

Analysis of Technological Pedagogical Content Knowledge of Pancasila Education Teachers

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Abstract

This study examines how Pancasila Education teachers provide an understanding of the meaning and values of Pancasila in the topic of embodying Pancasila through the implementation of TPACK. The application of a Technological Pedagogical Content Knowledge (TPACK)-oriented learning approach is a teaching model in the field of education that encompasses the competencies teachers need to possess. Through this TPACK-oriented learning approach, teachers can perform their roles optimally and increase the likelihood of achieving educational goals, particularly in Pancasila Education. This research employs a qualitative method with a case study strategy, and the sampling technique used is purposive sampling. The number of informants in this qualitative research is determined based on the saturation of the data collected during the study. The subjects in this study consisted of two Pancasila Education teachers (G₁ and G₂) and 60 students from grade XI. Based on the research conducted, the findings indicate that Pancasila Education teachers at one senior high school in Surakarta City have demonstrated a good understanding of integrating technology, pedagogy, and content in the learning process.

Keywords: *Technological Pedagogical Content Knowledge, Pancasila Education, Teachers.*



A. INTRODUCTION

Pancasila as the foundational ideology of the Indonesian state and the guiding principle for its citizens, holds a central role in shaping national character. Its significance is evident in its inclusion as a compulsory subject taught from elementary school through to higher education. This approach is intended to help realize the national ideals of a just, prosperous, and united society. The values of Pancasila must be taught comprehensively, systematically, and in a well-planned manner, as mandated by Law No. 20 of 2003 on the National Education System, Article 1, Paragraph 1.

Pancasila consists of five interrelated and inseparable principles. The first principle, Belief in One Supreme God, affirms the acknowledgment of and faith in a single divine being while guaranteeing the freedom for every citizen to adhere to and practice their religion according to personal beliefs. The second principle, Just and Civilized Humanity, emphasizes respect for human dignity, equitable treatment of others, and the upholding of humanitarian values. The third principle, The Unity of Indonesia, prioritizes national unity above all and aspires to build a united, cultured, and dignified nation. The fourth principle, Democracy Guided by the Inner Wisdom in the Unanimity Arising from Deliberation among Representatives, reflects the

implementation of governance based on deliberation and consensus, ensuring citizen participation in decision-making processes. Lastly, the fifth principle, Social Justice for All Indonesians, seeks to establish a fair and prosperous society, offering equal opportunities for all citizens to achieve well-being and justice (Cahyati et al., 2024).

These five principles are expected to be implemented by all Indonesian citizens in their daily lives. However, there is growing concern about the decline in the practice of Pancasila values, particularly in the current era of intense globalization. Several factors contribute to this decline, including the lack of effective dissemination of Pancasila values, low levels of public education, increasing apathy, hedonism, and the rise of materialistic attitudes (Putri, 2013).

This decline can be observed in various incidents and violations across the country. For instance, on August 9, 2023, a group of individuals vandalized a church building in Kabil Subdistrict, Nongsa District, Batam City—an act that violates the first principle (Kompas.id, 2023). In another case, a teenager committed sexual assault against his girlfriend in Medan, North Sumatra, in January 2024, representing a violation of the second principle (Detik.com, 2024).

Challenges to the third principle are also evident. According to Kompas.com (2022), the Free Papua Movement (Organisasi Papua Merdeka, or OPM), now referred to as an Armed Criminal Group (Kelompok Kriminal Bersenjata, or KKB), continues to operate in Papua and West Papua. Established in 1965, this movement seeks secession from the Republic of Indonesia and has recently been involved in taking a Susi Air pilot hostage.

Furthermore, the case involving Ronald Tannur, in which he assaulted his girlfriend leading to her death, highlights the decline in Pancasila value implementation. In addition to the inhumane treatment and loss of life (violations of the first and second principles), the perceived unjust court decision that acquitted Tannur also contradicts the fourth and fifth principles, as it demonstrates a lack of justice for the victim and her family. This case exemplifies the legal disparities currently evident in Indonesia (Kompas.com, 2024).

Based on these observations, there appears to be a significant discrepancy between the ideal practice of Pancasila values (*das sollen*) and their actual implementation (*das sein*). The researcher assumes that Civic Education teachers have not yet fully optimized their roles in teaching these values, as expected by professional competency standards. Teachers play a vital role in shaping students' understanding and internalization of Pancasila values in everyday life. This role becomes even more critical in recent years, as the integration of technology into education is increasingly emphasized. This trend is in line with the demands of the digital era, where individuals are expected to possess adequate digital competence amid the ease of access to foreign cultures.

Therefore, teachers are expected to possess competencies within the framework of Technological Pedagogical Content Knowledge (TPACK). Previous research on TPACK includes a study by Ismail et al. (2022), titled "Needs Analysis of Technological Pedagogical and Content Knowledge (TPACK) in Pancasila Education

Learning," which found that teachers' implementation of TPACK-based learning remains limited, with several needs yet to be addressed. Another study by Reski and Sari (2020), "Analysis of TPACK Competence of Physics Teachers in the Merauke District," revealed that teachers were unable to effectively implement technology-integrated instruction that blends pedagogical and content knowledge. Similarly, Akhwani and Rahayu (2021), in their study "Analysis of TPACK Components of Elementary School Teachers as a Framework for Professional Competency in the 21st Century," concluded that teachers' TPACK capabilities remain low, necessitating targeted improvements in technology-integrated teaching practices.

The TPACK-based instructional approach is a model that incorporates the essential competencies required of educators. According to Koehler and Mishra, TPACK is a conceptual framework used to understand the complex interactions among technology, pedagogy, and content knowledge in educational settings (Schmidt et al., 2009). Through the TPACK approach, teachers can optimize their instructional roles and better contribute to the achievement of educational goals—particularly in the context of Pancasila education.

Based on the aforementioned background, the present study, titled "An Analysis of Civic Education Teachers' Technological Pedagogical Content Knowledge," aims to explore Civic Education teachers' TPACK in delivering the Internalizing Pancasila topic and to identify the challenges they face in implementing TPACK in this context.

B. METHOD

This study employed a qualitative research method with a case study strategy. The selection of the case study strategy was based on Aminah and Roikan's (2019) perspective, which states that case study research generally focuses on "how" and "why" questions, is distinctive and complex, yet has defined boundaries.

Data were collected through observation, interviews, questionnaires, and documentation. The sampling technique used was purposive sampling, meaning participants were selected based on specific considerations and research objectives. The number of informants in qualitative research was adjusted according to data saturation (Hardani et al., 2020). The subjects in this study consisted of two Pancasila Education teachers (G_1 and G_2) and 60 students from grade XI.

Each component of Technological Pedagogical Content Knowledge (TPACK) was assessed based on indicators using the following criteria:

$N \geq 3.50$	= Very Good
$2.50 \leq N < 3.49$	= Good
$1.50 \leq N < 2.49$	= Fair
$N < 1.50$	= Poor

(Source: Danielson, 2013)

C. RESULTS AND DISCUSSION

1. Analysis of Technological Pedagogical Content Knowledge (TPACK)

a. Analysis of Technology Knowledge (TK)

Ismail et al. (2022) in their study emphasized the importance of integrating Technology Knowledge (TK) in Pancasila education, asserting that technological understanding is a crucial aspect for enhancing learning effectiveness. This aligns with the findings of the present study, which revealed that Pancasila education teachers at a senior high school in Surakarta city have integrated technology into their teaching process quite effectively. The use of hardware and software such as laptops, LCD projectors, Microsoft Office, learning management systems (LMS), and Canva indicates that the teachers possess a strong understanding of the functions and benefits of digital technology in education, as highlighted by Mishra and Koehler (2006).

Reski and Sari (2020) investigated TPACK competencies among physics teachers in the Merauke district and found that many teachers still experienced difficulties operating technological devices and adapting to modern learning applications. Contrasting their findings, the current study shows that Pancasila education teachers at the senior high school in Surakarta are proficient in operating various hardware and software tools, such as Quizziz, LMS, and Canva, to support learning activities. This demonstrates that the teachers' technological skills have advanced beyond basic tool mastery toward integrating technology in instructional planning and evaluation, as proposed by UNESCO (2018).

Akhwani and Rahayu (2021), in their examination of TPACK components among elementary school teachers, emphasized the importance of technology integration in lesson planning and assessment as part of 21st-century professional teaching competencies. The current study corroborates their findings by revealing that teachers have developed blended learning lesson plans and utilized Quizziz for formative assessments. Moreover, critical awareness of technology's effectiveness is evident in teachers' efforts to evaluate the impact of technology on student engagement and motivation, consistent with Anderson and Becker's (2001) explanations.

Furthermore, this study found that teachers have begun employing artificial intelligence (AI) tools such as ChatGPT and Gemini for sourcing references and developing teaching materials. This indicates that teachers have adopted the latest technological trends but remain aware of AI limitations in providing valid references. Such critical awareness is essential to ensure that learning remains grounded in credible sources, as recommended by Ismail et al. (2022) regarding the importance of digital literacy for Pancasila education teachers.

Overall, this study demonstrates that Pancasila education teachers at a senior high school in Surakarta possess good technological knowledge and are capable of integrating technology into teaching. This is evidenced by the technology knowledge (TK) scores obtained by G₁ (2.80) and G₂ (3.30), indicating a fairly good competency in technology use. Although challenges such as student distractions and rapid

technological changes remain, the strategies implemented by teachers show proactive responses to these issues.

Given the rapid development of technology, this study recommends enhancing teachers' digital literacy through ongoing training and strengthening policies on technology use in classrooms to maintain optimal learning effectiveness. Additionally, fostering critical awareness of technology limitations, especially in AI utilization, is necessary to ensure learning remains based on credible and academic sources.

b. Analysis of Pedagogical Knowledge (PK)

Based on the findings related to the pedagogical knowledge (PK) of Pancasila education teachers at a senior high school in Surakarta, it was found that the two teachers studied employed different instructional strategies when teaching the material on "Internalizing Pancasila." This finding can be analyzed by linking it to the TPACK literature, particularly studies by Ismail et al. (2022), Reski & Sari (2020), and Akhwani & Rahayu (2021).

Regarding understanding student needs, G₁ adopted a proactive approach by establishing intensive communication through WhatsApp, reflecting the use of technology to support social interaction as emphasized in Vygotsky's (1978) theory. This aligns with Ismail et al.'s (2022) findings, which highlight the importance of pedagogical understanding in integrating technology to enhance students' learning experiences. Meanwhile, G₂ focused more on diagnostic assessment and creating classroom agreements to comprehend student needs, consistent with assessment-based learning (Joyce et al., 2009) and relevant to Akhwani and Rahayu's (2021) research on the role of TPACK in effective classroom management.

In the selection of teaching methods and techniques, G₁ leaned towards cognitive theory by emphasizing discussion and problem-solving, whereas G₂ applied a constructivist approach that stresses structured thinking patterns. These differences indicate that teachers' pedagogical understanding strongly influences learning effectiveness, as noted by Reski and Sari (2020), who found that the success of TPACK implementation among physics teachers in Merauke depended on their grasp of concept-based teaching methods and technology.

Furthermore, in developing an interactive and collaborative learning environment, G₁ used ice-breaking activities to create a dynamic learning atmosphere, while G₂ prioritized professional interpersonal communication. This demonstrates that both teachers applied sound pedagogical principles to foster student engagement, aligning with Akhwani and Rahayu's (2021) findings that elementary teachers with strong TPACK competencies can create more collaborative learning environments.

Regarding assessment, G₁ tended to conduct general evaluations at the end of lessons, while G₂ implemented post-tests before class ended, indicating the use of both formative and summative assessments. This suggests that a solid pedagogical understanding enables teachers to tailor assessment strategies to holistically evaluate student competencies, consistent with TPACK assessment concepts discussed by Ismail et al. (2022).

Lastly, in technology utilization, both teachers used WhatsApp as an additional communication medium but had not yet widely applied learning management systems (LMS) in teaching. This indicates room for further development in educational technology application, as suggested by Reski and Sari (2020), who emphasized the importance of more innovative technology integration in teaching processes.

Overall, the findings indicate that both teachers possess good pedagogical knowledge with average scores of 3.23 for G₁ and 2.98 for G₂. Differences in instructional approaches reflect variations in strategy implementation based on each teacher's experience and preferences. The implication of this study is the importance of flexibility in selecting teaching methods to accommodate diverse student needs. Additionally, professional development recommendations include enhancing comprehensive use of educational technology to support more adaptive and innovative teaching strategies, as discussed in related TPACK research.

c. Content Knowledge (CK) Analysis

Based on the research findings, the content knowledge (CK) of Pancasila Education teachers at a high school in Surakarta is considered fairly good, as evidenced by the CK scores obtained: 3.44 for Teacher 1 (G₁) and 3.30 for Teacher 2 (G₂). This indicates that the teachers possess a deep understanding of the "Internalizing Pancasila" material and are able to clearly convey the core concepts. This finding aligns with the literature emphasizing that CK is a teacher's profound knowledge of the subject matter they teach (Koehler & Mishra, as cited in Walidain et al., 2021). Previous studies, such as Ismail et al. (2022), highlight the importance of CK in Pancasila education, where an in-depth understanding of the material enables teachers to connect key concepts with students' real-life experiences. Additionally, Reski and Sari (2020) and Akhwani and Rahayu (2021) stress that strong CK allows teachers to establish connections between various topics, making learning more contextual.

In this study, it was observed that teachers sourced materials from diverse references, including journals, books, and recent phenomena from social media, demonstrating their efforts to make the content more relevant to students' daily lives. Observations and interviews showed that teachers had a good grasp of the subject matter and were able to link Pancasila concepts to relevant social phenomena, such as violations of Pancasila values found on social media. This is consistent with Shulman's (1987) assertion that deep CK enables teachers to relate theory to current issues. However, the quality of CK is also influenced by continuous experience and training, making it essential for teachers to update their teaching materials regularly, especially in response to frequent regulatory changes.

Furthermore, teachers have utilized appropriate learning resources, such as journals, books, and social media, to enrich students' understanding of the material. This aligns with Koehler and Mishra's (2009) view that teachers need to select learning sources suitable for the times to keep content relevant. Nonetheless, despite demonstrating a good understanding of the content, this study did not thoroughly

explain how teaching methods were adapted to students' needs and learning styles. Tailoring teaching methods to students' needs is a crucial aspect of CK, as explained by Koehler and Mishra (2009). Moreover, it is important for teachers to continually update and adapt curricula to remain relevant amid social dynamics and regulatory developments, as recommended by Wiggins and McTighe (2005). Given that regulations in Pancasila Education frequently change, teachers cannot rely solely on outdated textbooks but must stay informed about the latest developments.

Regarding evaluation, this study also did not extensively address the diversity of evaluation techniques used. Wiggins and McTighe (2005) emphasize that varied evaluation methods are important for assessing students' understanding more holistically. Therefore, teachers need to employ multiple forms of assessment, such as tests, discussions, observations, and student feedback, to ensure learning effectiveness.

Overall, this study shows that Pancasila Education teachers at a high school in Surakarta have good CK, with considerable efforts to prepare relevant teaching materials and connect learning to students' real-life contexts. However, some aspects require improvement, such as adapting teaching methods to students' learning styles and employing more diverse evaluation techniques. These improvements are crucial to optimize teaching to meet diverse student needs and to ensure deeper understanding of Pancasila values.

d. Technological Content Knowledge (TCK) Analysis

The results regarding the technological content knowledge (TCK) of Pancasila Education teachers at a high school in Surakarta indicate that the teachers possess good competence in utilizing technology as a learning aid. This finding aligns with Ismail et al. (2022), who emphasized the importance of TPACK understanding in Pancasila Education to enhance the effectiveness of content delivery. In this study, both teachers selected various relevant technologies, such as laptops, LCD projectors, PowerPoint (PPT), Canva, Quizizz, and the Moodle learning management system (LMS), supporting effective teaching. The appropriate technology selection is further supported by Mishra and Koehler's (2006) argument that technology should enrich the subject matter.

Additionally, the integration of technology by both teachers demonstrated their ability to leverage digital media, such as videos and LMS platforms, to make learning more engaging and provide opportunities for students to access materials independently. This corresponds with Reski and Sari (2020), who revealed that teachers with strong TPACK knowledge effectively integrate technology into teaching to enhance student understanding. However, although technology utilization is fairly good, this study found that the personalization aspect of learning needs improvement. Currently, the use of technology by both teachers remains general and is not fully tailored to the specific needs of each student. Hofer and Harris (2012) emphasize that personalized learning through technology can create a more adaptive experience according to students' learning pace and style. This finding is corroborated by

Akhwani and Rahayu (2021), who highlight that mastering TPACK components in the digital era must include adaptation to individual student needs.

Furthermore, both teachers have conducted evaluations and reflections on the effectiveness of technology use in teaching, particularly through student questionnaires. They also utilized online evaluation tools such as Quizizz to gather real-time feedback and adjust teaching methods more effectively. Anderson and Becker (2001) affirm that reflecting on technology's effectiveness in learning is crucial for improving teaching strategies. The use of various digital devices, including multimedia presentations and videos, also contributed to increased student engagement, supported by Hofer and Harris (2012).

In this study, the TCK scores for the two teachers were $G_1 = 2.94$ and $G_2 = 3.10$, indicating a good understanding of technology use in learning. However, there remains room for further development, particularly in personalizing learning and adapting to students' specific needs. In conclusion, Pancasila Education teachers at a high school in Surakarta have met most TCK indicators, including relevant technology selection, technology integration in teaching, and evaluating its effectiveness. To enhance future teaching effectiveness, ongoing training is needed in utilizing technology more adaptively and based on student needs analysis, as recommended by previous TPACK studies.

e. Analysis of Pedagogical Content Knowledge (PCK)

The results of the study on pedagogical content knowledge (PCK) of Pancasila Education teachers at a senior high school in Surakarta City indicate that the teachers have effectively integrated content and pedagogical knowledge in designing instruction. This aligns with the literature emphasizing the importance of PCK in meaningful teaching practices (Shulman, 1987; Kohler & Mishra, as cited in Walidain et al., 2021). The study found that both teachers (G_1 and G_2) were able to explain the material clearly and in depth, connecting the core concepts of Pancasila with their application in daily life. This is consistent with the findings of Ismail et al. (2022), who highlighted the significance of integrating pedagogy and content in Pancasila education to make learning more contextual and applicable. Furthermore, G_1 and G_2 's ability to accurately respond to students' questions through discussion and illustration demonstrated strong pedagogical understanding. Shulman (1987) stated that accurate explanations help minimize misconceptions. These findings are also supported by Reski and Sari (2020), who confirmed that teachers with solid TPACK competencies can adapt instructional strategies to students' needs.

Moreover, the use of diverse teaching methods, including project-based learning (PBL) and audiovisual media, indicates that the teachers possess flexibility in adjusting their approaches to students' characteristics. This corresponds with Akhwani and Rahayu (2021), who emphasized that varied teaching methods are part of professional teacher competencies in the 21st century. Nevertheless, classroom management challenges remain, particularly in aligning strategies with the activity levels and needs of all students. Regarding technology use, both teachers utilized digital media in instruction, which aligns with the concept of technological

pedagogical content knowledge (TPACK) proposed by Mishra and Koehler (2006). Ismail et al. (2022) also confirmed that integrating technology in Pancasila education enhances teaching effectiveness and student engagement. Additionally, the informal assessments through discussions and projects provided feedback on students' understanding, consistent with Wiggins and McTighe's (2005) view that assessments should not only measure learning outcomes but also help improve comprehension.

Overall, this study shows that Pancasila Education teachers at a senior high school in Surakarta have a good understanding of integrating pedagogical and content aspects in teaching, as indicated by the PCK scores of $G_1 = 3.20$ and $G_2 = 3.17$. However, challenges such as time management and the diversity of student characteristics remain obstacles that need attention to further improve teaching quality. These findings support previous research emphasizing the importance of mastering TPACK in education, especially in adapting methods, technology, and assessments to create effective and meaningful learning experiences for students.

f. Analysis of Technological Pedagogical Knowledge (TPK)

Studies by Ismail et al. (2022), Reski and Sari (2020), and Akhwani and Rahayu (2021) on the needs and competencies of TPACK in learning reveal that understanding and applying technology in teaching is crucial for teachers facing 21st-century educational challenges. This study aligns with those findings, showing that teachers at a high school in Surakarta have strong abilities in designing and selecting technology-based learning models, as reflected by the relatively high TPK scores ($G_1 = 3.11$ and $G_2 = 3.13$). This indicates that both teachers possess a solid understanding of technology use to support instruction, consistent with Koehler and Mishra's (2009) TPACK framework.

Regarding technology comprehension and operation, this study shows that G_1 and G_2 can competently operate technology relevant to the subject matter. This corresponds with Akhwani and Rahayu's (2021) emphasis on the importance of technological competence for teachers to facilitate effective learning. G_1 used technology to simplify students' understanding and reduce boredom, while G_2 utilized the Edpuzzle application to increase interactivity in practice exercises through gamification. This demonstrates that both teachers meet the indicators proposed by Koehler et al. (2013) regarding effective technology use in content delivery.

Furthermore, the integration of technology into instructional methods has been effectively implemented by both teachers, who can select and apply technology according to student needs and curriculum requirements. G_1 used technology to maintain students' focus and clarify concepts, while G_2 used it to enhance student engagement through more appealing methods. This approach aligns with Ismail et al. (2022), who highlighted the importance of technology integration in pedagogy to support curriculum and student needs.

Additionally, the study reveals that technology use not only serves as an instructional aid but also facilitates more interactive learning. For example, G_2 's use of Edpuzzle allows students to interact directly with learning materials through gamification, supporting Ertmer and Ottenbreit-Leftwich's (2010) theory on the

importance of active student engagement. This is also supported by Reski and Sari (2020), who found that teachers with strong TPACK understanding tend to better utilize technology to increase student participation.

In terms of technology-based assessment strategies, the use of applications like Edpuzzle can be considered a form of digital assessment providing real-time feedback to students. Anderson and Becker (2001) emphasized that technology-based assessment strategies help teachers measure student learning outcomes more effectively. However, despite the good competencies demonstrated, there remains room for further development, particularly in using various collaborative platforms to support project-based learning (PBL). This aligns with Ismail et al. (2022), who stress the need for continuous enhancement of teachers' technological skills to keep up with rapid technological advancements.

In conclusion, this study shows that Pancasila Education teachers at a senior high school in Surakarta have a very good understanding and application of TPK, with effective technology use to enhance teaching and student engagement. Nevertheless, consistent technological competency development and adoption of more varied teaching methods remain necessary to create increasingly dynamic and interactive learning experiences.

2. Challenges in Implementing Technological Pedagogical Content Knowledge (TPACK)

Based on interviews conducted, several challenges were identified that Pancasila Education teachers at a senior high school in Surakarta face in implementing TPACK. These challenges are related to the core aspects of the TPACK framework: technology, pedagogy, and content. The difficulties encountered by Teacher 1 (G_1) in integrating technology into Pancasila Education reflect pedagogical and technological challenges within the TPACK framework. The main issue faced by G_1 was managing and maintaining students' focus when using technological devices such as smartphones, laptops, and tablets during learning activities. In addition, G_1 struggled to find phenomena or facts that were both easily understood by students and relevant to the subject matter of Pancasila Education.

Aware of these difficulties, G_1 developed strategies to manage technology use in the classroom to minimize distractions, such as storing unnecessary devices and collecting smartphones in accordance with school policy. This reflects the need for effective classroom technology management to support learning without becoming a distraction, as emphasized by Akhwani and Rahayu (2021), who highlighted the challenges teachers face in optimizing the use of technology. Moreover, G_1 's use of social media and current news as sources of information demonstrates an effort to connect learning with students' real-life experiences, making it more contextual and engaging. This is in line with Reski and Sari (2020), who found that teachers' understanding of content and technology aspects within TPACK can enhance instructional effectiveness. Furthermore, G_1 's participation in workshops and seminars reflects a commitment to continually improving pedagogical competence, as

recommended by Ismail et al. (2022), who emphasized the importance of ongoing professional development in implementing TPACK.

Meanwhile, the challenges experienced by Teacher 2 (G_2) were more focused on the technological aspect of TPACK. G_2 reported difficulty in keeping up with the rapid development of technology, which led to challenges in adapting teaching methods to both student characteristics and current technological tools. Limited mastery of applications or software was a major obstacle for many teachers, including G_2 . This lack of technological proficiency caused G_2 to rely solely on familiar applications, even though other tools might have been more effective.

Recognizing the importance of digital competence, G_2 made efforts to improve through both internal and external seminars and training programs. This aligns with the findings of Akhwani and Rahayu (2021), who stressed that teacher training is a crucial step toward enhancing their ability to integrate technology into instruction. In addition, G_2 's collaborative strategy with fellow teachers who were more technologically adept reflects an approach recommended by Reski and Sari (2020), who noted that peer interaction and experience sharing can help teachers develop a better understanding of the technological components of instruction. This approach is also consistent with the findings of Ismail et al. (2022), who emphasized that strengthening TPACK competence requires support and collaboration among teachers within professional communities. Through continuous learning and adaptation, G_2 demonstrated a strong commitment to enhancing the effective integration of technology into teaching, thereby providing students with more engaging and relevant learning experiences.

The challenges faced by both G_1 and G_2 suggest that the successful implementation of technology in Pancasila Education is not solely dependent on teachers' technical skills in operating technological tools, but also on the pedagogical strategies employed to ensure that technology contributes to improved instructional effectiveness.

D. CONCLUSION

Based on the results of the research, the analysis of Technological Pedagogical Content Knowledge (TPACK) among Pancasila Education teachers at a senior high school in Surakarta indicates that the teachers possess a solid understanding of how to integrate technology, pedagogy, and content in the learning process. The teachers are capable of utilizing various technological tools and flexible teaching methods, although they still face challenges such as student distractions and the rapid development of technology. The main difficulties in implementing TPACK include managing the use of technology in the classroom, limited access to relevant teaching materials, and difficulties in adapting to technological advancements. Some teachers have limited proficiency in using new applications and tend to rely on familiar technologies. To address these challenges, teachers employ several strategies, such as managing device usage in the classroom, utilizing social media and current news as learning resources, and participating in training programs and seminars.

Collaboration with fellow teachers also serves as an effective strategy for enhancing technological competence. Overall, the teachers' TPACK competence is relatively good; however, continuous professional development and reinforcement of digital-based teaching strategies are still needed to ensure greater adaptability to student needs and technological developments.

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