ENGLISH AS A FOREIGN LANGUAGE TEACHERS' (EFL) USE OF TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE (TPACK): STUDENTS' PERCEPTION

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Abstract

This study aimed to explore EFL students' perspectives on using Technological Pedagogical Content Knowledge (TPACK) in the classroom conducted by their teachers. This qualitative study investigated 53 students of secondary school in Indonesia. The students answered the questionnaires through Googleform to obtain information about the integration of technological pedagogical content knowledge in teaching English.

The study found that students perceived their teachers to be effective in integrating technology into their teaching. The mean scores for items related to technological pedagogical knowledge (TPK) and technological content knowledge (TCK) were also above 4, it means that students generally agreed that their teachers were able to effectively use technology to support their teaching of English language content. It indicates that students are learning effectively from their teachers' use of technology, which can help to improve student learning outcomes.

This study can benefit teachers by improving their awareness and enhancing their competence in integrating technology into teaching English. However, these results are based on the perceptions of a specific group of students, so they may not be applied to other contexts or populations. Therefore, it is useful to conduct further research to validate these findings and to explore other factors that may influence students' perceptions of their teacher's TPACK.

Keywords: TPACK, EFL, students' perspectives, technology integration

1   INTRODUCTION

Updating the development of technology is crucial for teachers to keep up with changing technology, improve student learning, enhance professional development, and meet the demands of the modern workforce[1], [2], [3]. Through the significant development of technology and the internet, students can learn English without spending much time [4]. They can learn from applications, videos, podcasts, and online courses. They can also chat with native speakers on social media and language exchange platforms to practice speaking and listening. However, it needs a much more considerable effort for teachers to get along with these changes. Teachers focus on content knowledge and need competence in the TPACK framework [5]. They have to learn how to use technology to improve their teaching and combine it with their expertise in the subject they teach.

TPACK is a complex framework, and this is due to the complicated nature of the teaching profession to begin. Knowing about technology and how to use it in everyday activities is just one part of the story; integrating this knowledge into instruction using proper pedagogical skills and classroom management abilities is a whole different world. It only makes sense to state that there are different conceptualizations for the TPACK framework, each emphasizing some aspects of this knowledge as the core and others as supporting components. As discussed in the previous study, teachers' knowledge base primarily focuses on content knowledge (Shulman, 1986) in [6].

TPACK is a popular term discussed in the past decade [7] [8]. TPACK is significant in teaching English as a Foreign Language (EFL) because it helps teachers integrate technology into teaching practice. Using TPACK, EFL teachers can develop a deep understanding of how technology can enhance

content knowledge and pedagogy [9]. TPACK helps EFL teachers improve their teaching skills through technology. This gives students advantages, such as the mastery of technological practices, the improvement of learning performance, the improvement of knowledge, the creation of a space, and the encouragement of self-study. [8].

Technology cannot be separated from pedagogical content knowledge [10]. However, not all teachers have access to the necessary technology or training to use TPACK in EFL. Another challenge is that teachers may lack the skills and knowledge needed to integrate technology into their language lessons, leading to ineffective use of technology in the classroom [8]. Additionally, teachers may struggle to find the right balance between content knowledge, pedagogy, and technology, leading to lessons that do not effectively meet the needs of their students.

Furthermore, teachers may face some limitations when integrating technology into their classes. One major limitation is access to technology and resources [8]. Only some schools have the same technology infrastructure or funding level, and some teachers may need access to the necessary equipment or software [11]. In this condition, teachers find difficulties in effectively implementing TPACK.

However, teachers using the TPACK framework have an opportunity to enhance their teaching practices and improve student learning outcomes [12]. By integrating technology into their lessons, teachers can create more dynamic and engaging learning experiences for their students [13] [14]. Technology can be used to personalize instruction, provide real-time feedback, and create opportunities for collaboration among students [15]. Using TPACK, teachers can use technology to give students access to educational resources and information outside the classroom [14].

Advancements and innovations in technology are recognized as having a significant impact on teaching English [16]. Changes in education and teacher thinking have led to a new understanding of the impact of professional development on teachers' skills and knowledge. Teacher professional development improves their teaching practices by enhancing their knowledge of content, teaching methods, and technology [14] , [17]. Technology integration in education is becoming increasingly important, requiring teachers to be equipped with technological knowledge for effective classroom teaching. Technology integration allows teachers to meet the expectations of students already comfortable with digital devices [18].

More studies are needed to understand how students perceive their teachers' use of technology in EFL classrooms, as there is limited research on this topic. The studies have mainly relied on teachers' self-reports, which may not accurately reflect students' experiences [19]. Therefore, it is essential to conduct further research to understand better how students view their teachers' TPACK in the classroom. This information can be helpful for teacher training programs to improve their TPACK and incorporate technology more effectively in their EFL instruction. Additionally, understanding students' perceptions can help teachers identify areas for improvement and adjust their teaching practices accordingly. Overall, researching students' perspectives of their teachers' TPACK in EFL classrooms is crucial for enhancing the quality of education.

This research was limited in the questions:

1. How do students' perceptions of their EFL teachers' technological knowledge in English language teaching?
2. How do EFL teachers integrate pedagogical knowledge for effective language instruction?
3. How do students' perceptions of their EFL teachers' content knowledge in English language learning?

2   METHODOLOGY

The study used qualitative research. This aims to investigate EFL students' perspectives on using TPACK in the classroom conducted by their teachers.

The participants are 53 students, 18 males and 35 females, from secondary school in Kebumen, Indonesia. They are the students of English as a foreign language subject at secondary school in the academic year 2023.

The study used the components of TPACK to examine the TPACK of EFL teachers through students' perspectives. The scale included seven components of the TPACK framework, including (1) Technological Knowledge (TK), (2) Pedagogical Knowledge (PK), (3) Content knowledge (CK), (4) Technological Pedagogical Knowledge (TPK), (5) Technological Content Knowledge (TCK), (6) Pedagogical Content Knowledge (PCK), and (7) Technological Pedagogical Content Knowledge (TPACK). The scale consists of 35 items that reflect the degree of agreement of the students with the statements. Shulman (1986) in [20].

The survey used a Likert scale of five points, where a rating of 1 indicated strong disagreement and a rating of 5 indicated strong agreement. The total score was calculated by summing up the points across all subdomain categories. It ranged from 35 to 175 points. A Google Form was used to provide the learners with the instrument. To summarize the results, the researchers analyzed descriptive statistics mean and standard deviation.

3   FINDING AND DISCUSSION

This study focused on how students perceived EFL teachers' knowledge of TPACK in classrooms. It discussed the results related to students' perceptions of EFL teachers' use of technology in teaching. Overall, the results showed that students' perceptions positively impacted teachers' TPACK knowledge. This, in turn, encouraged teachers to reflect on their practices and improve their technological skills.

a. Technological Knowledge

Table 1. Technological Knowledge

Item	Mean	Standard Deviation
A1. My teacher knows about computer hardware (LCD projector, data cable, and etc.)	4.68	0.637
A2. My teacher knows about basic computer software (such as media players, word processing programs (MS Word), and web browsers).	4.68	0.693
A3. My teacher knows how to solve technical problems related to hardware (such as setting up a printer, using a webcam).	4.57	0.711
A4. My teacher knows how to handle software-related technical issues (such as installing drivers, setting up an Internet connection, and sharing files).	4.75	0.548
A5. My teacher keeps up with important new technologies (such as e-books, Facebook).	4.68	0.693

The results suggested that students positively perceived their teacher's technological knowledge in using TPACK. The mean scores for each item were above 4, which indicated that students generally agreed that their teachers had the necessary technological knowledge to use TPACK effectively. The standard deviations were relatively small, which indicated that the responses were tightly clustered around the mean, suggesting a high level of agreement among the students.

Based on these results, it could be concluded that students perceived their EFL teachers to have good technological knowledge in using TPACK. This finding is supported by [21] found that teachers had no problem bringing technological knowledge in their teaching.

b. Pedagogical knowledge

Table 2. PK

Item	Mean	Standard Deviation
B1. My teacher uses a variety of teaching strategies in class (such as explanations, asking questions, and group work).	4.32	0.688

B2.	My teacher uses a variety of evaluation methods and techniques (such as quizzes, reports, and role plays).	4.38	0.650
B3.	My teacher understands students' learning difficulties.	4.29	0.702
B4.	My teacher adjusts the way of teaching according to performance and feedback from students.	4.51	0.545
B5.	My teacher knows how to manage her class (such as drafting clear class rules, creating a friendly atmosphere in the classroom, and developing a good relationship between students and teachers).	4.57	0.548

The results showed that students thought their teachers knew how to use TPACK effectively. The average scores for each item were above 4, which means students generally agreed that their teachers had the necessary knowledge to use TPACK well. This supports previous research by [22]. The standard deviations were small, showing that the students' responses were similar and they mostly agreed with each other.

The highest mean score was for item B5. Teachers who manage their classrooms well could better create a positive learning environment supporting student engagement and learning.

The lowest mean score was item B3. Although the mean score was still above 4, this suggested that students perceived their teachers to be slightly less knowledgeable in this item. Teachers needed to have a good understanding of their students' learning difficulties to provide appropriate support and create their instruction to meet the needs of all students.

c. Content knowledge

Table 3. CK

Item	Mean	Standard Deviation
C1. My teacher has enough knowledge of English grammar.	4.02	0.798
C2. My teacher has a good pronunciation.	4.34	0.647
C3. My teacher teaches the class naturally in English.	4.05	0.731
C4. My teacher creates material that could enhance my learning.	4.16	0.746
C5. My teacher answers students' questions about English.	4.33	0.644

The results showed that students had a positive perception of their EFL teacher's knowledge. The average scores for all items were above 4, indicating that students generally agreed that their teacher possessed the necessary understanding of English grammar, pronunciation, and teaching skills to effectively teach the subject. This suggests that the teacher was able to effectively communicate knowledge in these areas to the students. The standard deviations were small, meaning that the responses were closely grouped around the average, indicating a high level of agreement among the students. This suggests that the students had a consistent view of their teacher's abilities and shared a common understanding of what makes a language teacher effective.

The highest mean score was for item C2, indicating that students valued their teacher's ability to speak English fluently and with good pronunciation. It was consistent with research that suggested that pronunciation was a crucial component of effective language teaching [23], as it could affect students' ability to understand and communicate effectively in the target language.

d. Technological Pedagogical Knowledge

Table 4. TPK

Item	Mean	Standard Deviation
D1. My teacher uses technology to motivate me to learn.	3.77	0.903
D2. My teacher uses technology to explain clearly.	3.33	0.920

D3. My teacher uses technology to interact more with us.	3.44	0.906
D4. My teacher uses technology to facilitate teaching activities.	3.54	0.824
D5. My teacher uses technology that fits his teaching method.	3.70	0.853

The results suggested that students positively perceived their EFL teacher's technological pedagogical knowledge using the TPACK framework. The mean scores for all items were above 3, indicating that students generally agreed that their teacher had the necessary knowledge and skills to integrate technology into their teaching effectively and meaningfully.

The standard deviations were relatively small, which indicated that the responses were tightly clustered around the mean, suggesting a high level of agreement among the students. Students perceived their EFL teacher to have good technological pedagogical knowledge using the TPACK framework. It was as previous study [24] found that students perceived the teacher as having sufficient knowledge of teaching the subject matter.

The mean scores for all items in the scale were above 3, indicating that students generally perceived their EFL teacher to have had good technological pedagogical knowledge using the TPACK framework. It was a positive finding, as TPACK was a framework that emphasized the importance of integrating technology into teaching to support student learning outcomes.

e. Technological Content Knowledge

Table 5. TCK

Item	Mean	Standard Deviation
E1. My teacher uses digitized teaching materials so that I can learn vocabulary better.	3.57	1.001
E2. My teacher uses digitized teaching materials so I can learn grammar better.	3.24	0.955
E3. My teacher uses digitized teaching materials so I can read better.	3.34	0.941
E4. My teacher uses digitized teaching materials so I can speak better.	3.20	0.938
E5. My teacher uses digitized teaching materials so that I can understand the target culture (foreign culture) better.	3.09	0.987

The mean scores for all items in the scale were above 3, indicating that students generally perceived their teacher to have good technological content knowledge (TCK). It was a positive finding, as TCK was a vital component of the TPACK framework, which emphasized the importance of integrating technology into teaching to support student learning outcomes.

The standard deviations for all items were relatively small, indicating a high level of agreement among students in their perception of their teacher's technological content knowledge. It was a positive finding, as it suggested that students had a consistent view of their teacher's abilities and that there was a shared understanding of what constituted effective use of digitized teaching materials in language teaching.

f. Pedagogical Content Knowledge and Technological Pedagogical Content Knowledge

Table 6. PCK and TPACK

Item	Mean	Standard Deviation
F1. My teacher gives me material that allowed me to understand English better.	3.74	0.757
F2. My teacher gives me quizzes (questions) that allowed me to practice more in English.	3.79	0.787
F3. My teacher gives me games that allowed me to practice more in English.	3.75	0.810
F4. My teacher gives me group activities that allowed me to use more English.	3.31	0.877

F5.	My teacher provides discussion activities that allowed me to use more English.	3.92	0.708
G1.	My teacher teaches with appropriate strategies through the use of various technologies.	3.28	0.853
G2.	My teacher gives us the opportunity to practice English with appropriate strategies through the use of various technologies.	3.41	0.862
G3.	My teacher gives us the opportunity to use English with appropriate strategies through the use of various technologies.	3.33	0.870
G4.	The way my teacher teaches English by computer is fascinating.	3.24	0.891
G5.	The way my teacher teaches English by computer helped me a lot in my English learning.	3.33	0.907

The results suggested that students had a positive perception of their teacher's TPACK. The mean scores for all items ranged from 3.24 to 3.92, indicating that students generally agreed that their teacher had the necessary knowledge and skills to integrate technology into their teaching in an effective and meaningful way. As found in the study [24] Indonesian EFL teachers had enough technological knowledge, according to students, to teach English.

The mean scores for all items in the scale were above 3, indicating that students generally perceived their teacher to have had a good level of TPACK. This was a positive finding, as TPACK was a key component of effective technology integration in teaching, which could enhance student learning outcomes.

Most students generally agreed on their perception of their teacher's TPACK, as indicated by small to moderate standard deviations. However, when it came to item F4, there was a wider range of responses. This suggests that some students had different experiences and preferences regarding group activities. Teachers may need to find ways to enhance the effectiveness and engagement of group activities for all students.

The results indicated that students appreciated a range of teaching materials and strategies that aided their English language learning. Specifically, items F1 to F5 explored various types of teaching materials, including those that enhanced English comprehension, facilitated additional practice through quizzes, fostered practice through educational games, encouraged the use of English in group activities, and promoted meaningful English usage through discussion activities. On the other hand, items G1 to G3 delved into the strategies employed by teachers to incorporate technology into their instruction, such as utilizing effective strategies and technologies for teaching, offering opportunities for English practice and application, and so on.

4   CONCLUSIONS

The study highlighted the importance of developing their TPACK to enhance student learning outcomes. Teachers needed to continue to keep up with the latest technological advancements and ensure that they were using technology effectively to support student learning outcomes. Furthermore, the study suggested that students were learning effectively from their teachers' use of technology, which could help them improve their engagement, motivation, and learning outcomes.

This study employed three classes in one secondary school to collect the data. However, it was important to note that these results were based on self-reported perceptions of the students, and further research may have been needed to validate these findings. These results were based on the perceptions of a specific group of students and may not necessarily have been generalizable to other contexts or populations. Therefore, it might have been useful to conduct further research to validate these findings and to explore other factors that might have influenced students' perceptions of their teacher's TPACK.

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