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Delivering Dynamic Civics Learning Through the TPACK Approach at the Elementary School Level

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Abstrak. Penelitian ini bertujuan menganalisis implementasi pendekatan Technological Pedagogical Content Knowledge (TPACK) dalam menciptakan pembelajaran PKn yang dinamis di jenjang sekolah dasar, sekaligus mengidentifikasi tantangan yang dihadapi pendidik. Metode yang digunakan adalah Systematic Literature Review (SLR) dengan meninjau 15 artikel penelitian terpilih yang dipublikasikan antara tahun 2020 hingga 2026. Sumber literatur diperoleh dari database Google Scholar, DOAJ, Sinta, dan Garuda menggunakan kata kunci "TPACK", "Pendidikan Kewarganegaraan", dan "pembelajaran PPKn SD/MI". Hasil kajian ini menunjukkan bahwa pendekatan TPACK memiliki potensi transformatif dalam pembelajaran PKn, terutama bila dipadukan dengan model Project-Based Learning dan Contextual Teaching and Learning yang terbukti meningkatkan hasil belajar kognitif dan afektif serta motivasi belajar siswa. Selain itu, TPACK berperan penting dalam memperkuat pembentukan karakter siswa dan pengembangan kewarganegaraan digital. Kajian ini juga menyoroti integrasi kecerdasan buatan (AI) seperti ChatGPT sebagai asisten instruksional masa depan. Meskipun demikian, sejumlah tantangan utama diidentifikasi, antara lain rendahnya literasi digital guru (terutama guru senior), keterbatasan infrastruktur teknologi, kesulitan manajemen waktu pada model berbasis proyek, serta kesenjangan antara penguasaan konten dan integrasi pedagogi–teknologi oleh guru.
Kata kunci: Pendidikan Kewarganegaraan, TPACK, Pembelajaran Dinamis, Sekolah Dasar.

Abstract. This research aims to analyze the implementation of the Technological Pedagogical Content Knowledge (TPACK) approach in creating dynamic Civic Education (PKn) learning at the elementary school level and to identify the challenges educators face. The method used is a Systematic Literature Review (SLR) that reviews 15 selected research articles published between 2020 and 2026. Literature sources were obtained from Google Scholar, DOAJ, SINTA, and Garuda databases using the keywords "TPACK", "Citizenship Education" (Civic Education), and "elementary school Civics learning". The review findings indicate that the TPACK approach has transformative potential for Civics learning, especially when combined with Project-Based Learning and Contextual Teaching and Learning models, which have been shown to improve students' cognitive and affective learning outcomes and their motivation to learn. Moreover, TPACK plays an important role in strengthening students' character and digital citizenship. This review also highlights the integration of artificial intelligence (AI), such as ChatGPT, as a future instructional assistant. Nevertheless, several key challenges were identified, including low digital literacy among teachers (particularly senior teachers), limited technological infrastructure, difficulties in time management when using project-based models, and the gap between teachers' content mastery and their integration of pedagogy and technology.
Keywords: Civic Education, TPACK, Dynamic Learning, Elementary School

INTRODUCTION

Civics Education (PKn) plays a strategic and important role in shaping students' character and personality as good and responsible citizens. It plays a role in shaping democratic attitudes, building tolerance, fostering a culture of deliberation to reach consensus, and strengthening the spirit of nationalism and love for the homeland in students (Magdalena et al., 2020). However, Civics Education learning in elementary schools generally still faces methodological problems, emphasizing cognitive aspects, so that Civics Education is often perceived by students as a subject that is full of memorization and difficult to understand (Nurdiana Sari et al., 2023). Low student attention, motivation, and interest are among the obstacles in PKn learning (Kurniawati & Setyaningtyas 2022). In addition, Lubis (2019)it emphasizes that some of the material is not fully relevant to students' lives. As a result, PKn learning risks only producing conceptual understanding, without continuing to apply civic values in everyday life (Putri et al., 2021).

The Technological Pedagogical Content Knowledge (TPACK) framework offers a solution to transform civics learning into a more dynamic one. The integration of TPACK into learning creates innovative and relevant learning experiences, aligning with the goals of the Merdeka Belajar programe, which emphasizes competency-based and student-centered learning (Siswadi et al., 2025). The use of technology supports more active interactions between teachers and students, as well as among students themselves, making the learning process more enjoyable and effective, fostering students' active and creative learning (Janah, 2022).

The TPACK framework offers a solution to transform Civics learning to be more dynamic. The integration of TPACK into learning creates an innovative and relevant learning experience, in line with the objectives of the Merdeka Belajar programe which emphasizes competency-based and student-centered learning (Siswadi, 2025). The application of TPACK can improve students' understanding of the material and increase their active involvement in the learning process (Dahnial et al., 2023). Civics learning that applies the TPACK approach that integrates technology will help the learning process be dynamic and effective. This will support students in understanding the learning and make the learning atmosphere more enjoyable (Nurlaili & Adawiyah, 2024).

TPACK offers a solution to transform civics learning to be more dynamic by integrating content knowledge (CK), pedagogy (PK), and technology (TK) harmoniously. (Tamba, 2021). Several studies have shown that the application of TPACK in learning. First, TPACK interventions combined with contextual pedagogical models such as Project-Based Learning (PjBL) and Contextual Teaching and Learning (CTL) have been shown to improve students' cognitive, affective, and motivational outcomes (Anshari & Qurrotaini, 2026; Susilawati et al., 2025). Second, TPACK-based training and mentoring programs effectively improve teachers' abilities in developing teaching modules and technology-based learning practices (Nuraini et al., 2023; Siswadi et al., 2025). Third, large-scale quantitative studies show variations in TPACK abilities among teachers influenced by educational background and professional experience, indicating the need for differentiation in professional development programs (Li et al., 2022).

However, due to limited digital facilities and skills among both students and teachers, this technology has not been utilized optimally. Limited internet access, especially in underdeveloped areas, is a major inhibiting factor, reducing schools' opportunities to integrate technology into teaching and learning activities (Wulandari et al., 2023). Consistent barriers include low digital literacy among senior teachers, limited technological infrastructure, and time management challenges in implementing project-based models (Damanik et al., 2025; Putri et al., 2023).

Furthermore, a new and understudied issue is the integration of artificial intelligence (AI) within the TPACK framework. A study of teachers' perceptions of ChatGPT demonstrates the potential of AI as an instructional assistant, but also highlights the risks of dependency and the need for AI literacy (Uğraş et al., 2024). Collaborative approaches such as lesson study have also proven effective in strengthening pedagogical aspects and analyzing teaching practices that support TPACK development (Jiménez Sierra et al., 2024). This highlights the need for systematic studies that not only highlight the effectiveness of TPACK but also identify practical challenges and opportunities for educational technology innovation.

Although studies on educational technology continue to grow, research specifically synthesizing the implementation of TPACK in civics learning at the

elementary school level remains fragmented. Research gaps exist regarding how teachers manage technical barriers, time management in project-based models, and the integration of digital ethics into civics content. Therefore, this study aims to conduct a systematic review of 15 articles.

Thus, this Systematic Literature Review (SLR) is crucial to provide a comprehensive overview of the effectiveness of TPACK on students' cognitive, affective, and thinking skills learning outcomes. It also explores effective accompanying pedagogical models and challenges to consistent implementation. It also explores policy recommendations and strategies for teacher professional development to make civics learning more dynamic, relevant, and sustainable in the digital age.

RESEARCH METHODOLOGY

This research uses a Systematic Literature Review (SLR) approach to identify, select, evaluate, and synthesize previous research results relevant to the implementation of Technological Pedagogical Content Knowledge (TPACK) in Civics (PKn) learning at the elementary school level. The SLR approach was chosen because it is able to present a systematic, transparent, and accountable literature mapping, especially to see the trend of themes, research designs, empirical findings, and research gaps that have not been widely studied. Thus, this study does not simply summarize previous articles, but also attempts to compile a conceptual synthesis of how the TPACK approach is used to present more dynamic, interactive, and meaningful Civics learning. (Kitchenham & Charters, 2007; Okoli & Schabram, 2010).

The PRISMA method has 4 stages, namely identification, screening, feasibility, and finally, data extraction to be used (Okoli & Schabram, 2010). The identification process was carried out through a comprehensive literature search in several reputable academic databases, namely Google Scholar, DOAJ, Sinta, and Garuda. The keywords used include: "TPACK", "Technological Pedagogical Content Knowledge", "Citizenship Education", "Elementary Civics", "Elementary Civics", "Elementary Civics", "Pancasila Education", "civic education", "elementary school", "primary school", "digital learning", "dynamic learning", and "technology-based learning". The time span of the reviewed literature is limited to publications between 2020 and 2026. Then, at the

screening stage, researchers select based on the title and abstract according to the inclusion and exclusion criteria.

Table 1.

Inclusion and Exclusion Criteria

No	Inclusion	Exclusion
1.	Articles published between 2020 – 2026	Articles published outside of 2020-2026
2.	The article discusses TPACK, digital learning, or technology integration in the context of elementary education.	The article does not discuss TPACK, digital learning, or technology integration in the context of elementary education.
3.	The article is related to PKn, Pancasila Education, civic education	The article has no relation to PKn, Pancasila Education, civic education
4.	The article can be accessed and downloaded in full.	The article cannot be accessed and downloaded in full (only the abstract)
5.	The article contains data and research results	The article does not contain research data (literature review, SLR, or review)
6.	articles published in scientific journals	Not a journal article (Proceedings, Books, etc.)

Based on the search results, 15 primary research articles that met all criteria were selected for further analysis. Data were extracted based on specific parameters such as author name, research title, country, methodology, sample, and key findings, which were then summarized in a literature characteristics table.

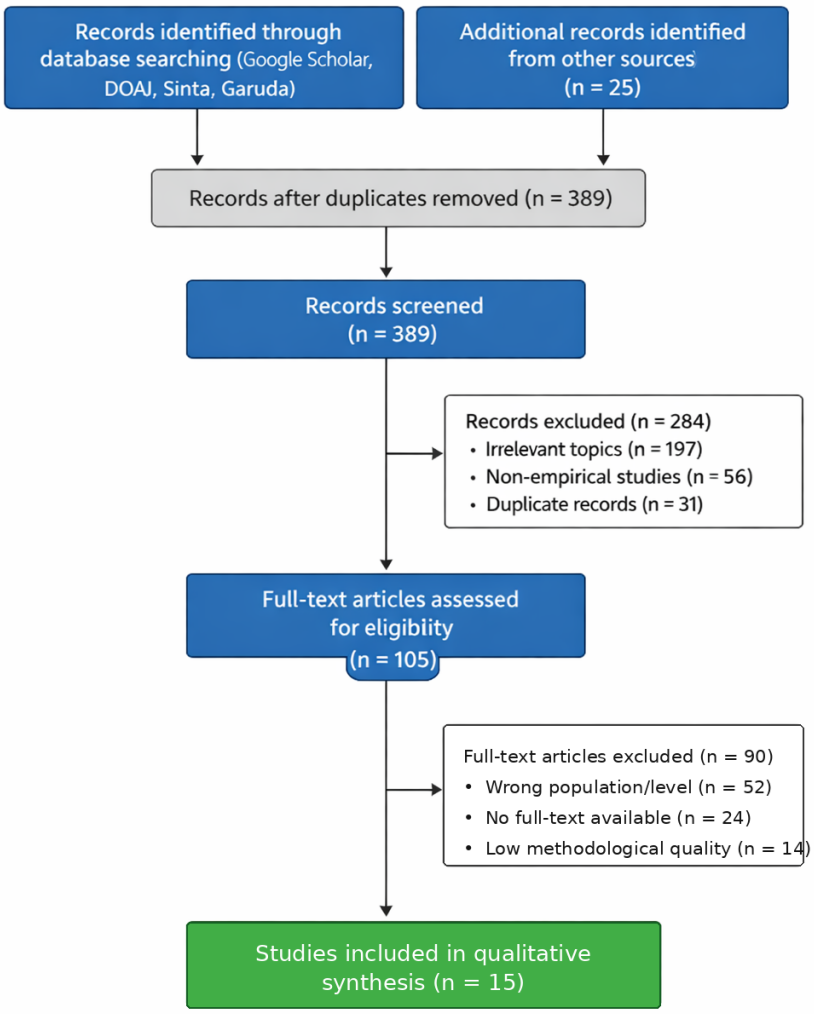

Figure 1.

PRISMA diagram

The data analysis technique was carried out through thematic synthesis. Thematic synthesis was carried out by grouping the article findings into several main themes, namely: (1) TPACK as a Framework for Civics Learning Transformation; (2) TPACK-Based Learning Models and Their Impact on Learning; and (3) Challenges in TPACK Implementation. In addition to thematic synthesis, this study also used descriptive analysis to map the characteristics of the articles. Descriptive analysis was carried out by calculating and grouping articles based on the year of publication, type of research method, research subject, and main focus of the study.

RESULTS AND DISCUSSION

Results

1. General Characteristics of the Analyzed Articles

Based on the literature selection process, this research analyzed 15 articles relevant to the implementation of Technological Pedagogical Content Knowledge (TPACK) in civics learning, Pancasila Education, civic education, character education, digital citizenship literacy, and technology-based learning at the elementary school level or basic education context.

Table 2.

Article Summary

No	Author Name	Year	Research Subjects	Types of research	Research result
1	Annida Lathifa Riandy Putri, et al.	2023	20 class teachers at Cemara II State Elementary School, Surakarta	Descriptive qualitative	Teachers, especially older ones, still have difficulty operating technology and are not yet able to create new technological media independently.
2	Dea Mustika, et al.	2022	60 PGSD FKIP students class of 2019 (prospective teachers)	Descriptive quantitative	Students have a good understanding of technology (average score 84) to support the implementation of learning.
3	Elisa Mawarni et al.	2024	1 teacher and 20 fifth grade students of SDN Sukun 3, Malang City	Research and Development (R&D) ADDIE model.	The media is very suitable (88%-98%), very practical (97%), and effective in improving student learning outcomes (N-gain 0.8)
4	Elya Umi Hanik, et al.	2022	Elementary School Teacher at the Indonesian	Qualitative.	The implementation of blended learning through Google Classroom is effective

			School Kuala Lumpur (SIKL)		in overcoming learning barriers during the pandemic.
5	Fathia Puti Anshari, et al.	2026	2 teachers and 10 fifth grade students of SDN Jatinegara 02	Descriptive qualitative.	The TPACK-based PjBL model improves the quality of learning, motivation, and creates active-collaborative learning.
6	Hilal Uğraş, et al.	2024	Group of elementary school teachers in Türkiye	Qualitative (Case Study).	ChatGPT has the potential to help teachers prepare lesson plans and materials, but the accuracy of the information needs to be monitored critically.
7	Irfan Dahnial, et al.	2023	Citizenship Education Teacher	Quantitative	The TPACK model is very effective in online learning (64% contribution) and improves learning outcomes and teaching practices.
8	Ni Luh Sakinah Nuraini, et al.	2023	24 teachers are members of KKG 8, Karangbesuki Subdistrict, Malang	Community Service (Training).	More than 90% of participants were able to create teaching modules that integrated TPACK in an interesting and useful way.
9	Prince Clinton IC Damanik, et al.	2025	teachers at elementary schools in Jakarta	Descriptive qualitative.	Teachers act as digital mentors and moral role models who integrate Pancasila values into

					technology-based learning.
10	Samsul Susilawati, et al.	2025	Students of class IV of MI Al-Hikmah Simpar Poncokusumo Malang	Quantitative (Quasi-experiment).	The CTL-TPACK model has a significant influence on improving students' cognitive and affective learning outcomes (tolerance).
11	Siswadi, et al.	2025	26 teachers of SDN Karangpawitan III, Karawang	Community Service (Training).	The training succeeded in significantly improving teachers' understanding of integrating interactive technology in the classroom.
12	Suqi Li, et al.	2022	Group of teachers in Nanjing, China	Quantitative (Differential Analysis)	There are significant differences in the dimensions of CK, PK, TPK, TCK, and TPACK based on teaching stage and education level.
13	Venna Puspita Sari, et al.	2026	Prospective elementary school teachers in Jakarta	Qualitative (Case Study)	Good understanding of content, but pedagogical competence and technology integration are still limited to technical/media aspects only.
14	Waliyul Maulana Siregar, et al.	2024	Fourth grade students of State Elementary	Quantitative (Quasi Experiment).	The use of Lectora Inspire has a significant effect on improving learning

			School 101771 Tembung		outcomes compared to conventional methods.
15	Ángel Jiménez Sierra, et al.	2024	8 teachers at IED Edgardo Vives Campo, Colombia	Qualitative (Case Study) through Lesson Study.	Teachers have an advanced understanding of content and pedagogy, but technology integration is still at an intermediate level.

2. Articles by Publication Year

Figure 2.

Publication Year

In 2022, there were three articles published: research by Mustika (2022), a study by Hanik (2022), and a study by Li (2022). In 2023, the number of publications remained consistent with three articles, including research by Putri (2023), a study by Dahnial (2023), and a study by Nuraini (2023). In 2024, there was a peak in publication distribution with a total of four articles. These sources were by Mawarni (2024), Uğraş (2024), Siregar & Manurung (2024), and a study by Jiménez Sierra (2024). In 2025, there were three articles published: Damanik (2025), a study by Susilawati (2025), and also a study by Siswadi (2025). In 2026, there were two new articles, by Anshari & Qurrotaini (2026)and analysis by Sari (2026).

3. Articles based on Research Methods

Figure 3.

Publication Method

Based on the analysis of the 15 sources you specified, here are the details of the division of the research methods, Qualitative has 7 articles, dominating the distribution with a focus on descriptive analysis, case studies, and phenomenology. Articles in this category include works by Putri (2023), Hanik (2022), Anshari & Qurrotaini (2026), Uğraş (2024), Damanik (2025), Sari (2026)and Jiménez Sierra (2024). Quantitative has 5 articles. Used to measure statistical ability, model influence, or differential analysis. This category includes studies by Mustika (2022), Dahnial (2023), Susilawati (2025), Li (2022), and Siregar & Manurung (2024). Community Service/Training has 2 articles, focusing on developing teacher professionalism through workshops and practical mentoring, namely by Nuraini (2023)and Siswadi (2025). Finally, in Research and Development there is 1 article, focusing on developing learning media products using the ADDIE model, namely research by Mawarni (2024).

4. Articles by Research Subject

Table 3.

Research Subjects

Research Subjects	Number of Articles	Study References
Teacher	8	Putri (2023), Hanik (2022), Uğraş (2024), Nuraini (2023), Damanik (2025), Siswadi (2025), Li (2022), Jiménez Sierra (2024)

Teachers and Students	3	Mawarni (2024), Anshari & Qurrotaini (2026), Dahnial (2023)
Student	2	Susilawati (2025), Siregar & Manurung (2024)
Prospective teacher	2	Mustika (2022), Sari (2026)

Articles with the subject of research on Teachers are 8 articles, which are the most dominant subject, researched by Putri (2023), Hanik (2022), Uğraş (2024), Nuraini (2023), Damanik (2025), Siswadi (2025), Li (2022)and Jiménez Sierra (2024). Articles with the subject of research on Students are 2 articles, focusing on student learning outcomes, namely studies by Susilawati (2025)and Siregar & Manurung (2024). Articles with the subject of research on Prospective Teachers are 2 articles, examining the readiness of prospective educators, conducted by Mustika (2022)and Sari (2026). Articles with the subject of research on Mixed Teachers and Students are 3 articles, involving the interaction of both in the development of media or models, namely Mawarni (2024)and Anshari & Qurrotaini (2026). Dahnial (2023).

5. Articles based on Findings Themes

TPACK Competencies of Teachers and Prospective Teachers This theme emerged in studies Sari (2026), Jiménez Sierra (2024), Li (2022), Mustika (2022), and Putri (2023). Collectively, the findings indicate that teachers and prospective teachers generally possess adequate content understanding (CK) and pedagogical understanding (PK), but mastery of technology (TK) is often the weakest point. The studies highlight that senior teachers face challenges in technology adaptation, while prospective teachers tend to be stuck in purely technical/media technology integration without deep pedagogical transformation.

The Use of Interactive Media, Digital Teaching Modules, and Technology-Based Learning This theme is evident in research Mawarni (2024)by , Nuraini (2023), Siswadi (2025), Hanik (2022), Uğraş (2024)and Siregar & Manurung (2024). Findings indicate that the use of platforms such as *Canva* , *Lectora Inspire* , *Google Classroom* , and AI tools like *ChatGPT* or *Chatbox* have proven effective in improving learning outcomes and student engagement. This

integration helps simplify abstract concepts into engaging visuals, although its success depends heavily on infrastructure readiness and ongoing teacher training.

TPACK-Based Learning Models This theme is prominent in studies Anshari & Qurrotaini (2026), Dahnial (2023), and Susilawati (2025). These three studies demonstrate that the TPACK framework is most effective when combined with active learning models such as *Project-Based Learning* (PjBL) and *Contextual Teaching and Learning* (CTL). Implementing these models with technological support has been shown to significantly improve learning quality, motivate students, and enhance cognitive learning outcomes and the effectiveness of online learning.

TPACK for Strengthening Character and Digital Citizenship. This theme emerged in studies Damanik (2025), Susilawati (2025), and Mawarni (2024). The findings indicate that TPACK plays a crucial role in fostering ethical digital literacy and character building in line with the Pancasila student profile. Teachers act as digital mentors who integrate moral values into technology use, such as fostering tolerance through social learning and guiding students to face the challenges of the digital era with ethical responsibility.

TPACK Implementation Challenges This challenge theme is spread across various articles, especially in Sari (2026), Putri (2023), Uğraş (2024), Siswadi (2025)and Anshari & Qurrotaini (2026). The most frequently reported barriers include low ability to integrate transformative technology, infrastructure limitations (signal and devices), difficult time management in implementing active learning syntax, and technical risks such as the spread of false information from AI or low parental involvement in supporting digital literacy at home.

Discussion

1. TPACK as a Framework for Civics Learning Transformation

The synthesis of 15 sources shows that TPACK is a strategic framework for transforming Pancasila Education learning from conventional to more innovative. The use of interactive media has proven **"** effective in improving Pancasila education learning outcomes (Siregar & Manurung, 2024)." However, this transformation does not occur automatically due to challenges in

meaningfully connecting technology with pedagogy. Sari (2026)found that "integration technology in learning still focuses on technical aspects and media use, and does not fully support pedagogical strategies". This is reinforced by the finding Putri (2023)that many teachers, especially older ones, "have not been able to utilize technology to create new representations" due to limited digital literacy.

Therefore, in the elementary school context, technology must be positioned as a means to deliver concrete and reflective civic learning experiences. Through the right approach, such as the TPACK-based *Contextual Teaching and Learning* (CTL) model, "Students can be creative and active, think critically, can follow the technology used by educators and learn more easily (Susilawati et al., 2025)." By positioning teachers as "digital mentors and moral role models," the TPACK framework helps students understand abstract concepts through interactive platforms such as Canva, which is "very feasible, practical, and effective as an innovative Pancasila learning medium (Damanik et al., 2025; Mawarni et al., 2024). " In this context, TPACK plays a strategic role in transforming Civics learning to be more adaptive, engaging, and able to foster a deeper awareness of the nation and state. Overall, the integration of the TPACK approach in Civics learning creates a dynamic, interactive learning atmosphere and is able to strengthen students' competency achievement. (Fitria & Mustika, 2024; Siboro & Jamaludin, 2024).

2. TPACK-Based Learning Model and Its Impact on Learning

The synthesis results from 15 article sources show that the TPACK framework achieves maximum effectiveness when combined with active learning models such as *Project Based Learning* (PjBL) and *Contextual Teaching and Learning* (CTL). The implementation of the TPACK-based PjBL model has been proven to be "capable of creating active, collaborative learning, and in accordance with the characteristics of 21st-century students" (Anshari & Qurrotaini, 2026). Meanwhile, the integration of CTL with TPACK has a significant impact where students can be creative and active, think critically, can follow the technology used by educators, and learn more easily (Susilawati et al., 2025). This effort is supported by the improvement of teacher competence through training, where "more than 90% of participants can

present interesting examples of TPACK implementation packaged in the form of teaching modules" (Nuraini et al., 2023).

These findings reinforce the urgency of transforming Pancasila Education learning from a one-way pattern to a more participatory one through digital technology that is "interactive and effective, thereby improving students' literacy and numeracy skills (Siswadi et al., 2025)." The use of media such as Canva allows for the development of features "such as games and fun quiz practice questions so that students can easily understand the material independently (Mawarni et al., 2024). " Thus, TPACK is not just a technical tool, but a pedagogical foundation that allows students to connect the abstract concepts of Pancasila with real situations in their environment through relevant digital platforms. According to (Witarsa & Siregar, 2023), the implementation of the TPACK learning model can actually improve students' cognitive abilities at the elementary school level. TPACK can be an important foundation for teachers in developing innovative, adaptive, and contextual learning. A deep understanding of these three elements will help teachers provide a more enjoyable, relevant, and meaningful learning experience for students, both now and in the future (Tamba, 2021).

3. Inequality between CK/PK and TK/TPK/TCK

The results of the synthesis of 15 article sources indicate a gap between mastery of content-pedagogy and actual technology integration capabilities. Sari (2026)revealed that "technology integration in learning still focuses on technical aspects and media use, and has not fully supported pedagogical strategies." This is reinforced by findings Jiménez Sierra (2024)that noted that although teachers have high competencies in the PK and CK domains, the diagnostic results still highlight areas for improvement in developing the technology components of TPACK, especially TK, TPK, and TCK . In fact, Li (2022)it concluded that compared to other TPACK dimensions, "teachers' TK ability was the weakest."

This disparity indicates that mastery of digital tools does not automatically result in meaningful integration. Putri (2023)noted that many teachers, especially older ones, "are not yet able to utilize technology to create new representations" due to limited digital literacy. Therefore, teachers must have

the ability to "make decisions regarding how to determine, adapt, and implement lessons that are appropriate to pedagogy and technology" so that Pancasila Education learning becomes more reflective and contextual (Hanik et al., 2022).

4. Findings on Challenges of TPACK Implementation

Although the TPACK framework offers significant opportunities for educational innovation, the synthesis reveals significant challenges hindering its implementation. These challenges can be grouped into four main areas. First, the challenge of teacher competency, where "many teachers, especially older teachers, are still unable to operate technology effectively (Putri et al., 2023)." Another study confirms that "technology integration in learning still focuses on technical aspects and media use, and does not fully support pedagogical strategies." (Hanik et al., 2022; Jiménez Sierra et al., 2024; Mustika et al., 2022)Second , the challenge of curriculum and teacher education, where preparation programs "need to strengthen pedagogical scaffolding and reflective learning experiences" so that students do not understand technology in isolation from content and pedagogy (Sari et al., 2026). Third, according toDamanik (2025) infrastructure challenges, such as "unequal access to digital devices, limited internet connectivity", are amplified byUğraş (2024) especially for "schools in rural areas or those underfunded. Fourth, pedagogical and managerial challenges, which include "classroom management difficulties and limited learning time" (Anshari & Qurrotaini, 2026). as well as technical risks such as "ChatGPT's potential to provide false information" which can hinder information literacy (Uğraş et al., 2024). These findings confirm that TPACK requires teachers to choose technology that aligns with learning objectives and student characteristics. The success of its implementation depends heavily on "shared responsibility between schools and families", because "low parental involvement" remains a major obstacle in supporting children's digital literacy (Damanik et al., 2025).

CONCLUSION

This synthesis of 15 articles demonstrates that TPACK has transformational potential in elementary school Civics (PKn) learning. When teachers are able to

integrate technology with Pancasila materials and active learning strategies (such as PjBL or CTL), student learning outcomes can improve significantly. TPACK has also been shown to support students' character development and digital literacy, making Pancasila values more easily understood through interactive media. However, the gap between content/teacher mastery and technology integration remains a major obstacle. These findings emphasize the importance of ongoing professional training: teachers need to be supported in learning about digital pedagogy and selecting appropriate media. Furthermore, curriculum recommendations include the development of TPACK-based teaching modules that explicitly integrate content objectives, pedagogical strategies, and technology. This way, Civics (PKn) learning in elementary schools can shift from rote memorization to a participatory and contextual process. Ultimately, this SLR helps summarize research focuses and gaps in the literature, and provides guidance for developing more targeted TPACK in elementary education.

Although the TPACK approach offers various advantages, its implementation still faces various challenges, ranging from limited technological infrastructure, minimal ongoing training for teachers, to low motivation of educators in adopting technology. To overcome these challenges, systematic and collaborative efforts are needed from various parties, including improving access to and quality of training for teachers, strengthening technological infrastructure in schools, developing innovative and flexible training programs, and strengthening cooperation between educational institutions, universities, and technology companies. Thus, improving teachers' TPACK competencies can be realized sustainably, so that Civics learning can be presented more dynamically and effectively in shaping students' character as good and responsible citizens, who have a deep understanding of the values of Pancasila and are able to implement them in their daily lives.

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