# TEACHERS' TPACK IN TECHNOLOGY-ENHANCED WRITING INSTRUCTION: EVIDENCE FROM EFL CLASSROOMS USING GRAMMARLY

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## ABSTRACT

The integration of digital technology into English as a Foreign Language instruction has become a crucial requirement in the Indonesian educational context. One technological tool that has recently gained prominence is Grammarly, an automated writing evaluation application that provides real-time feedback. However, the effectiveness of Grammarly in writing instruction largely depends on teachers' Technological Pedagogical Content Knowledge (TPACK). This study aims to investigate how Indonesian EFL teachers demonstrate their TPACK of Grammarly in the writing course. Employing a qualitative case study design, data were collected through classroom observations, semi-structured interviews, and document analysis involving Indonesian EFL teachers. The findings demonstrate that teachers' TPACK is enacted through three interrelated instructional practices in technology-enhanced writing instruction. Teachers shift traditional writing pedagogy toward technology-mediated learning by critically integrating Grammarly as a formative feedback tool rather than a corrective substitute. They further employ multimodal representations to scaffold students' grammatical understanding within written discourse, while modeling effective writing practices through guided interpretation and selective uptake of Grammarly-generated feedback. The study critically concludes that strong TPACK is essential for preventing overreliance on automated feedback, enabling teachers to appropriate Grammarly as a pedagogically mediated resource that fosters students' grammatical awareness, metalinguistic reflection, and autonomous writing development.

**Key Words:** *EFL Teacher, Grammarly, TPACK, writing instruction, digital tool*

## ABSTRAK

Integrasi teknologi digital ke dalam pengajaran Bahasa Inggris sebagai Bahasa Asing telah menjadi kebutuhan yang sangat penting dalam konteks pendidikan di Indonesia. Salah satu alat teknologi yang semakin populer adalah Grammarly, sebuah aplikasi evaluasi tulisan otomatis yang memberikan umpan balik secara "real-time". Namun, keefektifan Grammarly dalam pengajaran menulis sangat bergantung pada

Pengetahuan Teknologi-Pedagogi-Konten (TPACK). Penelitian ini bertujuan untuk mengetahui bagaimana guru EFL Indonesia menunjukkan TPACK mereka terkait Grammarly dalam mata pelajaran menulis. Dengan menggunakan desain studi kasus kualitatif, data dikumpulkan melalui observasi kelas, wawancara semi-terstruktur, dan analisis dokumen yang melibatkan beberapa Guru Bahasa Inggris di Indonesia. Temuan menunjukkan bahwa TPACK guru diterapkan melalui tiga praktik pengajaran yang saling terkait dalam pengajaran menulis yang didukung teknologi. Guru-guru mengalihkan pedagogi menulis tradisional menuju pembelajaran yang dimediasi teknologi dengan mengintegrasikan Grammarly secara kritis sebagai alat umpan balik formatif, bukan sebagai pengganti korektif. Mereka selanjutnya menggunakan representasi multimodal untuk mendukung pemahaman tata bahasa siswa dalam wacana tertulis, sambil mencontohkan praktik menulis yang efektif melalui interpretasi terarah dan penerimaan selektif terhadap umpan balik yang dihasilkan Grammarly. Studi ini menyimpulkan secara kritis bahwa TPACK yang kuat sangat penting untuk mencegah ketergantungan berlebihan pada umpan balik otomatis, sehingga memungkinkan guru untuk mengadopsi Grammarly sebagai alat pedagogis.

**Kata kunci:** *Guru Bahasa Inggris sebagai Bahasa Asing, Grammarly, TPACK (Pengetahuan Teknologi, Pedagogi, dan Konten), Pengajaran Menulis, Alat Digital.*

## INTRODUCTION

The rapid development of digital technology has significantly reshaped educational practices, including the teaching of English as a Foreign Language (EFL). In Indonesia, national curriculum policies encourage teachers to integrate technology into teaching and learning processes to foster student engagement, autonomy, and higher-order thinking skills (Setyowati, 2019a), (Setyowati, 2019b), (Mujayanah et al., 2022), (Setyowati, Education, et al., 2022), (Setyowati, Susanto, et al., 2022), (Aldebarant et al., 2023), (Setyowati et al., 2024), (Liando et al., 2025). However, many EFL teachers continue to experience difficulties in selecting and implementing appropriate technologies that align with pedagogical goals (Aisyah et al., 2021), particularly in writing instruction, which is often perceived as challenging and

monotonous by students. Writing Course remains a fundamental component of EFL writing instruction, as an activities competence directly influences students' ability to produce accurate, coherent, and meaningful written texts. However, conventional approaches to teaching writing and grammar—typically characterized by rule-based explanations and decontextualized exercises—often fail to support students' writing development or provide timely, formative feedback during the writing process (Ulfa et al., 2022), (Setyowati et al., 2024), (Heriyawati & Romadhon, 2025). In response to these pedagogical limitations, digital writing support tools such as Grammarly have emerged as potential mediators of grammar instruction in writing, offering automated and real-time feedback that can assist learners in revising and refining their written output.

Grammarly is a widely used Automated Writing Evaluation (AWE) tool that supports EFL writing through real-time, linguistically informed feedback on grammar, mechanics, and textual similarity. Within the Technological Pedagogical Content Knowledge (TPACK) framework, Grammarly represents a form of technological knowledge that becomes pedagogically meaningful only when aligned with instructional strategies and writing objectives. Empirical studies indicate that Grammarly can enhance grammatical accuracy and textual quality when teachers mediate its use through guided feedback, reflection, and revision processes (Nazari et al., 2021), (Samosir & Daulay, 2023), (Selim, 2024). In the Indonesian EFL context, effective integration of Grammarly requires teachers' TPACK to balance technological affordances with pedagogical guidance and content-specific writing instruction, ensuring that automated feedback complements, rather than replaces, students' cognitive engagement, authorial voice, and autonomous writing development (Magadan & Tulud, 2025), (Miranty et al., 2025). Although numerous studies have examined teachers' TPACK development and technology integration in EFL contexts (Aisyah, 2021), (Zainuddin et al., 2021), (Sahnan et al., 2025), (Manurung et al., 2025), limited research has focused on how teachers enact TPACK when using automated grammar feedback tools such as Grammarly. Therefore, this study seeks to address this gap by investigating how an Indonesian EFL teacher demonstrates TPACK in technology-enhanced writing instruction using Grammarly.

Hence, this article is guided by the research question, "How do EFL teachers demonstrate TPACK in technology-enhanced writing instruction through the use of Grammarly?

## Technological Pedagogical Content Knowledge (TPACK) and Grammarly in Indonesian EFL Writing Contexts

Teachers' professional knowledge has traditionally been conceptualized as Pedagogical Content Knowledge (PCK), which integrates Content Knowledge (CK) and Pedagogical Knowledge (PK) and reflects teachers' ability to transform subject matter into meaningful and accessible instruction (Shulman, 1986). PCK emphasizes instructional decision-making that considers learners' cognitive levels, linguistic needs, and learning contexts, which is particularly important in Indonesian English as a Foreign Language (EFL) classrooms where students have limited exposure to English outside school The rapid integration of digital technology has expanded this perspective through the Technological Pedagogical Content Knowledge (TPACK) framework, which incorporates Technological Knowledge (TK) alongside CK and PK (Manurung et al., 2025).

Within the TPACK framework, effective technology integration emerges from the dynamic interaction of content, pedagogy, and technology in specific instructional contexts. Grammarly can be positioned as an Automated Writing Evaluation (AWE) tool that supports English writing development by providing real-time feedback on grammar, mechanics, vocabulary, clarity, coherence, and plagiarism. From a TPACK perspective, Grammarly represents technological knowledge that must be pedagogically mediated and aligned with linguistic content. In Indonesian EFL classrooms, its effectiveness depends on teachers' ability to integrate Grammarly meaningfully into writing instruction rather than using it merely as a proofreading tool. While Grammarly supports learners' understanding of grammatical structures and academic discourse, teachers' pedagogical knowledge remains central in guiding students to interpret feedback critically, reflect on suggestions, and avoid overreliance on automated corrections.

The integration of Grammarly underscores the importance of Technological Pedagogical Knowledge (TPK), which refers to teachers' understanding of how instructional processes evolve when technology is incorporated into writing learning. Grammarly reshapes the writing process by enabling immediate feedback and iterative revision, thereby

supporting formative assessment and learner autonomy. Teachers with well-developed TPK are able to design writing activities that foster self-regulated learning, peer interaction, and reflective revision. However, they must also address Grammarly's limitations, particularly its inability to fully evaluate content relevance, rhetorical appropriateness, and contextual meaning. The TPACK framework, therefore, provides an appropriate theoretical foundation for examining Grammarly-assisted writing instruction in Indonesia, as it clarifies the knowledge required for effective AWE integration. As argued by (Aisyah, 2021) TPACK enables teachers to design technology-enhanced learning environments aligned with curricular goals, allowing Grammarly to be effectively embedded in blended or e-learning contexts, especially in large EFL classes with limited individualized feedback.

Setyowati et al (2024) explains that effective technology integration in writing instruction involves complex cognitive processes on the part of teachers, which are highly relevant to the use of Grammarly. Teachers must clearly conceptualize the instructional purpose of integrating Grammarly, particularly in addressing persistent issues in EFL writing such as grammatical accuracy, coherence, and limited revision practices. They also need to understand how students cognitively process automated feedback, as uncritical acceptance may hinder the development of linguistic reasoning and writing awareness. Therefore, instructional strategies should position Grammarly as a pedagogical support tool that facilitates analysis, reflection, and revision, rather than as a substitute for teacher feedback or meaningful engagement with writing conventions.

Aisyah et al (2021) identify developmental levels of Technological Pedagogical Content Knowledge (TPACK) that can be observed in technology-supported writing instruction. At lower levels, teachers tend to use Grammarly primarily for surface-level error correction, reinforcing a product-oriented approach to writing. At more advanced levels, teachers design student-centered writing activities that integrate Grammarly for formative assessment, higher-order thinking, and reflective learning. These levels highlight key issues in writing instruction, particularly the shift from mechanical correction to process-based writing. Consequently, effective Grammarly integration requires the progressive development of teachers' TPACK to support deeper learning and sustainable writing improvement.In conclusion, aligning Grammarly with the TPACK framework provides a strong cognitive foundation for understanding technology-assisted writing instruction in Indonesian EFL contexts. Grammarly's pedagogical value depends not on the technology itself, but on teachers' ability to integrate content, pedagogy, and technology in a reflective and contextualized manner. TPACK, therefore, offers a robust lens for examining

Grammarly-assisted EFL writing instruction while maintaining pedagogical integrity and learner autonomy.

Research Design

The research is done in the following picture:



Figure 1: Research Method

This study employed a qualitative research design using a case study approach to explore English teachers' Technological Pedagogical Content Knowledge (TPACK) in technology-enhanced writing instruction through the use of Grammarly in Indonesian EFL classrooms. A case study was selected as it enables an in-depth and systematic investigation of a bounded phenomenon within its real-life context, allowing researchers to describe and explain how and why certain instructional practices occur (Rejeki, 2023), This approach was considered appropriate for capturing the complexity of teachers' knowledge integration when implementing automated writing evaluation tools in classroom instruction.

The analytical focus of this study was directed toward the technological domain of the TPACK framework, as conceptualized by (Kutsyuruba, 2017). Specifically, the analysis examined four interrelated components of technology-related knowledge: Technological Knowledge (TK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Technological Pedagogical Content Knowledge (TPACK). These

components were used as analytical lenses to identify how teachers selected, adapted, and integrated Grammarly into English writing instruction, as well as how technological affordances were aligned with pedagogical strategies and linguistic content.

The participants in this study were three English teachers from an Indonesian vocational high school who actively integrated Grammarly into writing instruction. Data were collected through classroom observations and semi-structured interviews. Observations were conducted to document how Grammarly was used during teaching and learning activities, including the types of writing tasks assigned, the nature of feedback provided, and student engagement with the tool. Semi-structured interviews were employed to explore the teachers' perceptions, beliefs, and pedagogical reasoning regarding the use of Grammarly, as well as to examine consistency in technology integration practices.

## DISCUSSION

### English Teachers' TPACK in Using Grammarly for Writing Instruction

*Technological Knowledge (TK)*

The findings indicate that the three English teachers demonstrated adequate technological knowledge in utilizing Grammarly as an Automated Writing Evaluation (AWE) tool in writing instruction. All teachers were able to operate Grammarly across different platforms, including web-based and application-based versions, and understood its main features, such as grammar checking, vocabulary suggestions, clarity improvement, and plagiarism detection. The teachers also showed the ability to troubleshoot basic technical issues encountered by students during Grammarly use. Furthermore, they expressed positive beliefs toward Grammarly, perceiving it as an effective technological solution to increase students' motivation, engagement, and awareness of linguistic accuracy in English writing classes.

*Technological Pedagogical Knowledge (TPK)*

In terms of Technological Pedagogical Knowledge, the teachers integrated Grammarly with pedagogical strategies that emphasized student-centered and process-based writing instruction. Grammarly was used to support drafting, revising, and editing stages rather than merely final proofreading. The teachers guided students to analyze Grammarly feedback critically through guided discussions, peer review activities, and reflective revision tasks. This pedagogical mediation aimed to prevent students' overreliance on automated corrections and to promote metalinguistic awareness. Classroom observations revealed that Grammarly facilitated formative assessment and encouraged learner autonomy when appropriately scaffolded by the teachers.

*Technological Content Knowledge (TCK)*

The teachers' Technological Content Knowledge was reflected in their ability to align Grammarly features with specific writing content, such as grammatical structures, sentence variety, cohesion, and academic language use. Grammarly was particularly employed to address common writing problems among SMK students, including verb tense errors, subject–verb agreement, and inappropriate word choice. Teachers selected relevant Grammarly feedback to support targeted writing objectives and adapted its use to vocational school contexts, ensuring that linguistic content remained aligned with curriculum demands and students' proficiency levels.

*Technological Pedagogical Content Knowledge (TPACK)*

The integration of Grammarly reached the level of TPACK when teachers effectively combined technological tools, pedagogical strategies, and writing content in a coherent instructional design. Teachers designed writing activities that incorporated Grammarly for discovery-based learning, formative assessment, and reflective revision. Grammarly feedback was used alongside teacher explanations, peer discussion, and contextual examples relevant to students' daily experiences. This integration enabled students to improve writing accuracy while maintaining meaning, coherence, and contextual appropriateness. Overall, the findings suggest that

effective Grammarly-assisted writing instruction depends on teachers' ability to balance automated feedback with pedagogical guidance and content knowledge.

The findings of this study focus on the technological domain of English teachers' Technological Pedagogical Content Knowledge (TPACK), as conceptualized by (Rosenberg & Koehler, 2015), encompassing Technological Knowledge (TK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Technological Pedagogical Content Knowledge (TPACK) (Koehler & Rosenberg, 2013). In the context of three English teachers using Grammarly for writing instruction in a vocational high school, the cross-case analysis indicates that all teachers demonstrated adequate TK in operating Grammarly as an Automated Writing Evaluation (AWE) tool, including understanding its core features such as grammar correction, vocabulary suggestions, clarity improvement, and plagiarism detection. However, differences emerged in the depth of technology use, with one teacher exhibiting more advanced technological competence by selectively utilizing multiple Grammarly features and independently addressing technical issues, while the other two teachers relied more heavily on basic corrective functions.

Beyond technical skills, the cross-case analysis also highlights variations in teachers' beliefs and pedagogical mediation of Grammarly use. All three teachers viewed Grammarly positively as a solution to common challenges in EFL writing instruction, particularly limited feedback and students' grammatical difficulties, which encouraged technology adoption. Nevertheless, differences were evident in how Grammarly was integrated pedagogically: one teacher consistently embedded Grammarly within a process-based writing approach that emphasized reflection and revision, whereas the other two teachers tended to use it primarily as a support for surface-level error correction. These findings suggest that while shared technological knowledge enables initial adoption of Grammarly, higher levels of TPACK are reflected in teachers' ability to align technology use with pedagogical strategies and writing content, thereby supporting deeper learning and more effective writing development.
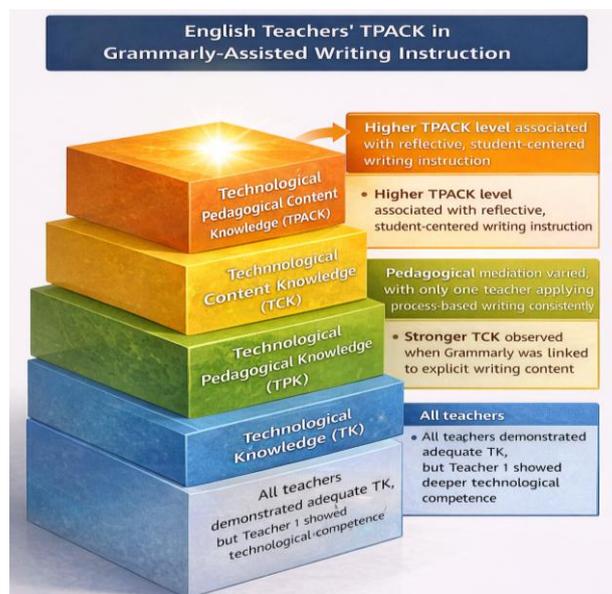
Figure 2: Model of English teachers' TPACK in Grammarly-assisted writing instruction.

**CONCLUSION**

Based on the findings above, several key teaching practices related to Technological Pedagogical Content Knowledge (TPACK) were identified. First, in shifting activities, the teachers demonstrated Technological Knowledge (TK) and Technological Content Knowledge (TCK) by organizing writing materials and tasks using Grammarly across different stages of instruction and guiding students to use its features effectively. Second, in applying representation activities, the teachers used Grammarly feedback to support specific writing skills, such as grammar accuracy, vocabulary choice, clarity, and coherence, helping students understand writing conventions through examples and revisions. Finally, in modeling activities, the teachers showed full TPACK by demonstrating how to interpret Grammarly feedback, revise texts, and reflect on errors. They encouraged students to follow these steps independently, supporting process-based, reflective, and student-centered writing instruction.

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