A Narrative Research of Senior High School Teachers' Strategies Using TPACK in Indonesia

Halimah Tusa' Diah; Sari Hidayati

English Education Department, Universitas Negeri Yogyakarta (Yogyakarta State University), Indonesia

Abstract

The existence of increasingly developing and advancing technology makes education find technology a tool that can increase student activeness in the classroom. This means that teachers must overcome the demand of digital era by integrating technology in teaching. This study aimed to dig deeper information about secondary school English teachers' strategies on implementing the Technological Pedagogical Content Knowledge (TPACK) framework in their teaching methods. This research utilized a narrative inquiry approach to examine teachers' strategies using TPACK in teaching. This study employs in-depth interviews to gather detailed personal narratives from three secondary school English teachers with duration 40-60 minutes of interview. The narratives offer insights into teachers' challenges and opportunities when integrating technology into their instructional practices. The findings of this study showed that all teachers must have their own strategies concerning how to use technology in the classroom properly. The use of technology is not only utilized in the classroom; the strategy of using technology in teaching starts from preparation before entering the classroom to the assessment stage at the end of the meeting. Technology use will be very difficult if the school has limited technology facilities. Therefore, English teachers at secondary schools maximize the use of technology by finding learning materials that meet the students need. Technology does not always have to happen in the classroom; there are still many strategies that can be used to maximize the use of technology.

Keywords: *Teachers' Strategies; TPACK; Narrative Research*

Introduction

The 21st century requires all aspects of education to be more advanced. The educational system enhances that teachers must have some new skills that must be acquired, such as digital media literacy, and that's how English teachers prepare for overcoming this era (Trilling & Fadel, 2009). The world of education always be involved with technology because it must follow the demands of the era. In education, the teaching and learning process system is no longer centered on the traditional system using chalk or markers, but the creativity using technology is required to be used by English teachers as explained in (Turgut, 2017). The use of technology is one of the obligations that English teachers must do in teaching activity, the use of computer technologies in language training creates a learning environment that is centered on the student (Al-Mahrooqi & Troudi, 2014).

Traditionally, English teachers only used textbooks, worksheets, or face-to-face instruction methods in the classroom. However, in today's rapidly evolving world, using the previously mentioned methods has become ineffective. English teachers must have skills in using technology as the latest method to survive in this 21st century, also known as the digital era (Akram et al., 2022). English teachers need to develop the necessary skills to teach their students and prepare them for careers in the 21st century. This requires them to equip themselves with the knowledge and tools of Technology, Pedagogy, and Content Knowledge to deliver their lessons effectively. Therefore, TPACK becomes a good model of teaching for English teachers to provide their students with the skills and knowledge required to succeed in the modern workforce (Banegas, 2020).

Furthermore, educators are now responsible to equip learners for success in disciplines that will increasingly depend on technology. Teachers are mostly preparing students for professions that have not yet emerged. As the integration of social media into daily life evolves, so too will the associated professional categories and employment training that facilitate this advancement. However, many problems arise among teachers who find it challenging to adapt to technological developments, especially teachers at secondary schools. Many teachers feel that using technology is still very difficult to use because they are not familiar with technological devices (Obara et al., 2018). This is also the case for teachers in Indonesia, especially those who teach in small schools and have limited experience and understanding of combining traditional teaching methods and technology (Rahmawati, 2021).

Some English teachers may encounter difficulties when incorporating technology into their teaching due to a lack of understanding of how to integrate it into the content effectively. Unfortunately, the reality is that using technology in the classroom is not always a seamless process, this statement supported by study conducted by Rustanto et al., (2020) which states that teachers must understand whether the learning material aligns with the use of technology. However, there must also be some English teachers who say that the use of technology in the classroom can be helpful in delivering materials, as well as assisting students to be more creative with the many features and application options provided by technology today. In summary, these differences of opinions are the main topic of discussion in this study. This study intends to explore the perspectives and strategies of teachers at several secondary schools in Yogyakarta.

Addressing the issue, this study selects several teachers who had experienced the transition phase from when technology was not developed until now when it is very developed. Those Teachers may have varied strategies for integrating technology into their pedagogical content, leading to inconsistent application of TPACK in the classroom. English educators need to possess a plan for utilizing the TPACK framework to increase the effectiveness of teaching and learning. Additionally, they should thoroughly comprehend the purpose and application of TPACK in the teaching and learning process. Based on this explanation, the researcher is interested in finding out in depth the English teachers' strategies using TPACK and following up the problems that occur during using the TPACK framework in teaching.

Method

This study sought to give a rich explanation of English teachers' experience about their strategies using TPACK at secondary school by employing narrative research. This approach enables researchers to gain a deeper understanding of how people make sense of their lives and experiences (Barkhuizen et al., 2014). The study conducted by Ary et al., (2010) also explained the process of narrative analysis enables the researcher to collect information from the personal encounters of the English teacher because this approach focuses on understanding and interpreting human experiences through the lens of storytelling.

In this research, the researcher reached the participants in their natural setting. The participants' natural setting is their school and a place where they teach at secondary school. The research setting in

this study was at SMA *Menyenangkan* and SMA *Bahagia*. Narrative research seeks to understand the lived experience of an individual or small group (Ary et al., 2010). So, the researcher chose only two teachers of senior high school in Yogyakarta. The research participants of this study are two English teachers who have been teaching English for more than ten years. The two of them have dedicated their professional life as a teacher in Yogyakarta and the surrounding. Yet, they pursue knowledge not only in town but also out of town and even country through conferences and workshops.

Pseudonym	Teaching Experience	Educational Background
Matahari	19 years	Master degree
Mawar	27 years	Master degree

The key instrument of this study is semi-structured interview. According to Barkhuizen et al., (2014) interviewers have a standard set of fundamental questions that serve as a basis for individual interviews. So, the researcher prepared the interview guideline that relates to the theory of TPACK framework from Mishra & Koehler (2006). The questions in the instrument contained 36 questions, which were divided into three categories based on the theory of TPACK in the classroom. The first category is five opening questions about schools' and teachers' views on technology development and their knowledge of the word TPACK. The second category is the core questions about this study's three main points of discussion: TK, PK, and CK. Then, the last category is the closing statement about the teachers' strategies using TPACK in teaching. All the questions are not restricted because this study uses open-ended questions to get rich data results. Furthermore, the study utilized a semi-structured interview format, enabling the inclusion of supplementary questions for clarification purposes (Cohen et al., 2018).

The data collection process for this research is a semi-structured interview that is carried out in different places and different duration of time for each participant, interviews that have been conducted with Matahari and Mawar are at the schools where they both teach. The interview with Matahari lasted 60-90 minutes, while the interview with Mawar lasted approximately 80-100 minutes. The data analysis technique in this study is a narrative inquiry method. Narrative analysis is a research method that involves the use of stories as data or as a means of presenting findings based on the sociological and psychological literature. Still, it is grounded in published empirical research within the field of language teaching and learning. Like other forms of qualitative data analysis, narrative analysis involves the process of categorizing and identifying themes that are relevant to the stories shared by participants or the narrative data collected from interviews (Barkhuizen & Consoli, 2021).

In narrative research, trustworthiness refers to the connection between the findings and the pertinent underlying realities inside the narratives, as well as the relationship between the researcher and the study participants involved in data collection (Barkhuizen et al., 2014). This study explored credibility, dependability, and transferability to guarantee the study's trustworthiness. Concerns with the credibility of the findings affect the integrity of the study. This study must convey the reality as accurately as possible, derived via triangulation and member checking. Practically, the researcher triangulated the data by utilizing interviews, observations, and artifacts (pictures, audio recordings, and YouTube video links). Dependability relates to consistency, which the researcher demonstrated through the use of an audit trail and data triangulation. The audit trail was established by documenting the study's methodology, utilizing data obtained from interviews, observations, and artifacts. Transferability refers to "the degree to which the findings of a qualitative study can be applied or generalized to other contexts or to other groups". This study refrains from making generalizations, as narrative research is concerned solely with the lived experiences of one or more individuals (Barkhuizen et al., 2014). This serves to invite readers to contemplate connections with other narratives and analyses, either explicitly or implicitly. Nevertheless, the research participants, being typical teachers with shared characteristics, backgrounds, and interpretations of TPACK in the classroom, contribute to a form of intersubjectivity that facilitates transferability, even without generalization.

Finding and Discussion

Finding

The exploration of findings is based on Shakespeare's narrative structure in explaining each participant's stories. Since the nature of narrative inquiry is to recount topics that the participants have narrated, this study creates a plot based on story shared by the participants related to their experiences about strategies using TPACK in teaching.

Matahari's Story

This first story comes from Matahari. She first heard the word TPACK when she was in college. Since she had liked the topic of technology from the beginning, TPACK had already existed at that time. However, we need to know that the word TPACK was rarely associated with technology. Matahari thought this happened because more research on TPACK was needed.

> *"What needs to be underlined is that the word TPACK when I was in college was rarely associated with technology"* (ST/B/924/A3)

However, in 2016, Matahari began to notice the word TPACK in several seminars she attended. So, Matahari already knew the word TPACK long before it became popular among students.

The first strategy she uses at the beginning of the semester is concisely conveying the learning objectives to her students. This will impact students' orientation to the material she will teach in class later. The second strategy is the content of learning materials in the classroom. Matahari usually takes some content from the Internet, such as websites or certain applications.

> *"I may take a lot of content from other sources such as websites or YouTube"* (ST/B/924/A9)

Then, after getting the appropriate learning materials, Matahari will modify them and make the results as creative as possible. She uses some of the content on the website as her materials, and that's where technology plays a role in his teaching strategy.

> *"I just want to utilize it. So, I'm more about how technology helps my teaching" (*ST/B/924/A8)

So, Matahari uses the TPACK model by searching for some materials on the internet. She also searched for internet materials several times. The challenge she faced was the internet network connection.

Because technology is very active now, Matahari sometimes takes the time to give personal consultations to students who are passionate about English.

> *"I only recommend apps that help these students if they are truly committed to deepening their English skills."* (ST/B/924/A25)

Matahari explains how to use the application, from its usefulness to its shortcomings. He continues to explore applications and websites that his students can use to hone their English. So, Matahari's teaching strategy is not only inside the classroom but also outside the classroom.

Matahari continues to adapt and innovate with technology both inside and outside the classroom. She said adaptation is the best strategy for teaching.

> *"I don't create material in the form of videos; I just utilize it."* (ST/B/924/A9)

One example of adapting to technology based on her is learning materials in the form of videos. Some teachers make their own learning videos, but of course, it is not an obligation (Brame, 2016). She also does not make his own learning materials; she constantly modifies references from the internet and then adjusts them to the needs of her students. Similarly, the form of assessment for students.

"In terms of assessment, it's also very different. Technology makes it easier for us to give feedback differently to children, and there are many uses of technology." (ST/B/924/A11)

She said one of the apps she often uses to evaluate student work is Google Classroom. In the app, she can create deadlines for student assignments. Commenting on students' assignments privately can also be done on the app. If she compares it with the assessment form in the past, then there will only be a pile of paper.

"The use of technology is definitely about knowledge demonstration." (ST/B/924/A15)

What she means by knowledge demonstration is assessment activities such as "Know Your Progress". Well, assessment activities like this can already be done in simple applications such as WhatsApp. She said if teachers find it difficult to adapt to other applications, then WhatsApp alone already has many of the latest features, such as polling and others.

In conclusion, ss teachers, she must have to think about how to improve and upgrade the strategies that we have yet to successfully teach to our students. There must be events that we can do, either through the utilization of technology or the utilization of the school environment.

Mawar's Story

Mawar had already heard the word TPACK when she was in senior high school.

"I have never really focused on the phrase TPACK itself. But if I have been using technology for a long time." (ST/I/924/A3)

However, Mawar rarely focused on the word TPACK. She only knew about it when she was studying in school and college.

Regarding the use of technology in the classroom, Mawar said that she prefers video materials to be taught in the classroom, as her students also prefer video materials. The video materials that Mawar uses as learning materials are usually taken from several well-known platforms or websites and the content is guaranteed.

"Usually, I take videos from CNN or videos from other native speakers." (ST/I/924/A8)

Mawar usually takes several videos from the platform and self-edits them to suit her students' needs in class. Editing learning videos and making them shorter is also one of Mawar's efforts to provide more concise learning materials for her students. Because she knows that if her learning videos are long, then her students will feel bored quickly.

"Then, I put the video on Google Classroom so students can access it more easily." (ST/I/924/A8)

After putting the video in Google Classroom, Mawar will include some questions related to the video that has been given, which will then be answered by her students in Google Classroom.

Mawar emphasized that she does not use a specific strategy when teaching in the classroom. All strategies, ways, and methods in a meeting will be adjusted to the needs of the class. However, there is one activity that Mawar always does at the beginning of a learning meeting.

"There isn't a specific strategy, but I have an activity at the beginning of the lesson called "trigger questions"." (ST/I/924/A4)

She said that a "question" related to the learning material to be taught can be a start to get students active in the classroom. The strategy does not use technology, and there is certainly no extra effort involved. However, the opening question or trigger can make students active from the beginning of the lesson.

"The strategy I use when teaching in today's era is to use a mobile phone." (ST/I/924/A4)

The mobile phone is the main tool that Mawar uses to help her in managing the class both in teaching and for assessment. One of the activities that Mawar usually uses her mobile phone for is speaking. Mawar will let all her students search for materials that suit their needs, and she is sure that her students know the limitations of using mobile phones in class. Then, she will make her students show the results of their assignments with presentations in front of the class without looking at the materials they have compiled on their mobile phones.

"Such devices are rarely used because students are very independent now." (ST/I/924/A11)

The meaning of the word "independent" is that all students are very proficient in using mobile phones and are very comfortable learning using their own mobile phones. Therefore, Mawar took advantage of this and used mobile phones in class several times every time there was video or audio material in class.

"As long as we give time in the timing, for example, 5 minutes, 2 minutes, or 3 minutes for them to listen or read the material." (ST/I/924/A11)

The use of mobile phones in the classroom is more than just left to the students. Mawar continues to check regularly for the smooth running of the classroom learning system. She also said that mobile phones are indeed the main centre in the classroom, but they are still tools. Mawar continues to adapt and be creative with the material being taught. This is how learning using the Google Classroom app can be carried out smoothly.

"Now, everything is provided on the Internet, and the use of technology is common among students." (ST/I/924/A11)

Mawar says that using mobile phones as the main tool that helps her in the classroom is relatively easy. If the students are already very active in using mobile phones, then she has to take advantage of the opportunity. The concern is how Mawar manages the class as well as possible so that nothing untoward happens.

Mawar's materials are taken from books provided by the school. She only adds some videos or audio related to the material from the internet.

"However, I differentiated the teaching method; sometimes presenting, sometimes uploading videos on YouTube." (ST/I/924/A14)

Mawar then explores this by differentiating her teaching strategies in the classroom. She allows her students to submit written or spoken assignments. That way, Mawar can see the interest of her students in the class she teaches.

In conclusion, by using technology, Mawar can let her students know what they need to know in the next meeting. Using technology can also help her students ask Mawar questions about learning materials outside of class hours. Then, learning references become broader and not only based on books.

"Technology is my friend, and a helping friend is a matter of choosing." (ST/I/924/A33)

As a teacher, choosing devices, materials, and technology-related needs in the classroom becomes a measuring point for whether the class is successful or not. If the teacher chooses the wrong method or device that helps the teaching system in the classroom, then the learning activities will not be fun.

Discussion

From the data presented in the findings of the study, all English teachers stated that there are no specific strategies in using technology in the classroom. The meaning of "no specific strategies" in this discussion is that teachers cannot determine which strategies are suitable and best for using technology in the classroom. Many factors need to be considered when wanting to use the TPACK model in teaching, one of them is the selection of learning content and teaching methods that are appropriate for the class.

However, of course, there are several ways and methods to use technology that are suitable for students and classes. The TPACK framework is not a specific framework created to comprehend and elucidate teachers' utilization of technology. While these different methods may utilize varying terms, they generally concur that the emergence of new technologies necessitates educators to acquire knowledge that links the advantages (and limitations) of these technologies to the changes in content and pedagogy. There are many ways to integrate technology in the classroom, one of them is by utilizing students' mobile phones to conduct game-based learning or using educational applications (Salsabila & Agustian, 2021). Two English teachers who teach at the senior high school level believe that using technology is one of the ways to make their teaching more accessible in the classroom.

Technological knowledge encompasses understanding various technologies, from low-tech tools like pencil and paper to digital innovations such as the Internet, digital video, interactive whiteboards, and computer software (Taopan, 2020). The English teachers at the senior high school level are already very familiar with low-tech tools and digital tools. They are already accustomed to using digital tools such as the internet and electronic devices provided by the school. The school's facilities that support the use of digital technology make English teachers feel that they need to continuously improve their understanding of the technology suitable for their teaching methods and the classes they teach. This is in line with the theory from Çam & Koç (2024) that the use of technology can enhance teaching effectiveness. Therefore, those English teachers certainly have more effective teaching methods compared to teachers who do not use technology in the classroom.

Pedagogical knowledge comprises comprehensive understanding of the processes, practices, and strategies of teaching and learning, including broader educational objectives, values, and aims (Colón et al., 2023). This constitutes a body of knowledge relevant to all aspects of student learning, classroom management, and the planning and implementation of lesson plans. It encompasses knowledge of classroom procedures or approaches, the characteristics of the audience being taught, and strategies for assessing student comprehension. Referring to the theory, English teachers must have a good understanding of the teaching methods and strategies that will be used in the classroom. The results of the findings of this study show that English teachers who teach at the senior high school level always prepare teaching methods that are suitable for students' needs. This can be seen from their activities at the beginning of the semester, they always conducting a needs analysis. The purpose of the needs analysis is to understand students' needs and wants regarding the classroom learning system. A study conducted by Changpueng & Pattanapichet (2023) also supported this statement because they explored that conducting needs analysis can meet the needs and wants of specific subject. If these needs and wants were obtained from the results of the needs analysis, then the English teachers can determine the appropriate methods for the learning material and the right strategies to implement these methods in the classroom.

Referring to study by Mishra & Koehler (2006), content knowledge pertains to the range of information that teachers need to possess regarding their profession. This knowledge domain specifically refers to having a grasp on the subject matter being taught or learned. English teachers must possess

knowledge of explanatory frameworks that structure and interrelate concepts, as well as an understanding of the principles of evidence and proof. The findings of this study showed that English teachers often take learning materials from the internet. They do this because usually the material in the books provided by the school seems more rigid and very limited, so they have to take more suitable material from the internet for the flexibility of teaching activities in the classroom. The learning material in the book usually contains only a few texts, and the rest is consisting of various types of assignments. Therefore, English teachers usually take materials from reputable English-based websites such as the British Council or Twinkl site. Sometimes they also take material from video-based applications like YouTube and others. However, of course, not all learning materials from the internet are valid. A study by Abbas & Qassim (2020) explained that there are several disadvantages when using the YouTube application for teaching. This also applies to all applications and websites used by English teachers. English teachers certainly understand the content that meets the needs of students, so the main point that must be considered is the originality of the learning materials from the internet.

Based on the findings of this study, it can be concluded that English teachers who teach at the senior high school level already know how to deal with the content of materials in the teaching process. This can be seen from the way preparation is done before entering the class and the different assessment methods used both in class and at the end of the learning process. The English teachers are also familiar with the components and capabilities of electronic devices and the digital technology access available in the classroom. This can be seen in how teachers create an enjoyable learning environment where technology can be effectively integrated into their teaching. It can also be seen from their teaching methods, which have shifted from paper-based and whiteboard-based to mobile phone-based or PPT-based using a projector in the classroom. In conclusion, the English teachers who teach at the senior high school level have been able to implement good teaching with their knowledge in combining strategies, materials, and technology in the classroom. This is supported by a study by Mishra & Koehler (2006) which emphasizes that TPACK is successfully implemented in the classroom when teachers have an intuitive understanding of the complex interplay between the three basic elements of knowledge (CK, PK, TK) by teaching content using appropriate pedagogical methods and technologies.

Conclusion

This study showed that English teachers need to have their own strategies related to the use of technology in the classroom. They said that using technology requires much preparation, closely related to the teaching methods and materials. The English teachers believe that the use of technology can be maximized even though the technology facilities at school are limited. They also use strategies as usual, namely explaining learning materials using power points displayed with a projector. Another strategy to use technology is by utilizing assessments such as projects and other video assignments. They focus on using the projector as the main tool to help the teaching process. On other occasions, they will focus on using students' mobile phones when discussing materials with project assessments. They also believe that their students can maximize the use of mobile phones in the classroom without worrying that their students are looking for something other than learning materials in the classroom. Hence, the conclusion is that English teachers at the senior high school level can use the TPACK model well in the classroom.

Suggestion

English teachers who want to maximize the use of technology in the classroom or outside the classroom are expected to attend workshops or seminars on the use of technology in the classroom. This study highly recommends having information and knowledge about the use of technology in the classroom before teaching practices. When teachers know how to maximize the use of technology, they can definitely overcome the obstacles in the classroom by making the classroom more effective and enjoyable for students. This study contributes to giving supplementary insight from the real practices of technology integration in ELT. The research findings will help practitioners, including English teachers,

educational stakeholders, and other researchers. Knowing the impact of teachers' perspectives of technology and teaching strategies using TPACK in the classroom informs the teachers about the importance of teachers' perspectives and pedagogical aspect in the classroom. Other researchers are expected to discuss the same topic using other methods and ways of analysis to get a different point of view from this study and produce a new study that is different, more specific, and more unique. Other researchers should also consider other factors, such as TPACK model specifications, that are not explained by this study.

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