

# English Teachers' Perceptions of Technological Pedagogical and Content Knowledge (TPACK) and Its Application in English Language Teaching: Post-COVID-19

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**Abstract:** This research explores the evolving perceptions of English teachers regarding the integration of Technological Pedagogical Content Knowledge (TPACK) and its application in English Language Teaching (ELT) in the post-Covid-19 educational landscape. Using a mixed methods approach, this research draws from educators' experiences in innovatively incorporating TPACK to increase student engagement, facilitate personalized learning experiences, and improve communication. A total of seventeen English teachers in different schools in North Sumatra, Medan. Findings highlight the influence of TPACK on pedagogical strategies in response to the dynamic post-pandemic educational landscape.

**Keywords:** English language teaching, Post Covid19, Teacher's perceptions, TPACK.

Significant modifications have occasionally been made to Indonesia's educational system, particularly during the COVID-19 epidemic. The transition from offline to online learning systems over the past two years has necessitated adaptation on the part of all parties involved in education, regardless of age. In comparison to the previous system, there have also been significant changes in teaching patterns and methodologies. Teachers now need to be able to use a variety of learning programs on Android devices in order to help students in participating in the learning process, even if they previously used markers and wrote on the blackboard. While schools have garnered much of the media's attention during the COVID-19 pandemic, teacher preparation programs have received less notice. Because of the shift in everyday health practices, dependence on technology, and other pandemic-related variables, higher education institutions are having to rethink how they prepare teachers (Boivin & Welby, 2021).

Simultaneously, teaching English in the midst of a pandemic necessitates that teachers be more innovative in their approach to creating learning materials and in their use of science and technology in the classroom. To meet learning objectives, the teaching and learning process must function effectively. Higher education instructors benefit greatly from this situation, which encourages those who were previously hesitant to

incorporate learning technology into their curricula or employ online learning platforms and tools. Furthermore, instructors who are at ease and well-versed in online learning procedures and technologies have to reevaluate their course designs and come up with fresh ideas for utilizing online learning platforms and solutions to enhance online delivery techniques (Johnson et al., 2020).

In the meantime, the societies in which we live have changed, bringing about shifts in the population, unpredictable modifications to laws and regulations, and the rise of opposing ideologies. All of this takes place inside a complicated framework that is still being completely understood today (Campbell, 2020). Consequently, there is a rise in the obligations imposed on educators, educational stakeholders, and educational institutions. Traditional ideas about what teachers and educators should be doing tend to center on concerns related to curriculum, instruction, student assistance, and the execution of policy changes in education. Over time, as the political and social landscapes at the national and international levels shift, so do expectations about the role of education (Aslan et al., 2021). The COVID-19 pandemic has resulted in a rise in the workload for educators and school administrators.

The teacher's interpretive evaluation of the language learning and teaching process is also a part of the pedagogical perspective (Hossain et al., 2021;

Ní Dhuinn & Ann Garland, 2022). Administrative rules, coaching opportunities, life experience, and background all have an impact on these presumptions. Modifications to administrative rules, for instance, cannot be compromised since they call for work and commitment. The way that educators perceive the mechanics of learning is one important viewpoint. It frequently takes longer to adjust to changes in education policy (Campbell, 2020). Studies on the effects of specific policies have demonstrated that they can have a negative impact on education; nevertheless, there is a dearth of research on the programs and pedagogical initiatives that can either mitigate or increase these disparities in general (Ní Dhuinn & Ann Garland, 2022).

As a fundamental component of educational mandate plans to update and modernize the curriculum, the Application of Pedagogical and Technological Content Knowledge (TPACK) is becoming more and more common in classroom teaching environments (Zhang & Chen, 2022). Technology-related knowledge areas including technology knowledge (TK), technology content knowledge (TCK), technology pedagogy knowledge (TPK), and technology pedagogy content knowledge (TPACK) were covered by (Koehler & Mishra, 2005), who also introduced TPACK. Pedagogical knowledge (PK), content knowledge (CK), and pedagogical content knowledge (PCK) are examples of knowledge areas that are unrelated to technology. Regulations are emphasizing more and more the use of TPACK in the teaching of English as a foreign language (EFL), particularly in light of the generation that has grown up with technology platforms. Its great adaptability for non-native English speakers, teachers, and students to comprehend English in a basic English-speaking situation is another factor contributing to its prominence. This creates chances to enhance communicative methods in language instruction and create rich environments in native tongues.

However, there have been many moving parts that make the actual application of TPACK in an educational setting difficult (Anderson & Kyzar, 2022; Syamdianita & Cahyono, 2021). The severe Covid-19 problem has compelled the educational system to meet educational requirements, reassess how classes and courses are conducted, analyze how students are assessed, and make immediate reforms (Akyuz, 2018; - Lie et al., 2020). How teachers use Information and Communication Technology (ICT) in the classroom will be greatly influenced by personal characteristics like technology

acceptability, academic success, and technical skills and competences. One of the main obstacles to teachers adopting technology is frequently found to be their perceptions and awareness (Demeshkant et al., 2022; Karchmer-Klein & Konishi, 2023).

Seeing the increasing development of technology now and in the future. It is important to continue to carry out research on technology in learning, one of which is TPACK. This opinion is supported by research (Mulyanto & Yoenanto, 2022) which explains that one concept that explains how to integrate technology to increase the effectiveness of teaching and learning activities is TPACK. Technological Pedagogical Content Knowledge (TPACK) is a framework that contains ways to integrate technology in learning.

The main aim of this research is to show teachers' views on the implementation of TPACK, as seen from the EFL teacher's perspective. To this end, we ask the following critical research question:

1. What are the perceptions of English language teachers regarding the integration of Technological Pedagogical Content Knowledge (TPACK) in their teaching practices?
2. What factors influence English language teachers' decision to apply Technological Pedagogical Content Knowledge (TPACK) in their instructional practices?

The concept of Technological Pedagogical Content Knowledge (TPACK) was introduced by Mishra and Koehler in 2006. TPACK is a framework which contains the integration of knowledge and skills regarding material (content), pedagogy and technology.

## METHOD

### Research Design

The research method used in this research is a qualitative approach with case studies. As qualitative research, case studies can provide researchers with the opportunity to explore and describe phenomena in context using data sources (Yin, 2018). Because the aim of this research is to find out teachers' views on the application of Pedagogical Technology and Content Knowledge (TPACK) in English language teaching. In this investigation, the real-world situation is the English teacher's experience in understanding and applying his pedagogical knowledge.

## **Research Participant**

The primary goal of this study is to learn firsthand how EFL teachers view the application of pedagogical technology and content knowledge (TPACK). The study included seventeen instructors, ages 24 to 35 on average, who worked in different schools in North Sumatra, Medan. This group was selected on the basis of their accessibility, desire to engage, and TPACK experience. Every recruited EFL teacher has prior experience incorporating TPACK into their lesson plans. English study teachers were among the inclusion criteria.

The process of finding participants starts with reaching out to them via the messaging app WhatsApp. From there, you can explain to them why the research is being done, what it will entail, how the data will be collected, and that they can withdraw from the study at any moment without putting others and themselves at danger. This is done in order to perform research in accordance with ethical guidelines. For three months, the study was conducted on campus, gathering data via in-person interviews and online surveys.

## **Data Collection and Analysis**

This study used questionnaires and in-depth interviews as two distinct data gathering approaches to accomplish triangulation of data sources. The two primary methods used in this study to collect data were questionnaires and one-on-one interviews with teachers. English teachers' opinions of the comprehension and use of pedagogical technology in English language instruction were assessed through the administration of a questionnaire with both open-ended and closed-ended answers once. Interviews were conducted to gather more information and elucidate the responses provided by participants in the questionnaire after the utilization of the questionnaire method and the interview method in research. The duration of each interview ranged from twenty-five to thirty minutes. audio interviews conducted with permission from the participants. This procedure confirms or denies underlying evidence regarding the perceived shift in instructors' comprehension of their pedagogical technology knowledge. Content Analysis was used to analyze the data. That is, participant answers to open-ended questionnaires and interview questions were contextually examined by reading each response in its entirety and underlining words, phrases, or concepts that were thought to be pertinent to the topic under discussion. The goal of

this study is to gather information regarding how English teachers view the application of TPACK.

## **RESULTS AND DISCUSSION**

### **Results**

In terms of theory, teachers integrate technical (T), pedagogical (P), and content (C) knowledge in the learning setting. This is known as TPACK (technical Pedagogical Content Knowledge). To evaluate how well teachers can use technology to teach specific subjects, it is essential to comprehend and measure TPACK. Researchers in the field used teacher interviews to measure TPACK levels, and their findings were based on those data. Assessing teachers' TPACK proficiency is a critical task in determining how well-equipped they are to deal with the demands of contemporary education and technological advancements. Appropriate tools and techniques to assess teacher TPACK are required, given the speed at which technology is developing and the ways in which teaching methods are changing. In this sense, technology proficiency is just one aspect of TPACK; another is the ability of educators to integrate technology with subject-matter expertise and pedagogical techniques to produce engaging and applicable learning opportunities.

### **Enhancing English Language Teaching Through Effective Integration of TPACK: Insights from Teachers' Perspectives The role of TPACK to enhanced English language instruction**

Teachers enhance students' learning by integrating pedagogical expertise, technology, and English subject knowledge. Leveraging technology, such as mobile apps, online platforms, or specialized software, allows for more engaging learning activities. TPACK enables educators to tailor lesson plans to students' needs, fostering a deeper understanding of English. Proficient English teachers can create relevant materials and assess student progress effectively using technology. Ultimately, TPACK aims to equip English language teachers with a creative, efficient, and current approach to teaching.

Participants who were English teachers responded favorably to the idea that TPACK can enhance students' English language proficiency. P1 emphasized the significance of Technology, Pedagogy, and Content Knowledge (TPACK) in educational settings, particularly for English

language learners. The use of technology in the classroom not only sparks students' interest but also creates a more engaging environment. One way that TPACK can significantly enhance learning is when teachers employ technology content knowledge (TCK) to present material in an efficient manner.

"In my opinion, TPACK is crucial to education, particularly in English classes. I use technology to make information easier for my students to understand and to improve learning in the classroom." (P1)

Furthermore, P2 emphasized how crucial technology is to enhancing English language instruction, particularly for students. Students are better able to comprehend and retain the lesson when they employ technology, such as English-language stories, images, and videos. TPACK improves English language learning and makes it easier for pupils to understand the material.

"In my opinion, TPACK greatly enhances the acquisition of the English language by using technological tools like stories, images, and videos to assist students comprehend and memorize the language." (P2)

P3 increases knowledge in areas where TPACK is now ingrained in daily life and where technology's ability to improve learning is becoming more and more significant. Technology is a useful tool that can enhance learning rather than merely being added to it. It has been demonstrated that using a variety of applications, online resources, and multimedia can increase student engagement and make learning more dynamic. Additionally, children can learn in a more authentic and pertinent setting thanks to technology, which supports the contextual development of their language abilities. As a result, we will examine in more detail how technology enhances learning in this piece, particularly when it comes to language acquisition.

"Technology plays a critical role in education, in my opinion. It is more participatory with apps and multimedia, which aids in the language development of kids." (P3)

The positive replies from the participants on the contribution of TPACK to better English language learning lead to the conclusion that a successful blend of pedagogy, technology, and English content knowledge has a major influence on the learning process. The significance of technology in education was acknowledged by the participants, who saw it as a tool for creating dynamic and captivating activities as well as an efficient way to distribute information. Participants also emphasized

how TPACK enables educators to create engaging and pertinent lesson plans and modify their teaching strategies in response to changing student demands. Therefore, the participants' collective answer demonstrates that the role of TPACK offers a strong foundation for creative, efficient, and up-to-date English language instruction. This highlights how crucial it is to use technology in the classroom in order to get the best possible learning results.

### **Enhancing English Language Learning: The Effectiveness of TPACK Integration**

The integration of TPACK (Technological Pedagogical Content Knowledge) in English language learning is highly effective. Combining technology, pedagogy, and English content leads to engaging and dynamic learning experiences. Utilizing applications, online platforms, and multimedia enhances the delivery of material, catering to diverse learning styles. TPACK enables teachers to adapt methods and incorporate relevant contexts, addressing individual student needs and boosting engagement. This approach fosters holistic language skill development, including speaking, listening, reading, and writing. Consequently, implementing TPACK not only enhances the learning experience but also improves learning outcomes sustainably. As P1 agrees, technology in the classroom enhances effectiveness, increasing student engagement and reducing boredom.

"As an educator, I concur with those who believe that the use of technology in the classroom enhances student learning. Pupils avoid boredom and become engaged." (P1)

As an educator, P2 admitted that students' acquisition of English is significantly aided by the proper use of technology. Technology can be a useful tool in raising the standard of English language instruction in the classroom by giving students access to a variety of materials, promoting personalized learning, and raising student engagement through creative teaching strategies. P2 concurs that using technology in the classroom seems to be an excellent way to learn. Pupils stop being bored and start to become engaged. To get the best outcomes, P2 emphasized the significance of striking a balance and making sure that technology is properly integrated into the educational setting.

"With its wide range of materials and cutting-edge techniques, technology actually aids pupils in their English language study. It is crucial to integrate it with the educational setting in a balanced way." (P2)

Then, in contrast to P2, P3 said that technology plays a critical role in the advancement of education. P3 contends, however, that technology shouldn't be the sole major source of information used to support students' learning. We must remember that students still rely significantly on physical learning tools even though technology is now an essential component of the modern learning process. This demonstrates that rather than taking the place of conventional learning tools, technology should be viewed as an auxiliary tool that enhances students' educational experiences. We can guarantee that students have effective and efficient access to a range of learning resources by adopting a balanced strategy that balances the use of technology and physical resources.

“While technology has a place in education, it cannot serve as the primary source of knowledge. Although technology might help, physical resources are still necessary for students.” (P3)

The outcomes of the interviews demonstrate how successful TPACK use is at improving student learning. According to P1, who is backed up by P2, pupils get engaged and don't become bored when TPACK is used. Though there are differing opinions, such as P2's assertion that learning resources cannot be replaced by technology as a supporting facility.

### **Factors influencing the application of TPACK in the instruction of English**

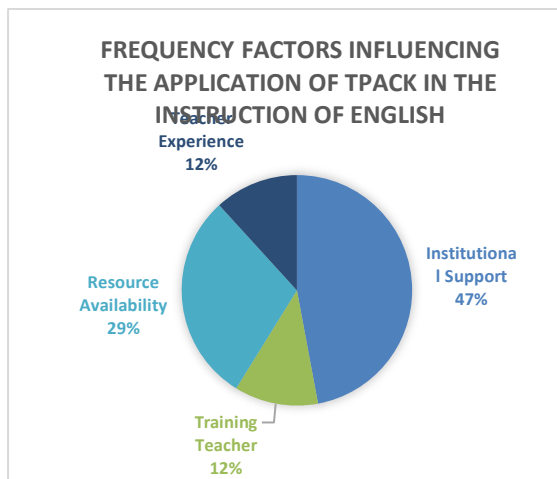
Many important aspects, such as institutional support, teacher preparation, resource availability, and teacher experience, have a significant impact on the use of Technology Pedagogy and Content Knowledge (TPACK) in English language education. One of the key elements in the success of TPACK integration is the support of educational institutions, such as schools or other educational institutions. Institutions must offer robust support in the form of sufficient guidelines, materials, and technology infrastructure to enable educators to create and execute TPACK successfully. Moreover, teacher preparation plays a critical role in developing the knowledge and abilities required to incorporate technology into English language instruction. Teachers who receive high-quality training will be better able to

comprehend the idea of TPACK and create effective plans for implementing it in educational settings.

Moreover, the implementation of TPACK in English language instruction is influenced by the accessibility of resources like internet, software, and hardware. Teachers will be able to employ a greater variety of digital tools and resources in their teaching with greater freedom in schools that have an acceptable technology infrastructure. However, there may be difficulties in successfully integrating technology into English language learning in settings with limited resources of this kind. The implementation of TPACK is significantly influenced by teacher expertise as well. Teachers that have used technology to teach English before are typically more self-assured and equipped to handle any obstacles that may come up. Teachers can use this expertise to help them create tactics that are tailored to the needs and traits of their pupils. Teachers who are new to integrating technology, however, can get past these obstacles with the support of mentors and opportunities for teamwork.

If teachers want to reuse tools and integrate them into their teaching, they need a special type of knowledge called Technological Pedagogical Content Knowledge (TPACK). Lack of knowledge about core pedagogical issues, such as students' understanding, their developmental trajectories, conceptual misunderstandings they may have, and how best to convey ideas to individual students. Quality teaching is the transformation of material and teaching actions with full discipline. Teaching is not a process that requires several instructional techniques and their application. It arises from thinking deeply about the nature and discipline and principles with strategies to help students learn them over time. In other words, PCK is a type of knowledge that goes beyond knowledge about the material or about pedagogy taken separately. Teaching requires transforming material in a way that makes it accessible to students. Rapid changes in technology have added new types of knowledge, teachers must integrate with pedagogy and material knowledge (Basyah et al., 2021)

Overall, TPACK application in English language instruction is influenced and influenced by a variety of factors, including teacher experience, resource availability, institutional support, and teacher training.



**Figure 1. Frequency Factors Influencing The Application of TPACK In The Instruction of English**

The following questionnaire's results illustrate the variables that affect a teacher's decision to use TPACK in English language instruction. It seems that different people place different amounts of importance on the influencing elements when it comes to using TPACK in English language instruction, based on the results derived from the responses of 17 participants. The majority of respondents—eight individuals, or 47% of the total—emphasized the significance of institutional support as the primary reason. Policies, funding, infrastructure, and knowledge of the significance of integrating technology in English language

instruction are all examples of institutional assistance. In the meantime, two respondents—representing 12% of the sample—emphasized the significance of teacher preparation. With the right training, educators can gain a deeper grasp of TPACK and acquire the useful skills needed to use technology into English language instruction. Furthermore, five respondents, accounting for 29% of the sample, highlighted the significance of resource accessibility, encompassing technology, hardware, software, and pertinent educational materials. The foundation for using technology in the context of learning English is the availability of sufficient resources. Conversely, two responders, accounting for 12% of the sample, highlighted instructor experience as the primary determinant. The degree to which teachers are proficient in incorporating TPACK might be influenced by their prior experience with employing technology in English language instruction.

Conclusion, although different aspects are given varying amounts of weight, it is generally agreed that institutional support, teacher preparation, resource accessibility, and teacher experience are all crucial and interconnected components of TPACK implementation in English language instruction. These four elements working together can offer a strong basis for the successful integration of technology into English language instruction across a range of educational settings.

**Table 1. TPACK Types That EFL Teachers Frequently Employ**

No.	Type of TPACK	Example of Use	Application
1.	Pedagogical Content Knowledge	Choose educational resources and design instructional strategies based on the aptitude of the students.	Quizizz: To improve student comprehension, create quizzes with a variety of question formats, such as multiple choice, short answer, and image-based questions. Wordwall: Use it to test comprehension, reinforce ideas, and visually represent the content while achieving learning objectives.
2.	Content Knowledge	acquiring vocabulary and grammar to help students comprehend more.	Duolingo: This well-liked and useful program is great for language learning. It provides thorough language instruction using engaging and entertaining teaching techniques. TED-Ed offers captivating animated educational videos covering a range of issues related to science, math, languages, and other areas. These movies frequently concentrate on comprehending complex ideas.
3.	Pedagogical Knowledge	Utilize efficient, diverse learning techniques and evaluate the development of your students' learning.	Put in place a collaborative learning paradigm where students complete projects or tasks in groups. Instructors can help students apply cooperative learning strategies to improve their comprehension of the course content,

4.	Technological Knowledge	Make a learning game or utilize an application to gauge how well students are learning.	such as role-playing, group discussions, and collective reflection. Make use of game components in your education by creating your own educational games with a platform like Scratch or by using game-based learning platforms like CodeCombat or Minecraft Education Edition. This can assist youngsters improve their kindergarten abilities in addition to making learning more enjoyable.
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Within the framework of Pedagogical Content Knowledge (PCK), educators are accountable for creating successful teaching strategies and choosing educational resources that meet the requirements and skill levels of their students. For instance, teachers can design quizzes with a range of question formats, such as multiple choice, short answer, and image-based questions, by utilizing an app like Quizizz. These variants allow professors to modify their teaching strategies and guarantee that pupils are understanding the material. Aside from that, Wordwall is an effective tool for assessing comprehension, presenting information in an engaging manner, and reinforcing concepts. Instructors can utilize Wordwall to construct a range of interactive exercises, such memory games or word boards, that will help students become more engaged and get a deeper knowledge of the material.

Meanwhile, programs like TED-Ed and Duolingo can assist students in broadening their knowledge on a variety of topics in terms of Content Knowledge (CK). For instance, Duolingo offers thorough language training combined with engaging and entertaining teaching techniques. Students can effectively and entertainingly enhance their vocabulary and grammar with this software. However, TED-Ed offers interesting animated educational movies covering a wide range of topics in the fields of physics, math, languages, and many other areas. These films assist students expand their minds on a variety of topics in addition to giving them a thorough comprehension of concepts.

Teachers must monitor students' learning progress and use a variety of successful teaching tactics at the Pedagogical Knowledge (PK) level. Using a collaborative learning paradigm, where students collaborate in groups to finish a particular assignment or project, is one way to accomplish this. Under the leadership of their teachers, students can enhance their comprehension of the lecture content by utilizing cooperative learning strategies including group discussions and role-playing exercises.

Lastly, teachers can use technology to make learning more engaging and participatory by incorporating it into the framework of Technological Knowledge (TK). For instance, students can learn while having fun by utilizing a game-based learning platform like CodeCombat or Minecraft Education Edition. This not only increases the enjoyment of learning but also fosters the technological proficiency of kindergarteners.

### **Discussion**

The study's conclusions show that most participants had a high degree of ongoing technological knowledge improvement. The application of TPACK aids EFL teachers in honing their abilities to provide a variety of crucial elements of learning, such as motivation and participation, assessment, feedback, adaptability, and communication between the home and the school (Tseng et al., 2022). The research's conclusions are consistent with those of Drajadi et al. (2018), who noted that technology helps educators encourage multimodal instruction for pupils. Since knowledge is gained from a variety of learning sources, learning in several modes boosts student motivation.

Participants demonstrated confidence in real-world teaching scenarios and lesson plans, according to the findings of interviews on their technology knowledge. This runs counter to study by Demeshkant et al. (2022), which indicates that teachers who teach with diverse demographic characteristics have significantly variable levels of faith in integrated technology. Teachers in this study showed assurance when using technology. Teachers are encouraged to use technology not because they are confident in themselves, but rather because it is simple to use and there are sufficient tools available.

Teachers have had to assist learners ever since the pandemic, which has forced them to become more technologically literate. Since mobile applications are conveniently accessible learning resources for students participating in distance

learning, teachers in this situation experiment with a variety of them to achieve their teaching objectives. According to Hossain et al. (2021), there is a high and significant correlation between the TPACK construct and continuing intention in teachers who regularly utilize mobile devices. Accordingly, Hsu & Chen (2023) also noted that professors use mobile devices quickly during distance learning, which aids in improving student performance.

From the standpoint of technology content knowledge (TCK), they give students access to digital instructional resources that help them absorb the information more effectively. They provide pupils the tools they need to use technology and digital resources to address actual obstacles. They conduct research on the subjects they teach using specialist software, and they incorporate ICT into their lesson plans by utilizing pertinent technology (such as multimedia materials and simulations). Teachers' views of the value of technology integration activities and their actual implementation are not aligned, and there are three key characteristics that keep teachers from fully embracing technology integration (Scull et al., 2020). The necessity of incorporating technology into instructors' lesson plans, the discrepancy between teachers' views and real integration of technology, and participants' beliefs are the three key elements (Hsu & Chen, 2023; Karchmer-Klein & Konishi, 2023). They employ technology tools to carry out explanations when working with technological pedagogical knowledge (TPK). They use cutting edge technologies to expose their students to real-world scenarios. They use technology to communicate with pupils more. They urge students to utilize the technology that is accessible to them in order to create a variety of knowledge representations by using it to improve learning activities. The same thing also occurred in the studies conducted by Ní Dhuinn & Ann Garland (2022) and Syamdianita & Cahyono (2021), which found that by giving students multiple opportunities for involvement and assignments that they could complete synchronously or asynchronously, they were able to feel at ease and confident enough to participate, express themselves, and contribute to the module. To help their pupils become more proficient in the language, teachers look for learning apps that offer scenarios that are close to real-world learning scenarios. This is consistent with the argument made by Drajadi et al. (2021) that applying learning that describes real-world tasks and presents authentic material to explain phenomena in natural

contexts can improve student achievement because it allows students to practice applying the concepts they have learned in real-life contexts.

They provide a thorough explanation of TPACK, including how to use different technologies in the classroom to combine the right resources and learning approaches. Assignments that use ICTs (such as web-based resources and simulations) aid in students' comprehension of the subject matter. Their experience with using a laptop or smartphone to impart material has probably had an impact on this. This is consistent with the findings of Aniq et al. (2022), who found that because teachers participated in multimedia training forums to explore creative uses of new technologies to enhance learning outcomes, they are used to giving equitable access to digital tools and resources for language learning. This guides our initiatives to promote digital communication tools in learning environments (Zhang & Chen, 2022).

Furthermore, COVID-19-related policy uncertainty creates a conundrum that lowers knowledge in non-technological fields. Teachers in educational institutions experience anxiety due to uncertainty about the quality of their content knowledge, pedagogical knowledge, and pedagogical content knowledge (Aslan et al., 2020). This is in line with the findings of Anderson & Kyzar (2022), which showed that different degrees of student participation, student contributions to both online and offline module components, and the overall design of the module all had a favorable effect on academic outcomes and student motivation.

Teachers' anxiety arises from adjusting to two years of virtual teaching, lacking student connection, and needing to replace classroom instruction with independent study. Although technology is used for productive debates and periodic tasks, active group discussions are not emphasized. This study highlights the need for long-term changes in education policy to address evolving challenges and support teachers' adaptation.

Government initiatives for equal teacher preparation and high-quality ICT infrastructure should precede new policies. Cross-referencing instructors' opinions can inform future policy decisions. However, the study has limitations, including uncertainty about predicting future instruction and the broad applicability of techniques used. Future research should focus on self-reported TPACK, objective measures, and ICT integration

assessments, considering variations based on introductory courses.

In summary, the study indicates significant improvements in EFL teachers' TPACK during remote teaching, particularly in addressing challenges posed by COVID-19. Students actively seek answers using mobile studying apps and other technologies. TPACK creation involves not only technology but also subject expertise, learning methods, and broader educational skills.

## CONCLUSION

This research sheds light on the potential and difficulties that educators face in the context of the evolving educational environment, particularly with regard to teaching English language after COVID-19. English instructors' perspectives on and applications of technological pedagogy content knowledge (TPACK) have significantly changed, with a focus on the necessity of incorporating technology into instructional strategies. Adapting to new technology, closing the digital divide between pupils, and incorporating TPACK into the curriculum seamlessly are some of the challenges teachers face. Technology offers chances for improved communication, more student engagement, and more individualized learning experiences despite these drawbacks. Prominent TPACK experts stress the significance of ongoing technology advancement adaptability. Legislators need to acknowledge that technology is becoming an increasingly important part of education and help teachers by giving them access to new technologies and resources for professional development. Subsequent studies might concentrate on the particular difficulties English teachers encounter when integrating TPACK after COVID-19 and the long-term effects of this integration on student outcomes.

## REFERENCES

- Akyuz, D. (2018). Measuring technological pedagogical content knowledge (TPACK) through performance assessment. *Computers & Education*, 125, 212–225. <https://doi.org/10.1016/j.compedu.2018.06.012>
- Anderson, S. E., & Kyzar, K. B. (2022). Between School and Home: TPACK-in-Practice in Elementary Special Education Contexts. *Computers in the Schools*, 39(4), 323–341. <https://doi.org/10.1080/07380569.2022.2086738>
- Aslan, S. A., Turgut, Y. E., & Aslan, A. (2021). Teachers' views related the middle school curriculum for distance education during the COVID-19 pandemic. *Education and Information Technologies*, 26(6), 7381–7405. <https://doi.org/10.1007/s10639-021-10587-z>
- Boivin, J. A., & Welby, K. (2021). Teaching Future Educators During a Global Pandemic. *IAFOR Journal of Education*, 9(2), 25–36. <https://doi.org/10.22492/ije.9.2.02>
- Campbell, P. (2020). Rethinking professional collaboration and agency in a post-pandemic era. *Journal of Professional Capital and Community*, 5(3/4), 337–341. <https://doi.org/10.1108/JPC-06-2020-0033>
- Demeshkant, N., Trusz, S., & Potyrała, K. (2022). Interrelationship between levels of digital competences and Technological, Pedagogical and Content Knowledge (TPACK): a preliminary study with Polish academic teachers. *Technology, Pedagogy and Education*, 31(5), 579–595. <https://doi.org/10.1080/1475939X.2022.2092547>
- Hossain, S. F. A., Nurunnabi, M., & Hussain, K. (2021). Continuous mobile devices usage tendency in the TPACK-based classroom and academic performance of university students. *Technology, Pedagogy and Education*, 30(4), 589–607. <https://doi.org/10.1080/1475939X.2021.1933160>
- Hsu, L., & Chen, Y.-J. (2023). Hierarchical Linear Modeling to Explore Contextual Effects on EFL Teachers' Technology, Pedagogy, and Content Knowledge (TPACK): The Taiwanese Case. *The Asia-Pacific Education Researcher*, 32(1), 1–13. <https://doi.org/10.1007/s40299-021-00626-1>
- Johnson, N., Veletsianos, G., & Seaman, J. (2020). U.S. Faculty and Administrators' Experiences and Approaches in the Early Weeks of the COVID-19 Pandemic. *Online Learning*, 24(2). <https://doi.org/10.24059/olj.v24i2.2285>
- Karchmer-Klein, R., & Konishi, H. (2023). A mixed-methods study of novice teachers' technology integration: Do they leverage their TPACK knowledge once entering the profession? *Journal of Research on Technology in Education*, 55(3), 490–506. <https://doi.org/10.1080/15391523.2021.1976328>
- Ní Dhuinn, M., & Ann Garland, S. (2022). Lockdown lessons learned. Reconceptualising a Sociology of Education module in ITE using a TPACK framework, optimising pedagogy, enhancing student outcomes through the provision of inclusive and accessible opportunities for learning. *Irish Educational*

- Studies*, 41(1), 257–268.  
<https://doi.org/10.1080/03323315.2021.2023034>
- Nurfitri, N., Regina, R., & Yulian, R. (2020). English teacher's difficulties in designing lesson plan based on Indonesian 2013 curriculum. *JELTIM (Journal of English Language Teaching Innovations and Materials)*, 2(2), 85.  
<https://doi.org/10.26418/jeltim.v2i2.39078>
- Scull, J., Phillips, M., Sharma, U., & Garnier, K. (2020). Innovations in teacher education at the time of COVID19: an Australian perspective. *Journal of Education for Teaching*, 46(4), 497–506.  
<https://doi.org/10.1080/02607476.2020.1802701>
- Syamdianita, & Cahyono, B. Y. (2021). The EFL pre-service teachers' experiences and challenges in designing teaching materials using TPACK framework. *Studies in English Language and Education*, 8(2), 561–577.
- Tseng, J.-J. (2016). Developing an instrument for assessing technological pedagogical content knowledge as perceived by EFL students. *Computer Assisted Language Learning*, 29(2), 302–315.  
<https://doi.org/10.1080/09588221.2014.941369>
- Tseng, J.-J., Chai, C. S., Tan, L., & Park, M. (2022). A critical review of research on technological pedagogical and content knowledge (TPACK) in language teaching. *Computer Assisted Language Learning*, 35(4), 948–971.  
<https://doi.org/10.1080/09588221.2020.1868531>
- Yin, R. K. (2018). *Case study research and applications: Design and methods (6th ed.)*. Thousand Oaks, CA: Sage.
- Zhang, M., & Chen, S. (2022). Modeling dichotomous technology use among university EFL teachers in China: The roles of TPACK, affective and evaluative attitudes towards technology. *Cogent Education*, 9(1).  
<https://doi.org/10.1080/2331186X.2021.2013396>