



## INVESTIGATING ENGLISH LANGUAGE TEACHERS' TPACK COMPETENCIES ON THE STUDENTS' WRITING SKILL

**Rahma Ayuditya Putri**

Prima Bangsa Institute  
[ayudityarahma05@gmail.com](mailto:ayudityarahma05@gmail.com)

**Virga Putra Darma**

Prima Bangsa Institute  
[virgaputradarma@gmail.com](mailto:virgaputradarma@gmail.com)

**Utami Rosalina**

Prima Bangsa Institute  
[utami.stiba@gmail.com](mailto:utami.stiba@gmail.com)

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### Abstract:

This study investigates senior high school English teachers' Technological Pedagogical Content Knowledge (TPACK) in teaching writing and its influence on students' writing skills. A qualitative case study was conducted involving two English teachers and two eleventh-grade classes in an Indonesian senior high school. Data were collected through classroom observations, semi-structured interviews, and analysis of students' written work. The findings show that, despite lacking formal TPACK training, teachers were able to integrate technology, pedagogy, and content knowledge in their instruction. Digital tools such as PowerPoint, Quizizz, Kahoot, and Wordwall were used to support learning activities and enhance student engagement. This integration contributed to improvements in students' grammar, vocabulary, and text organization, as well as increased participation. The study concludes that TPACK can develop through teaching experience, although its effectiveness may be enhanced through professional training and adequate technological support.

**Keywords:** TPACK, English Teachers, Writing Skills, Technology Integration, Language Learning

## INTRODUCTION

This study attempts to investigate how English language teachers' Technological Pedagogical Content Knowledge (TPACK) competencies influence students' writing skills. Writing is one of the four essential skills in English language learning, along with listening, speaking, and reading, and is considered one of the most challenging to master. In both academic and professional settings, effective writing skills are crucial for communicating ideas, expressing arguments, and demonstrating understanding. As Yoon, cited in Song & Song (2023), explains, competent writing enables individuals to convey their thoughts clearly and achieve success across disciplines. Similarly, Mourtaga, cited in Fathia Baresh (2022), highlights the importance of writing as a vital language skill in education, where it plays a central role in communication and assessment.

In the school context, writing is used not only for examinations but also for producing essays, reports, and presentations, where students must articulate their knowledge effectively. Strong writing ability contributes to academic achievement by allowing students to engage meaningfully in coursework and demonstrate mastery of content. Beyond education, writing remains essential in the workplace, where professional communication such as emails, reports, and proposals shapes organizational credibility and efficiency (Sari & Putri, 2023). Thi et al. (2021) further emphasize the importance of strengthening writing, along with other language skills, through varied approaches in order to meet the demands of modern communication.

Teaching writing, however, requires teachers to possess not only subject expertise but also pedagogical knowledge and the ability to integrate technology effectively. The TPACK framework offers a lens to understand how these three domains which are content, pedagogy, and technology, intersect in classroom practice. Originally based on Shulman's (1986) concept of Pedagogical Content Knowledge, the model was extended by Mishra & Koehler (2006) to include technology. TPACK asserts that effective teaching with technology requires knowledge not only of subject matter (content knowledge), teaching strategies (pedagogical knowledge), and digital tools (technological knowledge), but also of how these areas interact dynamically. Teachers with strong TPACK competencies are able to design learning experiences that integrate technology meaningfully into subject instruction, in ways that improve student engagement and learning outcomes (Taopan, 2020).

Several studies have explored the role of TPACK in language education. Yapıcı & Mirici (2023) investigated Turkish in-service instructors' use of TPACK in English teaching, showing that teachers generally apply their skills at a sufficient level but that demographic factors had little influence on technology integration. Indah Mutiarasari & Kristina (2023) examined Indonesian learners' perceptions of mobile applications in creative writing, finding that apps provided valuable support for learning and error analysis, while also recommending stronger teacher involvement in guiding students' use of technology. Tütüniş et al. (2022) focused on teacher training for writing and grammar skills within the TPACK framework, concluding that targeted professional development improved teachers' ability to integrate digital tools effectively. Septiyanti et al. (2020) studied English education students' perceptions of TPACK in Lampung, showing that most students developed their knowledge by observing lecturers and engaging in self-learning, with lecturers playing key roles in modeling and facilitating TPACK practices. Finally, Joseph et al. (2022) assessed the impact of the TPACK teaching model on elementary students' reading and writing, reporting that learners taught through TPACK significantly outperformed those taught with traditional lecture methods.

Although these studies provide important insights, gaps remain in the literature. Most research has been conducted in higher education contexts or teacher training programs, with limited attention to senior high schools. Many studies emphasize general language skills or focus on speaking and reading, while relatively few concentrate specifically on writing. In addition, much of the existing work relies on quantitative approaches such as surveys or experimental designs, offering less understanding of teachers' real-life experiences and strategies in classrooms. There is also a need for research in the Indonesian high school context, where the integration of technology into language teaching is often challenged by infrastructural, pedagogical, and contextual factors.

The novelty of the present study lies in its focus on high school English teachers' lived experiences of implementing TPACK in writing instruction and examining how their competencies shape students' writing development. Unlike research that emphasizes specific technological tools, this study considers TPACK integration more broadly, looking at the ways teachers draw on their knowledge across domains to support student learning. By employing qualitative methods such as classroom observations and interviews, the research provides deeper insights into the dynamic processes of teaching and learning that cannot be fully captured by quantitative measures.

The study therefore aims to elaborate teachers' perceptions of TPACK-based English language instruction, especially in writing, and to investigate how its implementation shapes students' writing abilities. The findings are expected to contribute theoretically by expanding the understanding of TPACK in secondary education and practically by offering strategies that teachers can apply to enhance writing instruction through effective integration of technology, pedagogy, and content knowledge.

## **METHODOLOGY**

A qualitative case study approach was applied, drawing on Creswell & David Creswell (2018) framework for qualitative inquiry, which emphasizes the exploration of educational practices within their natural context through non-numerical data. This design was chosen to allow an in-depth investigation of how English language teachers' TPACK competencies influenced students' writing skills in a senior high school setting. A qualitative orientation was considered most appropriate because the focus was on understanding lived experiences and teaching processes rather than measuring variables numerically.

Participants were selected through purposive sampling to ensure they met criteria directly relevant to the research focus. Two English teachers of two different classes were chosen based on their active use of technology in writing instruction. This sampling strategy provided access to individuals capable of offering rich insights into how technological, pedagogical, and content knowledge intersect in English language learning.

Data collection combined three techniques: classroom observations, semi-structured interviews, and document analysis. Observations were carried out during writing lessons to record the ways teachers integrated technology, pedagogy, and content knowledge in practice. An observation checklist guided the process to capture systematic evidence on the use of digital tools, scaffolding strategies, feedback, and student participation, while field notes were used to document contextual details. Semi-structured interviews with teachers and students explored perceptions of TPACK-based instruction. Teachers were asked about their understanding of the framework, their strategies for applying it, challenges encountered, and reflections on its effectiveness, while students shared their experiences of technology-enhanced writing lessons and the perceived

influence on their skills. Document analysis further enriched the data by examining samples of student assignments and grade records, providing concrete evidence of student performance and linking classroom practices to measurable outcomes.

The analysis process followed Creswell & David Creswell (2018) stages. Data from interviews, observations, and documents were first organized and prepared for review. This was followed by coding, which allowed the identification of recurring ideas and patterns. The codes were then grouped into broader themes, such as effective technology integration in writing instruction, barriers to TPACK application, and evidence of improvement in student writing. These themes were interpreted in relation to the research focus and broader discussions of technology-supported language teaching. To ensure credibility, triangulation was achieved by comparing findings across the three sources of data, while member checking was conducted by sharing transcripts and summaries with participants to verify the accuracy of interpretations. The final stage involved presenting results in narrative form, supported by quotations, observation notes, and examples from student work.

The overall methodological design combined purposive sampling, multiple forms of data collection, and systematic analysis to strengthen the trustworthiness of findings. Observations revealed how TPACK was enacted in classroom practice, interviews provided reflective insights from teachers and students, and document analysis offered tangible evidence of student achievement. Together, these complementary sources provided a comprehensive understanding of how teachers' TPACK competencies shaped writing instruction and contributed to the development of students' skills.

## **FINDINGS**

This study examined English teachers' TPACK competencies and their impact on students' writing skills in a senior high school setting. Data from interviews, classroom observations, and document analysis revealed three main findings: teachers' perceptions of TPACK, the implementation of TPACK in writing instruction, and students' writing outcomes after TPACK-based instruction.

### **Teachers' perceptions of TPACK in writing instruction**

The teachers in this study demonstrated generally positive perceptions of integrating technology into English writing instruction. Although they had not received formal training in the TPACK framework, they intuitively applied its principles by blending content knowledge, pedagogical strategies, and technological tools. They viewed technology as a means to enrich learning, make lessons more engaging, and provide access to updated resources. For instance, they used PowerPoint for content delivery, Google Docs for collaborative writing, and applications such as Kahoot!, Quizizz, and Wordwall to reinforce grammar and vocabulary. Teachers also emphasized that technology allowed them to provide timely feedback and foster student participation. Their ability to align technological tools with instructional goals indicated an emerging mastery of TPACK subdomains such as Technological Pedagogical Knowledge (TPK) and Technological Content Knowledge (TCK). This reflects the dynamic and experience-driven nature of TPACK as outlined by Mishra & Koehler (2006).

### **Implementation of TPACK in writing classes**

Classroom observations showed that teachers integrated TPACK principles into their lesson planning and delivery. Digital platforms were used not only to transmit information but also to create interactive, student-centered environments. Tools like Quizizz and Wordwall were

employed to strengthen students’ vocabulary and grammar before moving into writing activities, while PowerPoint guided the structure of writing lessons across different genres. Teachers also encouraged collaborative tasks through Google Docs, where students could draft, edit, and revise their texts collectively. The use of grammar-checking tools such as Grammarly further supported accuracy and coherence. These strategies helped establish a process-oriented approach to writing, where students engaged in brainstorming, drafting, revising, and editing with the aid of technology. However, challenges included limited digital literacy among some students and unequal access to devices, which sometimes hindered participation. The following table is the summary of TPACK-based writing instruction observations

**Table 1: Summary of TPACK-Based Writing Instruction Observations**

| Aspect                      | Teacher A                                                       | Teacher B                               | Student Engagement                                                         |
|-----------------------------|-----------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------------------------|
| Use of digital tools        | Frequent and varied                                             | Moderate, focused on slides and quizzes | Active engagement with tools in Teacher A’s class, moderate in Teacher B’s |
| Pedagogical strategies      | Strong use of scaffolding and modeling                          | Moderate emphasis on direct instruction | Students followed structured steps with varying independence               |
| Feedback (digital & verbal) | Provided instant feedback using digital tools and oral comments | Relied mainly on verbal feedback        | Students revised drafts based on both digital and teacher input            |
| Student collaboration       | Encouraged via online docs and peer review                      | Limited to pair work                    | Higher collaboration in Teacher A’s class, less in Teacher B’s             |
| Challenges observed         | Device limitations                                              | Internet instability                    | Unequal digital literacy and uneven participation                          |

Source: Classroom observation notes, 2025.

Students’ writing outcomes

Document analysis revealed notable improvements in students’ writing performance following the implementation of TPACK-based instruction. Students’ essays showed better mastery of grammar, richer vocabulary use, and more coherent text organization compared to earlier work. Technology-enhanced activities boosted engagement, with students reporting increased confidence and motivation to write. Interactive tools also supported metacognitive development, as students became more aware of their mistakes and revised their work accordingly. Despite these gains, progress was uneven across learners due to varying familiarity with digital tools. Nonetheless, the integration of technology, pedagogy, and content knowledge created a more effective learning environment that encouraged active participation and meaningful improvement in writing skills. The following table is the comparison of students’ writing outcomes before and after TPACK-based instruction

**Table 2: Comparison of Students’ Writing Outcomes Before and After TPACK-Based Instruction**

| Writing Aspect | Before TPACK Integration | After TPACK Integration |
|----------------|--------------------------|-------------------------|
|----------------|--------------------------|-------------------------|

|                            |                                                 |                                                                       |
|----------------------------|-------------------------------------------------|-----------------------------------------------------------------------|
| Grammar accuracy           | Frequent grammatical errors, limited revision   | Improved accuracy with support from grammar apps and teacher feedback |
| Vocabulary use             | Limited range, repetitive word choice           | Richer vocabulary, more precise word selection                        |
| Organization and coherence | Weak structure, unclear sequencing of ideas     | More coherent essays with better logical flow                         |
| Student engagement         | Low motivation, hesitant participation          | Higher motivation and active participation in activities              |
| Revision practices         | Minimal editing, reliance on teacher correction | Active revision with peer feedback and digital tools                  |

**Source:** Document analysis and classroom observation notes, 2025.

In conclusion, the findings indicate that teachers, even without formal TPACK training, were able to apply its principles in intuitive and practical ways. Their practices positively influenced student learning by fostering engagement, scaffolding writing processes, and improving linguistic accuracy. While challenges such as digital access and limited training remain, the results underscore the potential of TPACK-based instruction to enhance writing skills in secondary education.

## DISCUSSION

The findings of this study reveal that English teachers held positive perceptions of implementing the Technological Pedagogical Content Knowledge (TPACK) framework in writing instruction. Despite the absence of formal training, teachers demonstrated an intuitive ability to integrate technological tools, pedagogical strategies, and content knowledge to enhance learning. PowerPoint was used to structure lessons, while tools such as Kahoot!, Quizizz, Wordwall, and Grammarly were applied to reinforce vocabulary, grammar, and student engagement. These practices reflect the dynamic interplay of technological, pedagogical, and content knowledge described by Koehler & Mishra (2009), who emphasize that TPACK is not static but evolves through classroom practice.

The study shows that teachers effectively combined Technological Knowledge (TK), Pedagogical Knowledge (PK), and Content Knowledge (CK) by aligning tools with instructional goals. This mirrors findings by Yapıcı & Mirici (2023), who noted that Turkish EFL teachers applied TPACK principles intuitively in classroom contexts. Similarly, Wilda Toding et al. (2024) observed that Indonesian teachers incorporated digital tools regularly without formal exposure to TPACK terminology. These results highlight that classroom experience can foster strong TPACK competencies, though structured professional development would strengthen reflective practice and ensure sustainable integration (Tütüniş et al., 2022).

With regard to student outcomes, the integration of TPACK had a clear impact on writing skills. Students improved in grammar, vocabulary, and organization, and became more motivated to participate in writing activities. Gamified tools such as Quizizz and Wordwall were particularly effective in stimulating engagement and reinforcing linguistic input. This is consistent with Ibad et al. (2023), who found Quizizz produced the highest student performance in reading tasks, with Kahoot! and Wordwall enhancing concept retention and motivation. Although their focus was reading, the implications transfer to writing, where language input is critical for text production. Likewise, España-Delgado (2023) demonstrated that gamified platforms increased both

achievement and motivation, especially among previously disengaged students. The study also aligns with Joseph et al. (2022), who reported that students taught with TPACK-based strategies outperformed peers in both reading and writing. These findings underscore that effective TPACK implementation can create student-centered environments where learners construct knowledge actively and develop metacognitive awareness.

However, limitations were observed. Teachers lacked systematic mechanisms to evaluate the broader pedagogical impact of technology use, and constraints such as limited digital literacy and unequal device access hindered full participation. These challenges suggest the need for professional training and institutional support to move from intuitive to strategic integration.

In summary, this study affirms that TPACK has significant potential to enhance writing instruction at the high school level. Teachers displayed creative uses of technology that positively shaped student learning, and students responded with improved performance and engagement. Building on Mishra and Koehler's framework, and supported by recent empirical evidence, the results highlight the importance of structured teacher training, collaborative professional learning, and curriculum flexibility to maximize the transformative potential of TPACK in English language education.

## CONCLUSION

This study examined how English teachers implemented Technological Pedagogical Content Knowledge (TPACK) in writing instruction and how this implementation influenced students' writing skills in a senior high school context. The findings demonstrate that teachers were able to integrate technology, pedagogy, and content knowledge in meaningful ways, even without formal training in the TPACK framework. Their practices reflect an experiential understanding of how digital tools can support the writing process and enhance classroom interaction.

The study also shows that the implementation of TPACK contributed to improvements in students' writing performance, particularly in terms of grammar, vocabulary, and organization. In addition, the integration of technology increased students' motivation and engagement, making writing activities more interactive and accessible. However, the extent of these improvements varied depending on how effectively teachers integrated technological tools into their pedagogical practices. Despite these positive findings, the study is limited by its small sample size and its focus on a single school context, which may restrict the generalizability of the results. Furthermore, challenges related to digital access and varying levels of student readiness indicate that successful TPACK implementation requires adequate support and resources.

Future research is recommended to involve a larger number of participants and to explore the long-term impact of TPACK on students' writing development. It is also important to investigate how structured teacher training programs can enhance TPACK competencies and lead to more consistent and effective integration of technology in language instruction.

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