
Exploring Information Communication and Technology (ICT) Integration in English for Foreign Learners (EFL) Classroom : A Case Study at Senior High School in Kuantan Mudik Regency

Nur Ingsira Fitrah Herman¹, Dodi Settiawan², Bukhori³

Universitas Islam Negri Sultan Syarif Kasim Riau

E-mail: nuringsirafh@gmail.com, dodi.settiawan@uin-suska.ac.id, bukhori.elmeskumy@gmail.com

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Abstract: *This research investigates the implementation of Information and Communication Technology (ICT) in English as a Foreign Language (EFL) classrooms through the lens of the TPACK framework. Data collection methods included analysis of lesson plans, classroom observations, and interviews with both teachers and students from two senior high schools. The findings indicate that although teachers were aware of curriculum objectives and expressed intentions to integrate ICT, its actual use was limited and inconsistent. Most applications were confined to simple PowerPoint presentations, lacking multimedia elements and interactivity. Instruction largely remained teacher-centered, with minimal student participation and limited use of collaborative or digital learning resources. Viewed through the TPACK perspective, teachers demonstrated strong content knowledge (CK) and some pedagogical knowledge (PK), but their technological knowledge (TK) was insufficient. Their integration of technology with content (TCK) and pedagogy (TPK) was shallow, and comprehensive TPACK implementation was absent. This aligns with existing literature, which often notes the difficulty educators face in effectively merging all three knowledge domains. Contributing obstacles included inadequate infrastructure, unstable internet connections, low digital confidence among teachers, and classroom management challenges when students used personal devices issues that are commonly cited in ICT integration research. Despite these challenges, both educators and learners acknowledged the potential of ICT to enhance learning by making lessons more engaging and understandable through visual and audio aids. In summary, technology use must go beyond presence it needs to be thoughtfully embedded into teaching strategies and subject content. This reinforces the*

core principle of TPACK: that impactful, technology-supported instruction requires a balanced integration of technological, pedagogical, and content knowledge.

Introduction

In the 21st century, Information and Communication Technology (ICT) plays a vital role in facilitating the global exchange of knowledge. In the context of English as a Foreign Language (EFL) instruction, ICT serves to improve teaching strategies and support learners adapting to the digital environment. This study incorporates several learning theories namely Technological Pedagogical Content Knowledge (TPACK), constructivism, activity theory, and connectivism to examine how ICT integration reshapes language education. The TPACK model, introduced by Mishra and Koehler (2006), emphasizes that effective technology use in education requires a balanced understanding of three core components: Content Knowledge (CK), Pedagogical Knowledge (PK), and Technological Knowledge (TK). It also includes intersecting areas like Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and the comprehensive TPACK domain, which forms the basis for effective technology-driven teaching practices.

Drawing from constructivist approaches particularly social constructivism and situated learning the emphasis lies on learners actively constructing knowledge through culturally and socially rich interactions. This is reflected in classroom strategies such as peer collaboration and group tasks, which are further enhanced by digital tools that promote interaction and reflection. Activity theory, influenced by the ideas of Vygotsky and Leont'ev, conceptualizes learning as an activity mediated by tools within a sociocultural context. It focuses on the interplay between individuals, tools, environment, and societal norms, encouraging the design of student-centered learning spaces. Meanwhile, connectivism, introduced by George Siemens (2005), views knowledge as distributed across networks of information and social systems, with learning occurring through the creation of connections something facilitated by digital technologies.

When applied to EFL classrooms, these theoretical perspectives are highly complementary. TPACK helps educators choose suitable technologies aligned with content and pedagogy, constructivist and activity theory promote meaningful, interactive use of ICT, and connectivism supports the development of digital learning networks. Collectively, they offer a comprehensive framework for understanding how ICT can enhance vocabulary development, foster authentic communication, encourage collaboration, and provide scaffolding through multimedia tools, digital platforms, and peer-supported learning.

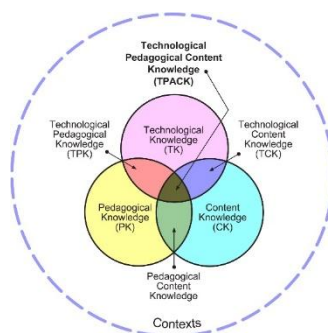
Theoretical Framework

The Technological Pedagogical and Content Knowledge (TPACK) framework outlines the essential knowledge teachers need to effectively integrate technology into their classroom instruction (Koehler, M.J., 2010). This model serves as a theoretical lens to evaluate a teacher's ability to design and deliver instruction that is enhanced by technology, as well as to identify the types of knowledge required for successful teaching in a technology-rich learning environment (Taopan, L., Drajiati, N., & Sumardi, 2020). Supporting this view, Schmit et al. (2020) suggest that TPACK is a valuable conceptual tool for understanding what teachers must know in order to incorporate technology into their instructional practices and how this knowledge can be

cultivated.

Furthermore, using TPACK as a framework to assess teaching knowledge may influence the design of training and professional development programs, particularly for both pre-service and in-service educators (Lehiste, 2015).

The concepts of Content Knowledge (CK), Pedagogical Knowledge (PK), and Pedagogical Content Knowledge (PCK) as defined by Mishra and Koehler align closely with those originally proposed by Shulman. CK refers to a teacher's deep understanding of the subject matter to be taught, including insights into the structure and nature of knowledge within various disciplines. PK pertains to comprehensive knowledge of teaching and learning strategies, including methodologies and classroom practices. Mishra and Koehler expanded the framework by introducing additional domains such as Technological Knowledge (TK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and the fully integrated Technological Pedagogical Content Knowledge (TPACK), which together form a holistic model for evaluating and guiding technology integration in education, as illustrated in the figure below.



The TPACK framework comprises three core domains of knowledge and their intersections: Technological Knowledge (TK) refers to teachers' ability to effectively use various technologies for instructional purposes; Pedagogical Knowledge (PK) involves their expertise in applying appropriate teaching strategies to enhance learning; and Content Knowledge (CK) relates to their understanding and mastery of the subject matter. The intersections among these domains are also crucial. Technological Pedagogical Knowledge (TPK) refers to the ability to apply pedagogical strategies supported by technology; Technological Content Knowledge (TCK) is the understanding of how technology can be used to support student learning of subject content; and Pedagogical Content Knowledge (PCK) involves knowing how to represent and teach content effectively using suitable pedagogical techniques. The fully integrated form, Technological Pedagogical Content Knowledge (TPACK), is the ability to use specific technologies and teaching methods in concert to help students understand subject content. According to Bugueno (2013), the TPACK framework provides multiple advantages for teaching.

First, integrating technology effectively in instruction requires a sound understanding of how different technological tools function and support learning. Second, the framework offers practical pedagogical strategies that utilize technology to teach subject content, including insights into what makes certain concepts challenging and how technology might address these difficulties. Third, it reflects teachers' understanding of students' prior knowledge and learning theories, including how technological tools can facilitate deeper knowledge construction (Taopan et al., 2020). Several key aspects of the TPACK model stand out. Mishra (2006) highlights that technology serves not only as a learning aid but also as a tool for maintaining student engagement.

In addition, content representation is enhanced through technology integration in classroom settings. Maor (2011) emphasizes that TPACK is rooted in constructivist theory, which views learning as the process of building meaning from experience (Bugueno, 2013). From a constructivist perspective, the interaction between learners and their environment is essential to the creation of knowledge. Effective teaching, therefore, involves students actively engaging in learning, reflecting on their experiences, collaborating with others, and using technology to explore rich educational opportunities.

Moreover, the process of integrating technology into teaching follows a natural sequence: after learning goals are defined, suitable content representations are chosen, and corresponding technologies are selected to support those representations (Taopan et al., 2020). Ideally, even before setting learning objectives, a needs analysis should be conducted to determine the relative advantages of incorporating technology. Once goals are clear, the focus shifts to pedagogy, guiding the selection of appropriate instructional settings and technological tools.

Method

This study employed a qualitative approach using a case study method. Qualitative research serves as a way to explore and understand the meanings that individuals or groups assign to social or human-related issues. The research design followed a qualitative case study format, which is frequently used to gain a deeper understanding of how the scientific approach is applied in teaching speaking skills. In this context, the research design refers to the overall plan and strategy used to determine the appropriate methodology, the types of data to be collected, and the procedures for analyzing that data.

Findings and Discussion

Teachers' use of tools like English songs and dialogue videos in listening activities highlights a growing alignment between their technological abilities and instructional goals. These materials are purposefully selected to enhance student engagement, understanding, and immersion in the language. This intentional choice indicates not only the presence of Technological Knowledge (TK) but also sets the stage for further development of Pedagogical Knowledge (PK) and Content Knowledge (CK) within the TPACK framework. Observations and interviews with teachers LYN and DNI reveal that they possess strong CK and PK, demonstrated by their ability to align lessons with curriculum goals such as common expressions, vocabulary building, reading comprehension, writing skills, and genre analysis. They incorporate ICT-based activities like interactive media and group collaboration to support these objectives, reflecting a purposeful approach to integrating technology in the classroom.

However, a gap remains between planning and implementation. In practice, technology use tends to be teacher-centered, often limited to PowerPoint presentations that serve merely as tools for delivering content. This method restricts student interaction, critical thinking, and active language use, as students mostly listen, take notes, or copy text without meaningful participation. Yet, when ICT tools like visual aids, audio materials, and interactive platforms are used effectively, they enhance student motivation, involvement, independence, and language development. Research supports that multimedia content such as images, videos, and animations improves learning through dual-channel processing, leading to better comprehension and memory retention. Students also expressed that lessons supported by technology were more engaging, easier to understand, and less repetitive. Nonetheless, technical barriers like malfunctioning projectors and unstable internet connections hinder consistent use of ICT. As a result, while

teachers show a willingness and basic ability to integrate technology, its practical application in EFL classrooms remains limited. Student feedback suggests that visual elements such as pictures, diagrams, and videos are more effective than traditional verbal or written instruction, making lessons more accessible and enjoyable. Overall, while foundational ICT use and TK are evident, sustained and impactful integration continues to face operational challenges.

Conclusion

This research explored how Information and Communication Technology (ICT) is integrated into English as a Foreign Language (EFL) instruction through the lens of the Technological Pedagogical Content Knowledge (TPACK) framework. By analyzing lesson plans, observing classroom activities, and conducting interviews with both teachers and students, the study identified both the opportunities and limitations of current ICT usage in two senior high schools. The findings indicate that while the teachers were aware of curriculum expectations and made efforts to incorporate technology, actual use in the classroom was limited and inconsistent. Most technological integration was restricted to basic tools such as PowerPoint slides, often lacking rich multimedia features or interactive elements. Teaching remained largely teacher-driven, with minimal evidence of student involvement through digital collaboration or learner-centered activities.

In terms of the TPACK framework, teachers showed sufficient Content Knowledge (CK) and some Pedagogical Knowledge (PK), but their Technological Knowledge (TK) and ability to effectively blend technology with teaching practices were lacking. Technological Content Knowledge (TCK) and Technological Pedagogical Knowledge (TPK) were present at a basic level, while comprehensive TPACK implementation was not evident in classroom settings. Barriers such as inadequate technological infrastructure, unreliable internet connections, limited teacher confidence in using digital tools, and classroom management issues involving student devices hindered effective ICT integration. Nevertheless, both educators and students acknowledged the value of technology, especially in improving engagement and comprehension through the use of visual and auditory materials.

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