

Investigation of Hospitality and Business School English Instructors' TPACK in the Online Learning Context

Ni Komang Punia Antari¹⁾, Made Hery Santosa²⁾, Putu Tika Virginiya³⁾

^{1) 2)} Universitas Pendidikan Ganesha, Indonesia

³⁾ Politeknik Negeri Bali, Indonesia

SUBMISSION TRACK

Submitted : 10 October 2023
Accepted : 24 November 2023
Published : 25 November 2023

KEYWORDS

TPACK, vocational college, challenges, blended learning

CORRESPONDENCE

E-mail: puniaantari@gmail.com
:

A B S T R A C T

The rapid growth of technology affects every aspect of our life, including education, and its use has become an essential part of the instructional process. This study aimed to investigate how TPACK is developed and applied throughout the instructional process of 12 English instructors in a Hospitality and Business School in Bali and what challenges are faced in integrating technology into their online learning context. Using a mixed-methods research design, the study utilized two instruments: a survey and an open-ended interview. Prior to data collection, instruments were evidenced to be valid and reliable ($\alpha=.98$). The result shows that the TPACK of English teachers at the Hospitality and Business School was categorized as "good". This means that the instructors have developed and applied their TPACK competency well in all domains including TK, CK, PK, PCK, TCK, TPK, TPACK with the mean 4.4. The interview revealed three main challenges in integrating technology into their class: individual psychology, technical issues, and students' technology literacy. Policymakers should consider preparing instructors' TPACK in the vocational context be ready to cope with the limitations of an online learning environment with professional development activities.

Copyright © 2023 All right reserved

This is an open-access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license



Introduction

In English language teaching, teachers play vital roles as both a creator and an innovator in creating good learning atmosphere. As a result of this, being a teacher goes in line with being ready and staying updated with the global trend. The trends itself are changing as fast as the blink of an eye. Following trends should be taken into action if teachers do not expect their classes to get boring that would not fit with the students' needs. Therefore, teachers should be updated and catching up with today's trends. In the previous era, most of the teaching process will focus on the books as books were the only sources that teachers had. Also, the learning process mostly used a teacher-centered approach. Conversely, in this 21st-century era, technology has become an essential and vital part of education. Thus, teachers are required to be aware of the importance of technology. Angeli and Valanides (2014) state that the advent of new technologies has created professional development opportunities to learn how technology works. It means that there will always be an opportunity for the teacher to learn something new to develop and improve their competence. The use of technology is one of the indications. It affects human life in every aspect. Technology helps us in accommodation, communication, administration, and education. It helps us to work efficiently. However, in 2019, the spread of Coronavirus or widely known as COVID-19 affected the way everybody lives including the teaching and learning process in education sectors. Everything must be done from home, which makes the reliance on technology. Consequently, teachers are expected to create an innovative teaching strategy to teach online classes.

English language has been dominantly used in many different fields, including the tourism industry especially in Bali. Bali is well known as the island of paradise, which causes many tourists to visit Bali every year. This condition opens the opportunity for Balinese people to find tourism-related jobs. English language, as the most important soft skills should be strengthened and, in the tourism industry, English for Specific Purposes (ESP) is taught as the English teaching and learning objective. The term for teaching English to students who need it for a specific purpose, such as tourism, is called ESP (Wahyuni & Rozi, 2020), while some of other experts specify this as ETP (English for Tourism and Hospitality Purposes) (Zahedpisheh et al., 2017). ESP learners are mostly English savvy but have not yet learned the language to perform specific job-related functions and can teach various job skills (Lorenzo in Zahedpisheh et al. (2017)). Students are introduced to texts, genres, discourses, and communicative situations that they are likely to face in their professional lives in these vocationally oriented courses. They might use this to practice some of the communication techniques, specialized vocabulary, and pertinent concerns typical of their fields (Chovancová, 2014).

Students at tourism school are expected to be skillful in foreign language skills. It is because a foreign language, especially English, is the means of communication with foreign tourists and understanding cultural differences. Therefore, English lessons have become an essential subject for tourism students. For more than a decade, tourism schools have developed and grown constantly, especially in Bali. One of them is Elizabeth International Hotel & Business School that provides various majors in the tourism field, such as Food and Beverage Service, Culinary, Room Division/ Housekeeping, Front Office, etc. However, teaching vocational and regular school students is different and challenging in different ways (Suroyo & Faridi, 2018).

In this digital era, many platforms, applications, and software have been launched to help face this problem. The rapid and massive growth of technology motivates teachers to be able to use technology in their classes. According to Jan (2017), in the 21st century, technology has become essential to enhancing the learning process. It helps the teacher to create an enormous compelling teaching activity. Moreover, the students of Gen Z, “people who were born after 2000 and are often regarded as iGeneration or Digital Natives since they were grown up with mobile communication technologies and the internet (Demir & Sonmez, 2021)”, are effortlessly updating and getting lots of information using technology. Therefore, media technology becomes crucial for facing and handling the characteristics of students in this era (Fatimah & Santiana, 2017). The teacher plays an essential role as a facilitator because the teacher is not the only source of learning. Moreover, by using technology, students could get a lot of sources through e-books, videos, audio, etc.

Since the COVID-19 pandemic, the use of technology is enhanced in the teaching and learning process, and the vast use of Learning Management System (LMS) has been frequently used and are assumed to help the learning and classroom management both for on-site and online settings which also has been researched by many (Al Khoeri et al., 2021; Rymanova et al., 2015; Sumardi & Muamaroh, 2020; Tawalbeh, 2017; Triana et al., 2021). One of the LMS that has been widely used is Canvas Instructure. It is an online learning platform that allows teachers and students to exchange information and communicate with one another during a course (Santiana et al., 2021). There are currently many technological tools accessible to help teachers develop their instructional methods. Yet, teachers should be able to carefully select the proper technology and use it in the most efficient way possible to promote the efficacy of teaching and learning.

Agustini et al. (2019) state that TPACK is the current learning issue and trend. It is a new strategy and paradigm for digital educators to develop efficient technology directions (Koehler & Mishra in Kusuma (2021). Technology Pedagogy Content Knowledge (TPACK) paves a way to determine the correlation between technology, pedagogy and content knowledge among the English teachers on how they incorporate these technology tools in their English teaching (Elas et al., 2019). TPACK is an expanded approach which previously suggested by Shulman in 1986. The new approach was a combination of Pedagogical Content Knowledge and technology. According to Mishra and Koehler (2006), TPACK focuses on three essential aspects, namely content knowledge (CK), knowledge, pedagogy knowledge (PK), and technology knowledge (TK). It examines how to combine these aspects to create an integrated domain of knowledge. It includes PCK (pedagogical content knowledge, TCK (technological content knowledge, (TPK) technological pedagogical knowledge, and TPACK. Besides, TPACK also includes the knowledge of learning and teaching methods and how students' skills can help them face and solve the problem. Furthermore, students' prior knowledge of technology could help them build the existing knowledge, develop a new one, or enhance the old ones.

Many researchers have conducted a study on TPACK, for instance, Agustini et al. (2019) studied teachers' TPACK competence. This study analyzes the TPACK competencies of educational technology graduates graduating in 2016-2017 to support careers to become professional teachers. Data collection was obtained through questionnaires and in-depth interviews. The finding shows that the teacher's TPACK has reached 52.40, which suggests that educational technology graduates need to improve their TPACK capabilities. This is an essential competency that teachers need to improve to be professional in the era of Industry Revolution 4.0. Draji et al. (2018) have also conducted similar research entitled "Investigating English language teachers in developing TPACK and multimodal literacy." This study examines the implementation and perceptions of 100 pre-service and in-service teachers on technology, pedagogy, and content knowledge. The data was obtained through questionnaires. Results show that the teachers have literacy in TPACK. There are three main points of TPACK literacy: knowledge of educational content for multimodal literacy, technology education, and digital media tools. Another study was conducted by Mahdum (2015) entitled "Technological pedagogical and content knowledge (TPACK) of English teachers in Pekanbaru, Riau, Indonesia." The study investigated the TPACK of 74 in-service English teachers of senior high schools in Pekanbaru. The data collection was obtained through a survey. The finding reveals that the 74 in-service English teachers of senior high school in Pekanbaru had a good understanding of TPACK. As a result, the teachers could develop and use TPACK successfully.

Considering this, the present study is aimed at investigating how English teachers at Elizabeth International Hotel & Business School develop and apply TPACK for their teaching and what challenges they face in integrating technology into their English class especially in the use of Learning Management System (LMS) called Canvas Instructure.

Research Method

This study used a mixed-method research design. Mixed methods research (MMR), where quantitative and qualitative methods are combined in the collecting and analyzing of research data, is gaining increasing prominence and utility across a range of academic disciplines including applied linguistics and language teaching and learning (Riazi, 2017). The subjects of this study were 12 English instructors or teachers at Elizabeth International Hotel & Business School. The object of this study is (1) how

instructors apply and develop TPACK (Technological Pedagogical Content Knowledge) in their teaching process and (2) what problems they face in integrating technology into the class activity are.

The data was collected through a survey in a form of a questionnaire to measure the 7 TPACK subdomains of English instructors' self-assessments to investigate their instructional process in integrating technology into the online learning context. The questionnaire contains 45 items adapted from Schmidt et al. (2009) and Sahin (2011). The questionnaire contains 4 (CK), 14 (TK), 4 (PCK), 7 (PK), 9 (TPK), 4 (TCK), and 3 (TPACK) items. The answer to this questionnaire is based on a five-level Likert Scale. It consists of strongly disagree, disagree, neutral, agree, and strongly agree. This tool is aimed to measure the instructor's self-assessment of the 7 TPACK domains. Prior to data collection, instruments were evidenced to be valid and reliable ($\alpha=.98$). The data from this study were descriptively analyzed. Open-ended interview was conducted to the stakeholders in order to expose the challenges faced by the English instructors in integrating technology into their teaching and learning process.

Result and Discussion

Result

The investigation focused on how the English Instructors at Elizabeth International Hotel & Business School developed and applied TPACK throughout their instructional process and the challenges they faced in integrating technology into their classroom. Based on the data collected, it reveals that there are 12 English Instructors at Elizabeth International Hotel & Business School. Eight instructors (67%) have a master's degree as their educational background, and the rest (4 others/23%) have an undergraduate degree. This means that the instructors have fulfilled the academic qualification. Three instructors (25%) have been teaching for more than 10 years, four instructors (33%) have been teaching for around 5-10 years, and the rest (42%) have been teaching for less than 5 years. Experiences are assumed to be an essential factor that affects teachers' professionalism. Alamsyah et al. (2020) state that the more experience the teachers have, the more qualified they will be. Therefore, in terms of academic qualification and experience, the instructors at Elizabeth International Hotel & Business School have met the requirements as an instructor.

English Instructors' TPACK Development on the use of technology has become an essential part of education, especially since COVID-19 has attacked every aspect of human life. Elizabeth International Hotel & Business School, as a vocational institution, has combined the implementation of online and face-to-face learning to maximize the learning process. The face-to-face classes focus on practical education, while online classes focus on theoretical education, especially English courses. With the help of Canvas Instructure LMS (Learning Management System) the English instructors are expected to develop and apply other supported technology to assist students in the learning process.

Based on the survey and interview results, several tools are used by the English instructors at Elizabeth International Hotel & Business School. Those tools can be categorized into four types: Presentation preparation tools; PowerPoint, Web Exercise/Activity Creation tools; Kahoot, Quizzes, ESL Video, and Online Quiz Creator, Resource Sharing tools; like YouTube, and Social Networking Sites; Instagram and WhatsApp.

For on-site classes, the English instructors mainly use essential technological devices such as projectors, computers/laptops, and mobile phones to support other online tools mentioned above. Furthermore, the English instructors stated that the use of

technology helps them deliver the material and find the appropriate sources for teaching English.

TPACK Profile of English Instructors at Elizabeth International Hotel & Business School

According to Chai et al. (2011), TPACK refers to the knowledge teachers should have in the 21st-century era. The knowledge helps the teacher to know how to assist their students in the learning process with the help of technology. TPACK focuses on integrating three domains of knowledge: content, pedagogy, and technology. To understand the TPACK of a teacher, six other domains are used as a measurement, namely, TK (Technology Knowledge), CK (Content Knowledge), PK (Pedagogical Knowledge), PCK (Pedagogical Content Knowledge), TCK (Technological Content Knowledge), and TPK (Technological Pedagogical Knowledge).

Table 1 shows the survey results for measuring the 7 TPACK subdomains of English instructors' self-assessments. The survey contains 45 items adapted from Schmidt et al. (2009) and Sahin (2011). The score was based on the mean score of the English instructors' answers to 7 TPACK subdomains. The mean score was then categorized into five main categories, specifically 4.5-5 as very good, 3.5-4.4 as good, 2.5-3.5 as moderate, 1.5-1.4 as poor, and 0- 1.4 as very poor.

Table 1. Mean Score of TPACK subdomains of English Instructors

	Mean	Remark
TK	4.4	Good
CK	4.5	Very Good
PK	4.5	Good
PCK	4.4	Good
TCK	4.5	Very Good
TPK	4.4	Good
TPACK	4.2	Good
Mean	4.4	Good

The data presented in Table 1 reveals that the mean score category of the first TPACK subdomain, TK of English Instructors at Elizabeth International Hotel & Business School is "good." Technology Knowledge (TK) is essential knowledge of numerous technologies such as application/software, digital tools, and the internet that teachers should have. At the minimum, teachers are assumed to have the basics of technical knowledge, such as using Microsoft word, google, spreadsheets, etc. (Cahyani et al., 2021). Therefore, from the data presented in Table 1, it can be assumed that the English instructors of Elizabeth International Hotel & Business School have a basic knowledge of technology. In addition, the instructors have adequate skills to deal with it.

The second subdomain is Content Knowledge (CK). It refers to the knowledge of presenting the content of the subject that has been taught. It concerns the theories, concepts, practices, and approaches to developing the knowledge itself. Based on the data presented in Table 1, the mean score of English instructors at Elizabeth International Hotel & Business School's CK score is categorized as "very good," which implies that the English instructors are already confident with their English proficiency. Instructors make great efforts to acquire good knowledge. This is very necessary for teachers because they must grasp the knowledge meticulously before teaching the students.

Then, Pedagogical Knowledge (PK) refers to teachers' in-depth knowledge of several teaching and learning processes and practices or methods (Herring et al., 2016; Yulianti, 2012). PK focuses on teachers' ability to manage the learning process, including

designing, implementing, evaluating, and developing students' potential. In the PK domain, the English instructors at Elizabeth International Hotel & Business School are categorized as "very good." This assumes that the instructors have good pedagogical knowledge that can be applied to English lessons.

Another domain is called PCK or Pedagogical Content Knowledge. This domain of knowledge is related to the approach used during the class. According to Mishra and Koehler (2006), PCK focuses on using the proper approach to a specific subject. At the same time, the PCK score indicates that the English instructors at Elizabeth International Hotel & Business School are categorized as "good." This means that the instructors have accomplished their pedagogical contentment knowledge well.

The following domain is Technological Content Knowledge (TCK). It refers to the technology used in education. According to Schmidt et al. (2009), TCK requires teachers to understand the use of technology. This understanding could help the teacher understand a particular concept of content. Koehler et al. (2014) state the relation between content and technology. The data reveals that the category of English instructors' TCK mean scores at Elizabeth International Hotel & Business School is "very good." This shows that the instructors are capable of combining their knowledge of technology with the English content.

Afterward is TPK or Technological Pedagogical Knowledge. TPK refers to those teachers have on how different technologies can be used in the classroom. Schmidt et al. (2009) state that this knowledge could help teachers vary their teaching styles. Therefore, the teaching and learning process can be more exciting and challenging. In the TPK domain, the English instructors' mean score at Elizabeth International Hotel & Business School indicates that the instructors are categorized as "good". This shows that the instructors have successfully combined their technology knowledge for educational purposes. In this case, the instructor can select and customize the technology required for a particular teaching method.

The last is the TPACK domain. TPACK is the combination of the sixth other subdomains, which focuses on integrating three domains of knowledge, including the knowledge of content, pedagogy, and technology. In the 21st-century era, teachers must know and understand the use of technology in conducting their teaching and learning process. The data presented in Table 1 shows that the category of English instructors' TPACK mean score at Elizabeth International Hotel & Business School is 'good'. This means that the instructors have applied the TPACK well. The overall data reveals that four of twelve instructors have a very good or excellent understanding of how to assist the students during the learning process with the help of technology. At the same time, the rest of the instructors have a good understanding. The highest mean score is five from instructors 4 and 7. Therefore, it can be assumed that they know how to integrate technology into their class better than others.

To sum up, it can be stated that all English instructors of Elizabeth International Hotel & Business School have integrated technology into their classes well. The instructors understand how to choose the appropriate method and application to be implemented in their class. This means that the instructors understand new trends and technology well. Further, the combination of instructors' knowledge, pedagogy, and technology in conveying the content is the foundation of their success in teaching, especially English in this 21st-century era.

Challenges in Technological Integration in English Language Teaching Classroom at Elizabeth International Hotel & Business School

Based on the interview, three instructors from twelve teachers stated they did not face any problems. They argued that technology helps them deliver the material and find appropriate sources for teaching activities. Besides, it also makes the students easier to access the learning material through technology. However, the rest of the instructors have found challenges in integrating technology into English language teaching. Instructor 6 said: *The challenge mainly comes from the psychological challenge from the students' side where they feel isolated & alone if doing independent study / online conference class in their room despite the "virtual crowd" yet they still feel alone and lessen their learning motivation.*

It can be stated that the first challenge comes from the student side, which is the psychological challenge. The use of technology is known as its power to bring the far close. However, it also makes the closest far. Therefore, the learning process becomes less attractive because the students feel bored and unmotivated to work alone. Instructor 7 said: *Sometimes I have issues with students' literacy about certain basic technologies and the internet that I previously assumed they would know how to use. For example: Once, I found students who didn't know how to use a browser, copy-paste links, or scan a QR code. Those issues can cause distraction and affect learning efficiency and effectiveness.*

The second challenge is students' literacy of technology. The rapid change in technology makes students find it difficult to catch up with the new trends. Sometimes, the students focus only on things that they are interested in and ignore the others. Nevertheless, the student's knowledge should be a concerned. Instructor 10 said: *Mostly technical issues such as classroom facilities/ students' devices or tools to join the tech-based activity. Sometimes, the student's readiness to embrace technology in their learning activity can be a challenge too.*

The last one is technical issues. In a developing country like Indonesia, many cases are found related to technical issues. For example, some schools do not have the proper technology or internet access that should be used during class. On the contrary, students are not yet ready with a proper device (handphone or laptop). As technology develops and is essentially used in the teaching and learning process, the teachers are required to develop their pedagogical and content knowledge and technological knowledge. Based on the data obtained from the TPACK survey and an open-ended interview, it reveals that the English instructors at Elizabeth International Hotel & Business School have developed and applied the use of technology in their classes. The four categories of tools used, namely, Presentation preparation tools, Web Exercise/Activity Creation tools, Resource Sharing tools, and Social Networking Sites. The English instructors' TPACK at Elizabeth International Hotel & Business School was found to be in the "good" category. The result can be interpreted that the English instructors at Elizabeth International Hotel & Business School can incorporate ICT, content, and a proper approach to learning English. Moreover, the English instructors reveal three main challenges faced during the learning process: individual psychology, technical issue, and students' technology literacy. It means that the challenges mostly come from the students' side where they are not ready yet to use technology in the learning process. However, the English instructors play a vital role in assisting the students with the help of appropriate technology or tools during the learning process.

Discussion

In this 21st century, technology has become used more intensively and massively in all aspects of human life, including education. Technology becomes essential media and tools for teachers that help them assist the students in the learning process. Teachers

are expected to have adequate knowledge about technology and apply it to their classes. In this era, technology has affected every aspect of our lives. In implementing the technology, the teachers may face several problems related to the internet connection, the application, software, etc. Technology, on the other hand, offers valuable educational opportunities (Costley, 2014). Every classroom setting is different due to variances in the professional development school atmosphere and available resources, which is something that TPACK (Technological Pedagogical and Content Knowledge) recognises (Taopan et al., 2020). It talks about the things that educators should know about integrating technology into the classroom (Koehler et al., 2014) and gives a theoretical framework for analysing whether a teacher can plan and carry out technology-enhanced instruction successfully. It also outlines the knowledge that a teacher needs to engage in good pedagogical practise in a technology-enhanced learning environment (Angeli & Valanides, 2014; Chai et al., 2011; Indriyono et al., 2022; Mishra & Koehler, 2006).

Teachers, furthermore, can impart topic information to students using the TPACK model, which also improves student learning through practise and hands-on experience with technology terms. Henceforth, the finding of the present study shows that the content knowledge, and the technology content knowledge of the instructors at Elizabeth International Hotel & Business School have very good impact on the English teaching and learning process. Yet, other domains were still on “good” level. Teachers take on the role of facilitators when they implement the TPACK framework in language classrooms. Multi-level groups—groups made up of learners with varying language proficiency—are one of the main issues facing EFL/ESL teachers. Teachers can give content based on the specific needs and grade level of their students by implementing the TPACK framework (Bugueño, 2013).

Apart from opportunities TPACK can gain in English language teaching and learning context, challenges can also arise. Common challenges include IT literacy, technical issues – internet connection and time allowance, and creating meaningful tasks can arise (Taopan et al., 2020). These were also found in the present study, yet in different classifications which are coming from the students’ side, such as psychological challenge that affects their learning motivation, students’ technological literacy, and technical issues. Here is where teachers need to take into account the TPACK framework, which supports them in addressing technology integration in the classroom (Bugueño, 2013; Taopan et al., 2020). However, the finding shows that the score of TPACK itself was the lowest. Huang (2021) suggested that continuous studying and teaching can help teachers or instructuros become an effective teacher in an English classroom because the TPACK competences cannot be attained in one sitting.

Conclusion

From the findings above, it can be concluded that English Instructors have developed and applied the use of technology in their classes. The data reveals four categories of technology tools used by the English Instructors at Elizabeth International Hotel & Business School. There are Presentation preparing tools like PowerPoint; Web Exercise/Activity Creation tools like Kahoot, Quizzes, ESL Video, and Online Quiz Creator, Resource Sharing tools like YouTube, and Social Networking Sites like Instagram and WhatsApp.

In addition, the English instructors also use basic technological tools such as projectors, computers/laptops, and mobile phones for face-to-face classes. Moreover, the category of English instructors' TPACK at Elizabeth International Hotel and Business School, in general, is "good". This means that they were able to incorporate ICT, content,

and proper approach into learning English. The average score for technology-related subdomains is lower than for non-technology-related subdomains. Still, its category is good. This may indicate that the instructors are not very familiar with the technology.

Therefore, instructors are expected to continue to develop TPACK to achieve better teaching and learning of the language, especially in technology-related sub-areas. In addition, the interview revealed that the instructors face three main challenges in integrating technology into their class: individual psychology, technical issue, and students' technology literacy. Based on the findings, teachers are advised to consider the challenges which usually arise when using the technology. The use of technology is inseparable from the world of education. Thus, the teacher, as an important facilitator in the learning process, must be able to adapt to these changes. The institutions are expected to be able to assist and support to provide technical facilities to increase the effectiveness of the learning process. For other researchers, it is recommended to use the result of this study as a reference to do further research related to TPACK or find the solution to the challenges encountered in using technology.

References

- Agustini, K., Santyasa, I. W., & Ratminingsih, N. M. (2019). Analysis of Competence on “TPACK”: 21st Century Teacher Professional Development. *Journal of Physics: Conference Series*, 1387(1), 012035. <https://doi.org/10.1088/1742-6596/1387/1/012035>
- Al Khoeri, A. F., Nuraini, W., Ramdani, R., & Agum, S. (2021). *The Implementation of Canvas to Enhance English Teaching and Learning*. <https://doi.org/10.32996/jeltal.2023.5.2.22>
- Alamsyah, M., Ahmad, S., & Harris, H. (2020). Pengaruh Kualifikasi Akademik dan Pengalaman Mengajar terhadap Profesionalisme Guru. *Journal of Education Research*, 1(3), 1830187. <https://doi.org/10.37985/joe.v1i3.19>
- Angeli, C., & Valanides, N. (2014). *Technological pedagogical content knowledge: Exploring, developing, and assessing TPCK*. Springer.
- Bugueño, W. M. (2013). *Using TPACK to promote effective language teaching in an ESL/EFL classroom*.
- Cahyani, L. A., Azizah, N., & Evans, D. (2021). Technological Pedagogical and Content Knowledge (TPACK) of Special Education Teachers in Science Instruction for Students with Special Needs. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 11(1). <https://doi.org/10.30998/formatif.v11i1.8580>
- Chai, C. S., Ling Koh, J. H., Tsai, C.-C., & Lee Wee Tan, L. (2011). Modeling primary school pre-service teachers' Technological Pedagogical Content Knowledge (TPACK) for meaningful learning with information and communication technology (ICT). *Computers & Education*, 57(1), 1184–1193. <https://doi.org/10.1016/j.compedu.2011.01.007>
- Chovancová, B. (2014). Needs Analysis and ESP Course Design: Self-Perception of Language Needs Among Pre-Service Students. *Studies in Logic, Grammar and Rhetoric*, 38(1), 43–57. <https://doi.org/10.2478/slgr-2014-0031>
- Costley, K. C. (2014). The positive effects of technology on teaching and student learning. *Online Submission*.
- Demir, B., & Sonmez, G. (2021). Generation Z students' expectations from English language instruction. *Journal of Language and Linguistic Studies*, 17(S1), 683–701.

- Drajati, N. A., Tan, L., Haryati, S., Rochsantiningsih, D., & Zainnuri, H. (2018). Investigating English Language Teachers in Developing TPACK and Multimodal Literacy. *Indonesian Journal of Applied Linguistics*, 7(3), 575. <https://doi.org/10.17509/ijal.v7i3.9806>
- Elas, N., Majid, F., & Narasuman, S. (2019). Development of technological pedagogical content knowledge (TPACK) for english teachers: The validity and reliability. *International Journal of Emerging Technologies in Learning (IJET)*, 14(20), 18–33.
- Fatimah, A. S., & Santiana, S. (2017). Teaching in 21st Century: Students-Teachers' Perceptions of Technology Use in the Classroom. *Script Journal: Journal of Linguistic and English Teaching*, 2(2), 125. <https://doi.org/10.24903/sj.v2i2.132>
- Herring, M. C., Koehler, M. J., & Mishra, P. (2016). *Handbook of technological pedagogical content knowledge (TPACK) for educators*. Routledge.
- Huang, Y. (2021). TPACK framework for online EFL teacher training in higher education. *Adult and Higher Education*, 3(1), 95–102.
- Indriyono, H., Budiraharjo, M., & Bram, B. (2022). Assessing Vocational High School EFL Teachers' Technological Pedagogical Content Knowledge in Online Learning. *Journey: Journal of English Language and Pedagogy*, 5(2). <https://doi.org/10.33503/journey.v5i2.2115>
- Jan, H. (2017). Teacher of 21st century: Characteristics and development. *Research on Humanities and Social Sciences*, 7(9), 50–54.
- Koehler, M. J., Mishra, P., Kereluik, K., Shin, T. S., & Graham, C. R. (2014). The technological pedagogical content knowledge framework. *Handbook of Research on Educational Communications and Technology*, 101–111.
- Kusuma, I. P. I. (2021). TPACK-Related Programs for Pre-Service English Teachers: An In-Depth Analysis on Efforts and Issues of ICT Integration. *Jurnal Cakrawala Pendidikan*, 40(1), 183–195. <https://doi.org/10.21831/cp.v40i1.28820>
- Mahdum, M. (2015). Technological Pedagogical and Content Knowledge (TPACK) of English Teachers in Pekanbaru, Riau, Indonesia. *Mediterranean Journal of Social Sciences*. <https://doi.org/10.5901/mjss.2015.v6n5s1p168>
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017–1054.
- Riazi, A. M. (2017). *Mixed methods research in language teaching and learning*. Equinox Publishing.
- Rymanova, I., Baryshnikov, N., & Grishaeva, A. (2015). E-course Based on the LMS Moodle for English Language Teaching: Development and Implementation of Results. *Procedia - Social and Behavioral Sciences*, 206, 236–240. <https://doi.org/10.1016/j.sbspro.2015.10.016>
- Sahin, I. (2011). Development of survey of technological pedagogical and content knowledge (TPACK). *Turkish Online Journal of Educational Technology-TOJET*, 10(1), 97–105.
- Santiana, S., Silvani, D., & Ruslan, R. (2021). Optimizing LMS CANVAS for Interactive Online Learning Perceived by the Students. *Journal of English Education and Teaching*, 5(4), 529–543. <https://doi.org/10.33369/jeet.5.4.529-543>
- Schmidt, D. A., Baran, E., Thompson, A. D., Mishra, P., Koehler, M. J., & Shin, T. S. (2009). Technological pedagogical content knowledge (TPACK) the development and validation of an assessment instrument for preservice teachers. *Journal of Research on Technology in Education*, 42(2), 123–149.

- Sumardi, S., & Muamaroh, M. (2020). Edmodo Impacts: Mediating Digital Class and Assessment in English Language Teaching. *Jurnal Cakrawala Pendidikan*, 39(2), 319–331. <https://doi.org/10.21831/cp.v39i2.30065>
- Suroyo, S., & Faridi, A. (2018). Developing Speaking English for Specific Purposes Materials for Broadcasting Major Students-The Case of Eleventh Grade of Vocational High School 1 Kendal. *English Education Journal*, 8(3), 320–324.
- Taopan, L. L., Drahati, N. A., & Sumardi, S. (2020). TPACK framework: Challenges and opportunities in eFL classrooms. *Research and Innovation in Language Learning*, 3(1), 1–22.
- Tawalbeh, T. I. (2017). EFL Instructors' Perceptions of Blackboard Learning Management System (LMS) at University Level. *English Language Teaching*, 11(1), 1. <https://doi.org/10.5539/elt.v11n1p1>
- Triana, M., Herman, H., Sinurat, B., & Silalahi, D. E. (2021). An Analysis of Students Perception on the Use of Google Classroom in English Language Learning. *Cetta: Jurnal Ilmu Pendidikan*, 4(3), 607–618. <https://doi.org/10.37329/cetta.v4i3.1474>
- Wahyuni, R. N. B., & Rozi, F. (2020). The Performances of ESP Lecturers' Pedagogical and Professional Competence in Teaching Speaking Class. *English Education Journal*, 10(3), 340–350. <https://doi.org/10.15294/eej.v10i1.36779>
- Yulianti, F. (2012). Correlation between Pedagogical Competence of Religion Teachers and Students' Learning Outcomes. *Journal of Education*, 1(2).
- Zahedpisheh, N., Abu Bakar, Z. B., & Saffari, N. (2017). English for Tourism and Hospitality Purposes (ETP). *English Language Teaching*, 10(9), 86–94.