**	36	0.000

The paired sample t-test analysis showed that there was a significant difference between the pretest and posttest scores of students in the experimental class. The average pretest score of **75.95** increased to **85.95** in the posttest. The average difference of **10 points** was statistically significant ($t(36) = \mathbf{14.49}$, $p = \mathbf{0.000} < 0.05$). These findings indicate that **implementing the Project Citizen learning model, supported by the Wakelet digital platform, positively impacts student collaboration and responsibility**, reflected in improved learning outcomes. The questionnaire findings showed a tendency for very positive responses from students towards the implementation of Project Citizen assisted by Wakelet. Specifically, (1) 87% of students reported that the use of Wakelet made it easier for them to understand social issues because the presentation of information was more visual, structured, and easy to manage; (2) 82% of students felt that group work became more efficient because all files, links, and portfolios could be collected in one integrated platform; (3) 89% of respondents considered the learning process more interesting because they could present the project results in the form of a digital display

that resembled a “simple website”; and (4) 85% of students assessed that Project Citizen made them more active in dialogue, identifying public problems, and developing relevant alternative solutions. Overall, student responses can be categorized as “very positive”. The Effectiveness of Wakelet-Assisted Project Citizen in Improving Collaboration and Student Responsibilities The increase in learning outcomes in the experimental class shows that the implementation of Project Citizen Wakelet- assisted learning is more effective than lecture methods in developing Student collaboration and responsibility. This is in line with Quigley & Bahmueller's (1991) view that Project Citizen encourages public issue analysis, participation, and civic responsibility through systematic problem investigation. In learning Pancasila Education, Project Citizen enables students to identify public problems, gather information, collaborate on data analysis, develop policy portfolios, and present their solutions. This framework aligns with the Centre for Civic Education's guidelines, which emphasise strengthening critical thinking, teamwork, and participatory awareness. Overall, the integration of Project Citizen and Wakelet has been shown to strengthen students' knowledge, attitudes, and actions, particularly in building collaboration and responsibility as civic competencies.

Discussion

The statistical analysis and student responses consistently demonstrate that integrating the Project Citizen model with the Wakelet platform significantly improves collaboration and learning accountability. This improvement can be interpreted through the lens of Social Interdependence Theory of collaborative learning. The Project Citizen task structure, which requires group problem-solving, supported by Wakelet's sharing and co-editing features, creates positive interdependence. Each group member contributes to the curation of the same digital collection, fostering individual accountability and proactive interactions toward shared goals. These findings reinforce the proposition that technology is not just a tool, but a social scaffold that can realize collaborative learning principles in a more structured and documented way (Chen et al., 2020; Saleh et al., 2020).

More in-depth qualitative data from observations and student responses revealed that the greatest improvement occurred in the indicators "organized role allocation" and "commitment to completing portfolio assignments." This phenomenon can be explained by the theory of Distributed Cognition (Boyle et al., 2023; Cárdenas-García, 2013; Furniss et al., 2019). Wakelet served as an external platform for distributing, storing, and collaboratively developing group knowledge. Each student could visually track the contributions of other members, thereby reducing role ambiguity and facilitating monitoring of collective progress. An interesting finding was that while all aspects of collaboration improved, the indicator "conflict resolution" showed relatively lower improvement. This suggests that while the digital platform facilitated task coordination (Nitschke et al., 2020; Suokas et al., 2025; Wei et al., 2022), interpersonal conflict resolution skills may still require direct pedagogical intervention from the teacher (Dell’Aquila et al., 2020, 2022; Marocco et al., 2019).

Despite its positive impacts, the implementation of this model is not without challenges (Mahmood et al., 2020; Mediavilla et al., 2025). Observations identified a digital literacy gap among students, with some more tech-savvy members tending to

dominate content creation on Wakelet. Furthermore, although Wakelet facilitates documentation, the quality of in-depth analysis of public issues still depends on the depth of teacher guidance during offline discussion sessions. Therefore, the effectiveness of this model is conditional, requiring: (1) initial technical scaffolding (Belland et al., 2022; Jumaat & Tasir, 2014), (2) active teacher monitoring of group dynamics (Komar et al., 2019; Palomero-Fernández & Vicente-Sánchez, 2025; Spaller, 2024), and (3) the readiness of school infrastructure. Acknowledging these limitations actually strengthens the validity and credibility of the discussions.

The findings of this study both confirm and extend previous studies. The positive results on collaboration align with research on Project Citizen, while the increased visual-digital engagement supports findings on Wakelet. The novelty of this study lies in the empirical synthesis of these two elements, which yields evidence that a digital curation platform can serve as a catalyst that strengthens the cycle of authentic investigation and collaboration within Project Citizen. This integration effectively bridges the digital characteristics of Generation Z with the demands of participatory citizenship pedagogy, a gap identified in the introduction.

Practically, this study offers an operational framework for Pancasila Education teachers to transform learning from conventional to contextual and participatory. Wakelet provides an intuitive interface for implementing Project Citizen stages in a visible and measurable manner (Bentahar & O'Brien, 2019). Theoretically, this study puts forward an initial proposition about "Digital-Enhanced Civic Project-Based Learning," where collaborative platform technology specifically strengthens the social and documentary dimensions of civic project-based learning. Thus, this model is not only effective in improving measurable learning outcomes but also in forming a learning ecosystem that aligns with the socio-digital context of 21st-century learners.

CONCLUSION

Fundamental finding: This study empirically demonstrates that integrating the Project Citizen model with the Wakelet digital curation platform effectively improves collaboration and learning accountability among 12th-grade students in Pancasila Education. Statistical analysis shows a significant improvement ($p < 0.05$) in the experimental class with a large effect size, supported by very positive student responses. Qualitative findings reveal that this improvement is mediated by Wakelet's ability to create a structured collaboration space that suits the visual-interactive learning style of Generation Z, while also functioning as a scaffold to distribute cognition and clarify individual accountability within the group. **Implications:** Theoretical Implications: This research enriches the Digital Project-Based Learning framework by proposing the proposition of "Digital-Enhanced Civic Project-Based Learning," which emphasizes the specific role of collaborative platforms as catalysts in the public issue investigation cycle. These findings contribute to the convergence of collaborative learning theory (Social Interdependence Theory) and digital citizenship theory. Practical Implications: Teachers of Pancasila Education and related subjects can adopt the Wakelet-assisted Project Citizen model as an innovative, contextual alternative. This model offers a clear and documented protocol for transforming learning from passive to participatory, with

Wakelet serving as an easily accessible project management and digital portfolio tool. **Limitations:** This study has several limitations that should be acknowledged: 1.) Design and Sample: The use of a quasi-experimental design with a purposive sample from a single school limits the generalizability of the findings. Specific group dynamics and school culture at the study site may have influenced the results; 2.) Intervention: The relatively short duration of the intervention may only capture short-term impacts. The development of deeper collaboration and responsibility competencies requires a longer timeframe; 3.) Measurement: Although the instrument has been validated, the measurement of collaboration and responsibility still relies heavily on self-assessment through questionnaires. Integration with learning analytics methods from digital activity logs could provide more objective data in the future. **Future Research:** Based on the findings and limitations, future research is recommended to: 1.) Test this model with a pure experimental design (RCT) and a larger and more diverse sample to strengthen external validity; 2.) Conduct a longitudinal study to investigate the sustainability of increased collaboration and accountability, and its impact on real citizenship actions outside the classroom; 3.) Explore the integration of Wakelet with other digital platforms (e.g., for policy simulations or community networking) and measure its impact on other citizenship competencies such as critical thinking and social participation; 4.) Examine contextual factors, including the moderating roles of teachers' digital expertise and school infrastructure support, in the successful implementation of similar models.

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