TEACHER'S TPACK TOWARD STUDENT'S READING ABILITY

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Abstract

This study aims to examine the influence of teachers' Technological Pedagogical and Content Knowledge (TPACK) on students' reading ability. TPACK is a knowledge framework that integrates technology, pedagogy, and subject matter content that is considered capable of improving the quality of learning, including in the development of students' reading ability. This study employs a library research design to explore the influence of teachers' Technological Pedagogical and Content Knowledge (TPACK) on students' reading ability by reviewing and synthesizing findings from previous studies. The literature review reveals that teachers with strong TPACK can effectively integrate technology into reading instruction, resulting in improved comprehension, vocabulary development, and engagement. Several empirical studies indicate that the integration of digital tools through pedagogical strategies enhances students' critical reading and motivation. Therefore, this paper concludes that strengthening teachers' TPACK through continuous professional development is essential for promoting students' reading ability in technologically rich learning environments. The implications of this study emphasize the importance of TPACK training for teachers to strengthen the quality of reading learning in the digital era.

Keywords: TPACK, reading ability, educational technology, reading instruction, teacher effectiveness.

INTRODUCTION

The rapid advancement of technology has profoundly impacted language education, encouraging teachers to integrate digital tools into their instructional practices. One of the most relevant frameworks in this context is Technological Pedagogical Content Knowledge (TPACK), which represents the intersection of teachers' understanding of technology, pedagogy, and content knowledge. According to Mishra and Koehler (2006), TPACK enables teachers to design learning experiences that effectively integrate technology to support students' understanding. This framework emphasizes that effective technology integration is not merely about using digital tools but about understanding how technology can transform teaching strategies and enhance content delivery. In the context of language education, TPACK helps teachers select appropriate digital resources—such as online reading platforms, interactive vocabulary applications, or multimedia texts—that align with pedagogical goals and language learning objectives. Moreover, by developing TPACK, teachers become more adaptive and innovative in addressing diverse learners' needs and promoting higher levels of engagement and reading comprehension in technologically enriched classrooms (Koehler et al., 2013; Chai et al., 2019).

In reading instruction, teachers play a vital role in helping students develop the ability to comprehend, analyze, and interpret texts. Nuttall (2005) defines reading as a complex cognitive process involving decoding, background knowledge, and inference-making. Enhancing students' reading ability requires not only effective pedagogy but also strategic integration of technological

tools that can facilitate engagement and comprehension. Recent studies (e.g., Mishra & Koehler, 2006; Koehler et al., 2014) have highlighted the impact of teachers' technological competence on students' literacy outcomes. In this context, teachers who possess strong Technological Pedagogical and Content Knowledge (TPACK) are better equipped to design learning activities that combine technology, pedagogy, and content in meaningful ways. Such integration enables teachers to provide diverse reading materials, interactive digital platforms, and adaptive feedback that accommodate students' varying proficiency levels and learning preferences. Consequently, the teacher's ability to merge pedagogical strategies with technological innovations not only enhances reading comprehension but also promotes critical thinking, motivation, and independent learning among students.

In the Indonesian context, English reading ability remains one of the key indicators of students' language proficiency. Reading in a foreign language, particularly English, is often challenging for Indonesian students due to limited vocabulary, lack of exposure to authentic texts, and insufficient reading strategies. Integrating technology effectively through the TPACK framework may improve reading fluency, vocabulary acquisition, and critical thinking by enabling teachers to design more engaging, interactive, and student-centered learning environments. Through the use of digital tools and pedagogical strategies aligned with content knowledge, teachers can facilitate activities such as online reading comprehension exercises, interactive vocabulary games, and digital discussions that enhance students' understanding of texts. Therefore, this research examines how teachers' TPACK influences students' reading ability in English language classrooms, highlighting the importance of teachers' technological, pedagogical, and content integration in fostering students' literacy development and overall language proficiency.

METHOD(S)

Through this approach, the researcher was able to identify recurring themes, methodological patterns, and gaps within the existing body of knowledge regarding the role of TPACK in enhancing students' reading performance. The analysis also enabled the comparison of diverse research contexts, allowing a more comprehensive understanding of how technological, pedagogical, and content integration is implemented across different educational settings. By synthesizing these findings, the study provides a clearer theoretical foundation and highlights directions for future research aimed at strengthening teachers' technological competencies to support effective reading instruction

Through this focused selection process, the reviewed literature provides a clearer understanding of how technological, pedagogical, and content knowledge intersect to influence reading instruction in contemporary classrooms. By synthesizing studies that meet these criteria, researchers can more accurately determine how teachers' technological readiness shapes their instructional decisions and how these decisions ultimately affect students' reading development. This approach also highlights areas where empirical evidence remains limited, thereby guiding future research to explore unresolved issues and strengthen the theoretical foundation of TPACK in reading education.

The data from the reviewed sources were analysed qualitatively through content analysis, following the procedures suggested by Bowen (2009), which include organizing, coding, and interpreting textual information from secondary sources. Thematic synthesis was employed to identify recurring concepts, theoretical perspectives, and pedagogical implications that connect teachers' TPACK with students' reading ability. By adopting this qualitative synthesis approach, the study aims to provide a comprehensive understanding of how TPACK-based teaching influences reading performance, drawing on multiple perspectives and empirical evidence from prior research.

RESULTS AND DISCUSSION

The synthesis of previous studies indicates that teachers' TPACK plays a significant role in enhancing students' reading comprehension and engagement. Mishra and Koehler (2006) conceptualized TPACK as the integration of technological, pedagogical, and content knowledge that enables teachers to use digital tools effectively in teaching. They argue that effective technology use depends not only on technical skill but also on teachers' ability to align technological tools with pedagogical strategies and content objectives. Their framework has since become a foundational model for technology integration in education, guiding teachers to design lessons that foster deeper learning outcomes.

Furthermore, recent research underscores that TPACK is not a static body of knowledge but a dynamic competency that evolves as new technologies and instructional methodologies emerge. Teachers who master TPACK are able to critically evaluate which digital tools genuinely support the development of reading comprehension rather than using technology merely for its novelty. For example, they can distinguish between tools that simply display text and those that provide scaffolding features—such as annotation functions, embedded glossaries, or multimodal supports—that help students decode complex passages and build deeper understanding. This capacity to make informed choices allows teachers to craft learning experiences where technology strengthens, rather than distracts from, pedagogical intentions.

In addition, the TPACK framework emphasizes the interaction among the three domains rather than treating them as separate competencies. This means that a teacher with strong content knowledge but weak pedagogical or technological understanding may struggle to design effective digital reading lessons. Conversely, a teacher who possesses balanced and integrated TPACK is better equipped to structure reading activities that promote higher-order thinking, such as inferencing, interpreting author stance, and synthesizing information from multimodal texts. By merging these domains cohesively, teachers can enhance both the cognitive and affective dimensions of reading, making students not only more proficient readers but also more motivated and confident learners.

Koehler et al. (2014) further strengthened this argument by emphasizing that teachers who demonstrate a high level of TPACK can create interactive, student-centered, and contextually relevant learning environments. Their study revealed that such teachers often integrate technology to facilitate collaborative reading activities, digital annotation, and online comprehension tasks, which lead to increased student motivation and reading engagement. These findings underscore that pedagogical creativity, when supported by technological fluency, enhances both cognitive and affective aspects of reading instruction.

Similarly, Chai et al. (2019) reported that technology-enhanced reading activities contribute significantly to vocabulary growth and reading motivation. Their review of multiple classroom-based studies found that students who participated in digital reading environments—such as e-book discussions, multimedia texts, and interactive vocabulary games—showed measurable improvements in comprehension and retention. The multimodal features of digital tools (e.g., text, audio, and visual support) help scaffold learners' understanding, especially for those with lower English proficiency.

Richards and Renandya (2002) also highlighted that pedagogical adaptation, supported by appropriate technological tools, fosters deeper textual understanding and learner autonomy. They suggested that teachers who employ interactive digital resources—such as online reading journals, group forums, and electronic glossaries—encourage learners to take more responsibility for their own reading progress. This aligns with the principle of learner-centered instruction, where students engage more actively in meaning-making processes.

Furthermore, these digital tools allow students to interact with reading materials in ways that are more flexible and personalized compared to traditional paper-based texts. For example, online reading journals provide spaces where learners can reflect on their comprehension, pose

questions, and make connections to prior knowledge at their own pace. Group forums offer opportunities for peer-to-peer dialogue, enabling students to negotiate meaning collaboratively and explore multiple interpretations of a text. Electronic glossaries and built-in dictionary features help students access word meanings instantly, which reduces cognitive load and encourages them to tackle more complex texts without losing momentum.

Richards and Renandya's perspective also implies that when students are given greater control over their reading activities, they develop stronger metacognitive awareness, such as monitoring comprehension, selecting appropriate reading strategies, and identifying areas where they need additional practice. Technology supports this autonomy by providing immediate feedback, adaptive tasks, and multimodal input that caters to different learning preferences. As a result, students become more independent, strategic, and confident readers—qualities that are essential for mastering academic texts and engaging fully in literacy-rich environments.

In the Indonesian context, Mahdum (2019) found that the application of TPACK in English reading classes helped teachers design activities that addressed students' difficulties in vocabulary and comprehension. His study revealed that digital resources such as interactive quizzes, reading comprehension platforms, and video-based storytelling helped increase student motivation and participation. Similarly, Novitri (2022) reported that integrating online reading materials and discussion forums provided students with authentic language exposure and improved their ability to interpret texts critically. These findings collectively show that teachers who integrate technology through the TPACK framework can transform reading instruction into a more engaging, interactive, and effective learning experience.

CONCLUSION

Based on the synthesis of prior research, it can be concluded that teachers' TPACK substantially contributes to the improvement of students' reading ability. The integration of technology with pedagogical and content knowledge fosters more effective and engaging reading instruction. Therefore, teacher education programs should emphasize TPACK-oriented training to prepare teachers for digital-age literacy instruction.

In addition, a strong mastery of TPACK enables teachers to design learning experiences that accommodate diverse student needs, promote higher-order thinking, and facilitate independent reading practice through digital platforms. When teachers can strategically align technological tools with appropriate pedagogical approaches and relevant reading materials, students are more likely to develop deeper comprehension skills and sustained reading motivation. This alignment not only enhances instructional quality but also supports students in navigating various multimodal texts that characterize modern literacy demands.

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To further enrich the discussion, it is important to elaborate on how the TPACK framework continues to evolve alongside technological developments. As classrooms increasingly shift toward blended and fully digital learning models, teachers must constantly update their technological proficiency. Modern digital reading tools now include AI-based platforms that offer automated feedback, adaptive difficulty levels, and real-time assessment of reading comprehension. These innovations provide new opportunities for teachers to personalize instruction, track student

progress more effectively, and design learning tasks that respond to individual needs. However, such advancements also require teachers to deepen their understanding of how technological features align with pedagogical intentions.

Another important aspect concerns the challenges teachers face in operationalizing TPACK. Many studies indicate that although teachers may possess basic technological skills, they often struggle to integrate these skills meaningfully into reading instruction. This issue is linked to limited training opportunities, lack of technological infrastructure, and insufficient institutional support. Therefore, effective professional development programs must go beyond technical training and focus on helping teachers internalize the pedagogical rationale behind technology use. Workshops that emphasize collaborative problem-solving, modeling of technology-rich reading lessons, and hands-on experimentation can significantly strengthen teachers' confidence and foster reflective practice.

Moreover, the relationship between TPACK and students' reading motivation deserves deeper exploration. Motivation is a key determinant of reading achievement, and technology has the potential to create more engaging literacy environments. Gamification features, multimedia texts, digital storytelling platforms, and interactive annotation tools can transform reading into a more dynamic and enjoyable experience. When students perceive reading tasks as meaningful and relevant, they are more likely to invest effort, persist through challenges, and develop stronger comprehension skills. Teachers who understand how to balance technological novelty with pedagogical purpose are better positioned to cultivate motivation that leads to long-term reading improvement.

Future research should also consider how TPACK interacts with socio-cultural factors in diverse educational settings. In Indonesia, for example, disparities in access to technology, variations in school resources, and differing levels of digital literacy among students pose unique challenges. Researchers need to examine how contextual variables—such as school culture, parental involvement, and policy support—shape the implementation of TPACK-based reading instruction. Additionally, classroom observations and longitudinal studies would provide more detailed insights into how teachers adapt their technological and pedagogical practices over time.

Overall, strengthening the theoretical and practical understanding of TPACK in reading education requires ongoing research, sustained professional development, and a commitment to creating equitable learning environments that support students' literacy growth.

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