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Project citizen digital: A learning model of civic education in digital age

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Abstract

Civic education plays a crucial role in fostering responsible citizenship and developing comprehensive civic competencies. In Indonesia, it holds a strategic position as a compulsory subject mandated by the government and implemented across all universities. This study aims to investigate the impact of Project Citizen Digital on students' civic competency in higher education. Employing a quantitative approach, the research focuses on the implementation and evaluation stages of the ADDIE model following the development of the Project Citizen Digital application. A one-group pretest–posttest design was used to assess changes in students' civic competency before and after the intervention. The study involved 480 undergraduate students from Universitas Pendidikan Indonesia, consisting of 400 students in the first cohort and 80 students in the second. Data were analyzed using paired-sample statistical tests through SPSS. The findings indicate a statistically significant improvement in students' civic competency after engaging in Project Citizen Digital-based learning. This is evidenced by a Sig. (2-tailed) value of 0.000, which is lower than 0.025, leading to the rejection of the null hypothesis. The results confirm that the intervention produced a meaningful difference between pretest and posttest scores. Therefore, Project Citizen Digital demonstrates strong potential as an innovative and effective model for integrating digital technology with participatory civic learning in higher education.

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Introduction

Civic education is currently recognised as a dynamic field of practice and research that continues to develop alongside social transformation and technological advancement. Pedagogical innovation in civic education is closely related to changes in how society interacts with knowledge in the digital age. Technological development not only alters social life but also reshapes how civic education is designed and implemented (Delgado, 2016). There has been a growing shift from the "traditional" model of civic education to the "new civic," which expands the understanding of civic participation and redefines the goals of civic education. Learning is no longer limited to increasing factual knowledge about political institutions, but also aims to develop comprehension, skills, motivation, and active participation through direct engagement with civic issues (Carretero et al., 2016). Scholars generally agree that civic competency consists of three main components: civic knowledge, civic skills, and civic character, although the scope and terminology may vary across studies (Cohen & Chaffee, 2013). In practice, however, civic education in Indonesia remains heavily focused on cognitive aspects, repetitive content, and teacher-centred instruction. These conditions limit students' opportunities to develop balanced civic competency. As a result, civic competency achievement across educational levels remains uneven (Diković & Zečević, 2020). The achievement of civic competency at the initial school level and across various educational levels is crucial.

It is due to the underdevelopment of systematic civic competency, as Civic Education is taught as a single subject at a given educational level. In contrast, teaching must be carried out at all educational levels to support society, the economy, and a sustainable ecosystem, fostering active and responsible citizens in the connected world (Diković & Zečević, 2020; Garcia-Esteban, 2020). In addition, some components of civic competency, in detail, are related to knowledge and civic norms, functional readiness for Civic Education, nurturing, practical implementation of civic position, value orientation, articulating value perception of civic position, personality quality, and contribution to civic competency (Tsykhmeistruk, 2022).

Similar challenges have been reported in other contexts. In Singapore, students' civic competency is influenced by classroom rigidity, hierarchical political structures, and pragmatic societal orientations (Alviar-Martin et al., 2012; Dahliyana et al., 2021). Moreover, adolescents increasingly compare the role of school, family, peers, and social media in shaping their understanding of citizenship (Zhang et al., 2022).

To address these challenges, the Project Citizen model was introduced in 1992 as a participatory and interdisciplinary learning approach. At present, this model has been implemented in more than 35 countries as part of civic education reform (Öztürk et al., 2021). However, in Indonesia, its implementation remains limited due to funding constraints and infrastructural challenges. Moreover, the existing infrastructure and facilities must support the showcase implementation of the project for citizens. Hence, development is required to enable the practice of the project citizen for whosoever and wheresoever in the digital age. For this reason, adapting Project Citizen into a digital format is considered a strategic solution. Digital civic education has demonstrated the potential to strengthen both civic engagement and social relevance in online environments (Nah & Yamamoto, 2018a). Furthermore, digital platforms support the integration of theoretical knowledge with real-world applications (Liu et al., 2018).

A proposed solution to minimise the shortage is to develop the Citizen Digital project. This project is an effective collaborative online learning approach, providing experience and security as part of modern human development in the digital environment (Garcia-Esteban, 2020; Danieliene & Tolmach, 2019). Also, the research findings of Fedorova et al. (2021) indicated that the modern approach of digital learning in civil-patriotic education satisfies students' interests and preferences. Additionally, the results of the research conducted by Hsu et al. (2021) indicated that online learning mediates Civic Education and online civic expression, and that these mediators completely mediate relationships between online civic responsibility and online civic contribution across different contexts and populations (Polizzi,

2021). Previous studies indicate that digital tools can help evaluate civic education and enhance student engagement (Jones & Mitchell, 2016). In this sense, digital technology functions not merely as a learning medium but as an essential pedagogical resource (Cazacu et al., 2020). The question is whether the Citizen Digital project can improve students' civic competency.

Method

This study used a research and development design based on the ADDIE framework, comprising Analyse, Design, Develop, Implement, and Evaluate. Although the project followed all stages of ADDIE, this article highlights the implementation and evaluation processes after the Project Citizen Digital application had been designed and developed.

During the analysis phase, the researchers examined the learning conditions of Civic Education in higher education, including student characteristics, curriculum demands, and constraints of conventional classroom instruction. This stage confirmed the need for a digital-based learning model that could support participatory civic learning. The study employed a convergent parallel design to collect quantitative and qualitative data simultaneously, integrate the data, and use the results to understand the research problem through an interpretation of the overall findings. At this stage, data were collected from 400 student participants via questionnaires and interviews, comprising 12 questions on the implementation of civic education.

The design phase focused on structuring the learning flow, features, and content of the Project Citizen Digital application to align with civic competency objectives. The prototype was then produced and revised in the development stage, along with the preparation of research instruments. In this phase, the “Project Citizen Digital” design requires five key resources: (1) an administrator responsible for managing all interactions within the “Project Citizen Digital” platform, including deleting and modifying data; (2) an educator responsible for creating and managing classes within the platform; (3) students responsible for participating in the overall process across the various stages of the “Project Citizen Digital” initiative; (4) judges responsible for assigning grades online through the features provided for each group within the Digital Citizen Project; and (5) stakeholders, including students outside the class, families, the community, the government, non-governmental organizations, and other parties relevant to the issues discussed in class.

The development phase involves content creation, selecting existing supporting materials or developing new materials for the project, preparing guidelines for educators and students, implementing formative revisions, and conducting pilot testing. In general, the framework used is based on the Project Citizen model, which is organised into several stages, beginning with registration and followed by class management by educators, students, the judging panel, and stakeholders.

The implementation phase involves preparing the learning environment and engaging students at all stages of the citizenship education process through the Project Citizen framework, specifically by integrating the Project Citizen Digital application into a classroom setting. An initial trial was conducted with 30 students to assess system usability. Based on this trial, the System Usability Scale (SUS) was administered as a standardised tool to measure system quality. Subsequently, the application was implemented in two classes involving 80 undergraduate students, considering that the system was still in prototype form.

To measure civic competency, the research instrument referred to the national defence values established in Law Number 23 of 2019. Indicators were derived from the Module Book of the National Defence Council based on Presidential Instruction Number 7 of 2018, covering love for the motherland, national awareness, loyalty to Pancasila, willingness to sacrifice, and the initial capacity to defend the nation.

The evaluation phase was conducted by assessing product quality and instructional processes before and after the implementation of the Digital Citizen project, using a single-group pretest–posttest design and analyzing the data with SPSS 29. Differences between pretest and posttest scores were analysed through paired-sample testing. The hypotheses tested were: H_0 (no difference before and after instruction) and H_a (a significant difference after instruction), using a two-tailed test with a significance level of $p < .025$.

Results and Discussion

Analyse Phase

At the analysis phase, several challenges in Civic Education were identified. Learning practices tended to focus on theoretical understanding with limited engagement in real-world civic issues. While civic competency is commonly understood as an integration of knowledge, skills, and civic character (Cohen & Chaffee, 2013), instructional practices in Indonesia often emphasise content mastery over experiential learning (Diković & Zečević, 2020).

Studies from other countries show similar patterns. In Singapore, for instance, rigid classroom cultures and pragmatic political orientations have influenced how citizenship is taught (Alviar-Martin et al., 2012; Dahliyana et al., 2021). In addition, young people increasingly interpret citizenship through digital and social media spaces, causing formal education to compete with informal sources of civic learning (Zhang et al., 2022). These conditions confirmed the need for a learning model that could connect classroom learning with students' everyday civic experiences.

Design Phase

During the design stage, Project Citizen Digital was structured to combine problem-based learning with digital participation. Learning activities were oriented toward case analysis, teamwork, and communication of ideas. This design reflects the view that civic education should promote active engagement rather than passive learning (Carretero et al., 2016).

The digital format also considers the broader transformation of civic learning in online environments. Digital tools create new spaces for communication and participation (Garcia & de Roock, 2021) and foster critical awareness in digital contexts (Polizzi, 2021). Therefore, the instructional design aimed to integrate civic learning, technology use, and student interaction into a single learning environment.

Develop Phase

During the development phase, the Project Citizen Digital model was developed into a functional prototype. The system design incorporated learning control tools, collaborative features, and evaluation mechanisms. Previous studies show that digital platforms can strengthen learning processes by providing opportunities for participation and engagement (Cazacu et al., 2020).

Moreover, digital learning environments are increasingly recognised as effective tools for civic education as they support both knowledge acquisition and student interaction (Jones & Mitchell, 2016). These considerations guided the technical and pedagogical development of the application.

Project Citizen has been considered an effective, efficient, and fun project-based learning model (Öztürk et al., 2021). However, what if the project citizen is developed in digital form? Does it affect students' civic competency? Can the products of the research's results stimulate students' civic competency? Therefore, the research by Hoskins et al. (2015) found that the education system, through Project Citizen, can promote civic competency in Europe across liberal, civic-republic, and critical/cosmopolitan civic models.

The advent of digital technology and a more globalised, digitalised society cannot be avoided. However, it is to be utilised and developed in Civic Education to involve students in

more active learning in the digital age (Peart et al., 2022). It is important to develop digital and socio-civic skills in both formal and informal education (Peart et al., 2022). Further, the youth generation uses the internet more actively, consciously or unconsciously, impacting life skills and knowledge. Thus, it contributes to their intention to engage in civic involvement (Martens & Hobbs, 2015). Also, it will enable policymakers, educators, and community supporters to make stronger demands for implementing the project as a learning resource to fulfil the promises and objectives of Civic Education.

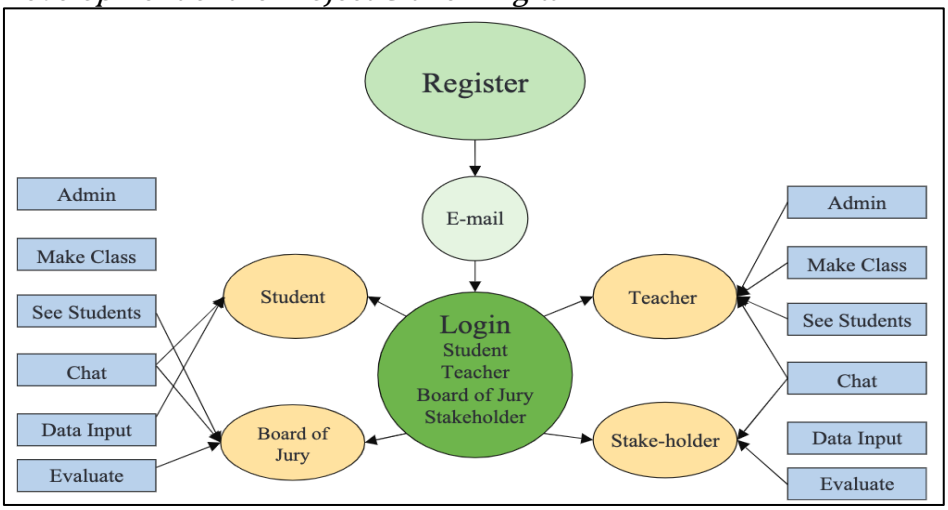
As previously described, Civic Education can foster relationships between science and education and, when combined with technology, broaden research horizons and civic involvement. Therefore, the future project citizen will likely be influenced by socio-cultural issues related to new technology and face practical pragmatic challengs (Newman et al., 2012, p. 298). It is affirmed with data in the last decade, where some sciences have shifted to online, particularly in classifying big data collection (Kasperowski & Hillman, 2018, p. 564).

By using inventive civic skills and knowledge and fostering civic benevolence, students will be more independent and less dependent on external influences. In emancipatory education, it will produce informed, free-thinking, courageous, critical, active, and responsible citizens in a democratic society (Jerković et al., 2018, p. 64). This is due to the dependency on society's development of information and Civic Education, which are the main parameters of modern society related to globalisation (Belenchuk & Nevskaya, 2016, p. 1).

Theoretically, the civic position was policy. Scholars, from Aristoteles to Pierre Bourdieu, have demonstrated that policy is understood as a moral obligation to serve common virtue, primarily the “community” interest, in which individuals and/or groups are connected (Hess, 2016). Still, according to Hess, current policy offers various discussions of media power in the digital age and its relationships with life sustainability. Moreover, in Australia, digital media is positioned as a “guard” and “giver” of policy in the social environment. Garcia and de Roock (2021) confirm that digital tools have opened communication pathways and enabled democratic action. Therefore, pedagogically, the project citizen requires unity to underlie the interplay between the civic-digital space and the analogue-platform device, where students usually perform their activities, thereby consolidating the concepts of civic, digital, and students’ critical thinking. In detail, the development of the project citizen at Figure 1.

Figure 1.

Development of the Project Citizen Digital



Source: Research Data, 2024.

The design of such a model was expected to contribute to civic competency, thereby promoting civic awareness, critical thinking, and collaborative and communicative skills, leading to a better understanding of the world, norms, and values (Garcia-Esteban, 2020). It is,

then, in line with Clements (2022), arguing that the use of technology and adjustable features or capacities to communicate improves understanding of Civic Education.

Implement Phase

During the implementation phase, students used Project Citizen Digital in their learning activities. They collaborated in groups, analysed public issues, and presented policy-related solutions. This approach supports findings that digital environments can encourage civic involvement and collaborative problem-solving (Garcia-Esteban, 2020; Danieliene & Tolmach, 2019). The learning process also promoted digital citizenship, as students practised responsible online communication and civic expression. Similar results have been reported by Hsu et al. (2020), who found that online participation strengthens civic responsibility. In addition, digital learning facilitated the development of media literacy and socio-civic skills (Clements, 2022; Peart et al., 2022).

Regarding the relationships with digitalisation, Chouliaraki (2016) stated that how and what impacts arising from the project citizen-to-Civic Education are mediated on the digital platform. Based on SPSS 29 calculations, the results of all arranged questions in this research were valid, as they satisfied the instrument reliability test. Further, the 36 items of the questionnaire were found to be reliable. The obtained value was 0,873 (Cronbach's Alpha), or greater than the r-table by 0,1796. Therefore, the research instruments could be considered valid. After that, the normality test was performed using the One-Sample Kolmogorov-Smirnov Test. If the results of the normality test indicated a significance value greater than 0.05, the data were normally distributed. Conversely, if the p-value was less than 0.05, the data were not normally distributed. The following are the results of the normality test using SPSS 29 software:

Table 1.

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		40
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	9.17645574
Most Extreme Differences	Absolute	.115
	Positive	.061
	Negative	-.115
Test Statistic		.115
Asymp. Sig. (2-tailed)		.200[c,d]

Source: Research Data, 2024.

Based on the results of the normality test in SPSS version 29, the data were not normally distributed, as the p-value of 0.200 was greater than 0.05. After all sequences, up to the implementation stage, were completed, the evaluation of the Project Citizen Digital's impacts was conducted. Data analysis was conducted using a one-group pre-test and post-test design. The issue raised in this test was whether the difference in civic competency before and after the civic education learning process was available via the Project Citizen Digital.

Table 2.

Results of data analysis using a one-group pre-test and post-test

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	T	df	Sig. (2-tailed)
Pair 1	Pre-test – Post-test	-6.13750	11.79331	1.31853	-8.76197	-3.51303	-4.655	79	.000

Source: Research Data, 2024.

Since the Sig2-tailed value was 0,000 < 0,025, Ho was rejected. It means that there was a value difference before and after the learning process using the Project Citizen Digital. This condition was due to an increase in media literacy to affirm civic competency through telecollaboration in the virtual space (Garcia-Esteban, 2020). In detail, the increase was an average of 145,98 to 152,12 from N = 80. Meanwhile, the extent of the relationship between the implementation of the project citizen digital and civic competency was 0,755, with a significance value of 0,000. Then, it illustrates that students experienced benefits in half of the construct variables of civic competency (LeCompte et al., 2020).

The project Citizen Digital is designed to minimise learning by allowing students to contribute in line with their abilities and to perform crisis analysis of their actions in relation to the situation they are dealing with (Kasperowski & Hillman, 2018). This happens because society shifts to a peer-to-peer model, marked by new methods for producing outcomes, ranging from software to accessible scientific knowledge, and by collaboration with various parties and scientists (Wildschut, 2017, p. 46). Thus, according to Wildschut, it becomes a sign that citizens have evidently been able to raise their own questions, prepare their projects, self-educate, and manage complex projects, thereby producing collaboration from insightful knowledge (Wildschut, 2017, p. 52). However, in general, there are some firm trial-and-error elements (Cunha et al., 2017, p. 2229).

In their research, Dewi et al. explained that Project Citizen Digital is the application of a digital-based project citizen learning model, with positive implications for the development of students' competency as global citizens. Educators in the project Citizen Digital facilitate comprehension of the concept by meeting the criteria for product quality, such as validity and practice. Beneficially, the Project Citizen Digital is deemed valid by materials experts at 93% and by media practitioners at 95%. Also, the implementation of the project Citizen Digital is practicable based on students with the ideal percentage of 90% (Dewi et al., 2020, pp. 94-100).

In short, Project Citizen Digital can be an effective collaborative online learning approach, providing experience and security while promoting knowledge, skills, and character in a given context (Dahliyana et al., 2023; Garcia-Esteban, 2020). Then, the Project Citizen Digital is not only developed to focus on some components of technological digitalisation, but must also involve socio-application aspects and students' competencies (Stein et al., 2022). Subsequently, this process is performed to facilitate technology literacy and technological adoption in the educational process; on the other hand, it perfects and diversifies technology to better align with students' experiences (Cazacu et al., 2020).

Moreover, the focus of the Project Citizen Digital lay on individual capacity to study, mobilised into the narration and the Indonesian context in training civic (Bengtsson, 2015; Guerrero Romera et al., 2020). The achievement of civic competency occurs when students are stimulated to find data and facts and review them based on theory individually, through their reflection process. Hence, a balanced education process is created between knowledge, skills, and disposition (Tolstenko et al., 2019).

Evaluate Phase

The evaluation phase focused on measuring learning outcomes. Statistical analysis showed a significant difference in students' civic competency before and after the learning intervention. The paired-sample test produced a Sig. (2-tailed) value of 0.000 < 0.025, indicating that the Project Citizen Digital approach had a positive effect on learning outcomes. These findings support previous research that emphasises the importance of experiential and action-based civic learning (LeCompte et al., 2020). Furthermore, online civic engagement has been shown to encourage reflective learning and social interaction (Kasperowski & Hillman, 2018).

The limitation of the research is that it has not further analysed students' perspectives on Project Citizen Digital across various countries, as suggested by Öztürk et al. (2021). Thus, the

implementation of the Project Citizen Digital still has limited coverage on the personal demand of students in the step-by-step implementation of the model, as the research findings of Sklad et al. (2022) described that the pattern will have obscure feedback from the receiver, context, and demand to follow the model implementation. Also, the Project Citizen Digital's performance will be affected by the instructor, particularly their science background, understanding of the model implementation steps, and evaluation guidance. It will, then, affect individual motivation to use digital media, particularly the Project Citizen Digital (Nah & Yamamoto, 2018b).

Conclusion

This study confirms that Project Citizen Digital can function as an effective learning model for Civic Education in the digital era. The findings demonstrate that integrating project-based learning with digital technology enables students to develop civic competency more meaningfully, not only through knowledge acquisition but also through civic skills and character formation. The significant difference between pretest and posttest scores indicates that Project Citizen Digital positively influences students' civic competency. Learning activities such as issue analysis, collaborative discussion, digital communication, and public presentation allow students to experience citizenship as an active and reflective process rather than as abstract theory. Moreover, the application of the ADDIE model ensures that the development and implementation of Project Citizen Digital follows a systematic instructional design process. Through careful analysis, structured design, and data-driven evaluation, this model demonstrates its potential as a scalable and adaptable approach for higher education institutions. Therefore, Project Citizen Digital is not only a technological innovation but also a pedagogical strategy that strengthens civic engagement and democratic participation in contemporary society. Universities are encouraged to consider this model as an alternative framework for revitalizing Civic Education in the digital age.

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