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EXPLORING THE CHALLENGES AND STRATEGIES FOR INDONESIAN IN-SERVICE ENGLISH TEACHERS TO IMPLEMENT THE TPACK IN SECONDARY SCHOOLS

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ABSTRACT

This library research systematically reviewed the literature on the challenges and strategies for Indonesian in-service English teachers to implement the Technological Pedagogical Content Knowledge (TPACK) framework in secondary schools. The purpose was to explore the available evidence on the challenges faced by in-service English teachers in implementing TPACK and identify effective strategies to address these challenges. A systematic search of electronic databases was conducted, and the selected articles were analyzed using a thematic analysis approach. The results revealed that technology integration issues, including teacher incompetence for technology integration and insufficient school infrastructure, hamper the use of TPACK. Additionally, teachers utilized inquiry-based learning and technology-integrated lessons, such as combining content with Integrated Interactive Whiteboards (IWB) and multimedia, to adopt TPACK in their classrooms. To assist teachers in incorporating TPACK into their teaching practices, the results of this study present implications for teacher training programmes and educational policies in Indonesia.

KEYWORDS: *TPACK,* English language teaching*, in-service teachers, secondary schools*

INTRODUCTION

In this digital era, teachers encounter the most significant challenge in adapting their instruction to satisfy current students' demands (Ammade et al., 2020). However, Prasojo et al. (2020) uncovered that Indonesian in-service EFL teachers still need to enhance their technological competence despite having sufficient pedagogical skills. Nonetheless, being technologically competent does not necessarily equate to being able to use technological devices for pedagogical purposes (Koehler & Mishra, 2008). Therefore, a specific pedagogical framework is required to help teachers develop this competence. It is empirically and widely acknowledged that they should be equipped with the so-called "Technological Pedagogical and Content Knowledge (TPACK)" to successfully implement technologies in their pedagogical practices (Koehler & Mishra, 2008; Xie et al., 2017; Yang et al., 2016).

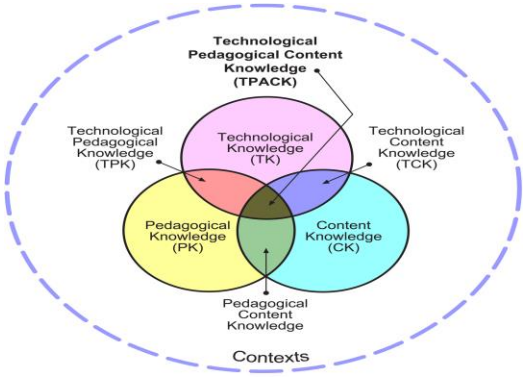
TPACK is a framework describing knowledge teachers should master to teach with technology effectively. Teachers can choose and utilize technologies for a specific

instructional goal and encourage students when learning with digital aids (Starkey, 2019). Koehler & Mishra (2008) suggested that TPACK is an essential model of teacher expertise in teaching with technology alignment with content and pedagogical knowledge in this globalized era (Willermark, 2017). It combines content, pedagogy, and technology knowledge (Rosenberg & Koehler, 2015; Schmidt et al., 2009). In addition, the integration of digital technologies into teaching and learning can develop student comprehension and critical thinking abilities (Lei & Zhao, 2007), promote students' learning motivation (Papastergiou, 2009), and enhance students' 21st-century skills (Kleiman, 2004).

Even though most teachers are cognizant of the demand for educational technology, relatively few are well-prepared to incorporate technology appropriately into their pedagogy (Hermans et al., 2008). In-service teachers commonly experience higher challenges in integrating technology and TPACK in the classroom compared to pre-service teachers due to age and self-efficacy factors (Inan & Lowther, 2010; Yaghi, 2001). Considering the long years of teaching, they are expected to possess higher Pedagogical Knowledge (PK) and Content Knowledge (CK) than pre-service. The extant study found that Technological Knowledge (TK) is negatively associated with years of teaching but positively associated with CK. Liu, Zhang, and Wang (2015) advocate that less-experienced teachers with 1 to 5 and 6 to 10 years have sufficient technological integrative knowledge than those with more teaching experience (11 to 20 years and above 20 years).

Nevertheless, those with more than 20 years of teaching experience possess sufficient PK and CK than those without experience. These findings supported by Koh et al. (2014) study years of teaching were negatively associated with TK, Technological Pedagogical Knowledge (TPK), Technological Content Knowledge (TCK), and Technological Pedagogical Content Knowledge (TPCK) but positively associated with CK and (Pedagogical Content Knowledge (PCK).

Although a growing body of research has investigated teachers' self-reported perceptions of TPACK (e.g., Starkey, 2019; Xie & Luthy, 2017; Willermark, 2017; Yang et al., 2016; Koehler et al., 2011; Chai et al., 2011; Koh et al., 2010), little has documented several challenges and strategies of implementing TPACK in Indonesian secondary schools. For this reason, this study aims to answer the investigation question: What are the challenges and strategies for Indonesian in-service English teachers to implement TPACK in secondary schools?



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METHOD

This library research employs a systematic literature review METHOD. The research design involves a comprehensive search of electronic databases, including ERIC, Scopus, and Google Scholar. The search strategy utilizes keywords related to TPACK, English language teaching, in-service teachers, and secondary schools. The inclusion criteria include studies published in English, peer-reviewed, and examining the challenges and strategies related to implementing TPACK by in-service English teachers in secondary schools. The exclusion criteria will be studies that focus on pre-service teachers, studies that do not focus on English language teaching and irrelevant studies to the Indonesian EFL context.

Sample:

The sample in this library research consists of all available studies that meet the inclusion criteria.

Data Collection:

The data were gathered through a systematic search of electronic databases using a predefined search strategy. The titles and ABSTRACTs of the retrieved articles were screened for relevance. Full-text articles that meet the inclusion criteria were reviewed and analyzed.

Data Analysis:

The data were analyzed utilizing a thematic analysis approach. The reviewed articles were categorized based on the challenges in-service English teachers face in implementing TPACK, the effective strategies to address these challenges, and the outcomes of implementing TPACK in secondary schools. The findings are summarized and presented in a narrative format.

RESULT AND DISCUSSION

Teachers' challenges and Technology integration issues

The inability to incorporate technology into their teaching methods is one of the primary challenges Indonesian English teachers encounter in secondary schools. Studies have shown that older teachers with more years of teaching experience feel less ready to integrate technology into their lessons (Van Braak et al., 2004). This statement is supported by Inan and Lowther (2010) that revealed in-service teachers commonly experience higher challenges in integrating technology and TPACK in the classroom to provide effective learning strategies compared to pre-service teachers due to age and self-efficacy factors years of teaching were found to be negatively associated with technological knowledge but positively associated with pedagogical and content knowledge (Koh et al., 2014). Additionally, inadequate school facilities, such as a lack of access to computers and other technical aid, prevent teachers from incorporating technology into their teachings (Inan et al., 2010).

Teachers' Strategies and Technology-integrated lessons

Several strategies to address the challenges faced by secondary teachers, for instance, using Integrated Interactive Whiteboards (IWBs) in TPACK classrooms. Secondary teachers can address presentation and instructional strategies issues by using IWBs (Jang, 2010). Furthermore, students are interested in using IWBs in English classrooms (Liu, 2013). The use of IWBs is beneficial for both teachers and students. IWBs assist teachers in differentiating education in EFL classes by presenting content in various modes, including interactive, audio, and visual (Eickelmann & Vennemann, 2013). It provides them with a means to communicate knowledge dynamically and interactively, enhancing their efficacy and confidence when teaching (Stockwell, 2010). Apart from this, it also encourages student involvement through visually appealing content. Using IWBs establishes students' engagement and motivation compared to conventional approaches (Akçayr & Dündar, 2015). Likewise, IWBs enable student collaboration on interactive content that promotes their speaking abilities in EFL classes (Mehdipour & Zerehkafi, 2013).

Another strategy that teachers can apply is integrating content with multimedia. Multimedia content promotes student-teacher interaction, and teachers can satisfy students by answering their queries using multimedia content (Iqbal et al., 2017). Multimedia applications attract students and increase their concentration while learning due to their interactive features and navigation (Halim & Sulaiman, 2020).

In addition, implementing Inquiry-Based Learning (IBL) allows teachers to modify materials for their students and engage them in learning (Crockett, 2019). Students who engage in inquiry-based learning possess better cognitive abilities than conventional teaching methods (Firman et al., 2019).

IBL is a teaching strategy that encourages students to actively participate in their learning process by asking questions, searching for answers, and exploring subjects in-depth through research and investigation. Using IBL in a TPACK classroom in an EFL context has numerous advantages for teachers and students. It enhances teacher reflection and self-efficacy by motivating educators to evaluate their pedagogical approaches and endeavour new teaching techniques (Lin, 2014), which fosters teacher creativity and innovation (Darus & Hassan, 2015). Besides, it encourages students to refine their critical thinking abilities to assess evidence, analyze data, and create conclusions (Şahin, 2017). IBL allows students to apply their English in meaningful and real-world circumstances to improve their spoken and written language skills (Chen, 2013).

Therefore, the challenges faced by Indonesian in-service English teachers in implementing TPACK in secondary schools are primarily related to technology integration issues. However, technology-integrated lessons and inquiry-based learning can help teachers overcome these challenges and improve the quality of their teaching practices.

CONCLUSION

In conclusion, this investigation highlights the importance of addressing teachers' challenges in integrating TPACK into their teaching practices. The findings uncovered that Indonesian teachers confronted several challenges in implementing the TPACK framework in secondary schools, including a lack of ability to integrate technology into their teaching practices and inadequate school facilities. Nevertheless, teachers can address these challenges by utilizing technology-integrated lessons such as IWBs and multimedia content

as well as implementing inquiry-based learning. These strategies can assist teachers in engaging their students in the learning process and enhance the quality of their teaching practices. Hence, it may be crucial for policymakers to provide teachers with adequate training and resources, including technological aids at schools to support teachers in employing TPACK in their teaching practices.

AUTHOR CONTRIBUTIONS

Malisa carried out all aspects of the research project, from the initial conception and design to the final manuscript preparation. She is responsible for collecting and analyzing the data, interpreting the results, and drafting the manuscript.

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