Volume 11 No. 4 p 469-475
Journal of English Language Teaching
EISSN 2302-3198
Published by Departemen Bahasa dan Sastra Inggris
FBS Universitas Negeri Padang
available at http://ejournal.unp.ac.id/index.php/jelt

Exploring Vocational School English Teachers' Technological Knowledge in Bukittinggi City

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Article History
Submitted: 2022-10-29
Accepted: 2022-12-12
Published: 2022-12-12

Keywords:
21st Century Learning, TPACK, and Technological Knowledge

Abstract

The development of technology in the 21st century impacts all aspects of life, one of which is the field of education. Therefore, the teachers must be able to master technologies that can support learning so that they become 21st-century learning characters. This study seeks the technological knowledge of English teachers at Bukittinggi City in learning. This research used descriptive qualitative research because it explores and describes the ability of Technological Knowledge for English teachers. The participants of this study were the teachers and the students in Bukittinggi City. The selecting of participants used purposive sampling techniques and the selection of students used the accidental sampling method. The instruments were a questionnaire given to teachers and students, and semi-structured interviews. Then the supporting data was the lesson plan sent by a representative from the interviewee. In analyzing the questionnaire used quantitative method. For the teacher's questionnaire, the results are in the form of an average and then categorize their technological knowledge. And then, the students' questionnaires obtained results in the form of percentages. Then for the lesson plan, use the document review method and the restatement interview from what was said. The findings of the research in the knowledge and application of technological knowledge has begun to be applied. However, most teachers' abilities and skills in technological knowledge were in the average category. Therefore, the understanding and utilization of technological knowledge for English Vocational High School teachers must be expanded further in designing lesson plans, teaching and learning processes, and assessing the students.

How to Cite: Giana, E., & Adnan, A. (2022). Exploring Junior High School English Teachers' Technological Knowledge in Bukittinggi City. Journal of English Language Teaching, 11(4): pp. 469-475, DOI: 10.24036/jelt.v11i4.119903

INTRODUCTION

In the 21st century, many human aspects have changed, starting from the economy, society, and technology; the education sector is also affected by the changes. Learning way in the 21st century has different perspectives learning. The learning process can be done anywhere, all the time, on any topic, and in any learning style (Jan, 2017).To sum up, learning in the 21st era is more flexible and has different ways of teaching to enhance students' competencies. According to Jacinto (2016), cited by Erdem (2020), mentions that the students' competencies in the

learning process are the way of thinking, way of working, equipment for working, and skills for interacting in the world. Moreover, in the opinion of Akhwani (2020), the professional teacher's role is needed by having skills, attitude, and knowledge to achieve the competencies.

As mentioned above, professional teachers need to understand the knowledge in the learning process to achieve the required competencies by the students. According to Akhwani (2020), experienced teachers must master the ability of the subject's content and how to manage the class, and the knowledge of digital literacy as a part of the 21st century. As Martin (2005), cited by Sadaf & Johnson, (2017), says, digital literacy means a person's ability, knowledge, and capability to use digital tools and other facilities. From the definition above, digital literacy is also linked with technological knowledge. This statement, argued by Akhwani (2020), states that the ability operate technology and use standard technology tools while learning is defined as Technological Knowledge. In conclusion, both digital literacy and technological knowledge discuss the applying technology as a tool or media used in the classroom.

One of the best ways for teachers to integrate technology into the learning process is using the TPACK framework. TPACK is a framework that connects teachers' knowledge of technology, pedagogy, and content which interact with one another to produce effective teaching and learning (Akhwani, 2020; Finger et al., 2010). As Firmin & Genesi (2013) quoted, the application of technology in the classroom has opened up opportunities for teachers to deliver technology-based materials. In addition, Masruddin, (2014) states that mastering technology makes teachers faster in conveying messages from lessons, making it easier for students to absorb the material being taught.

Based on the reason for mastering by the teachers above, the teacher must implement technology during the learning process. However, the researcher found that some teachers still do not apply TPACK in the learning process, especially in technological skills. In addition, the researcher observed the teaching activity in the classroom; most teachers do not integrate technology while conducting the learning process. Instead, the teachers explain the material verbally or as a teacher center method. Then, the teacher stands in front of the class and lets the students listen to the material. Because of this phenomenon, the researcher wants to explore the teachers' technological knowledge in Bukittinggi city.

The focus of the study is to explore the technological knowledge and its implementation by vocational English teachers while teaching English subjects, including designing a lesson plan, teaching and learning process, and assessing the students. The limitation of the technology being explored is using digital technology to develop lesson plans, education, and learning processes and evaluate the students by Vocational English Teachers.

METHOD

The method of this research was descriptive qualitative design. It described information through depth exploration of Junior High School English teachers. This study was conducted in four junior high schools in Bukittinggi City. Furthemore, the participants were the vocational school teachers and students. For choosing the

teacher, the researcher used purposive sampling with school accreditation criteria. And then, choosing the students' participants used accidental sampling method.

Moreover, to collect the data, the researcher used two main instrumentations; those were questionnaire for teachers and students. In detailed, teachers' questionnaire was used to know the teacher comprehension and its implementation of technological knowledge in designing lesson plan, teaching and learning process and assessing the students. Next, students' questionnaire was used to prove whether the teacher truly used several kinds of technology that the teachers' mention in the questionnaire. And then, lesson plan was to know whether the teacher include technology in designing lesson plan, teaching and learning process, and assessing the students. However, if the lesson plan do not stated clearly kinds of technology were used, the researcher conducted interview to clarify the teachers' lesson plan.

RESULT AND DISCUSSION

1. Research Findings

a. Technological Knowledge in Teachers' Lesson Plans

Before the teachers implement technological knowledge in designing lesson plans, teaching and learning process, and assessing the students, the teachers must have a comprehension about the varieties of technological knowledge. Based on the findings teachers' comprehension of technological knowledge is mostly in the average category. The total of teacher was nine teachers. Then, the second category was high. The total number of teachers was three teachers. Lastly, the low and very low categories had the same number of teachers, which was one teacher. Therefore, none of the teachers had a very high category in teachers' comprehension in technological knowledge.

The majority technology used by the teachers were social media platforms (such as; Blog, WhatsApp, and Youtube), LMS (Learning Management System) platforms (such as; Google Classroom and Edmodo), software conference (such as; Skype, Google Meet, and Zoom), Microsoft Office applications (such as; Word, Excel, and Powerpoint), Learning quiz maker and online assignment (such as: Kahoot, Google Form and Quizizz), learning games (such as: Bamboozle, Oodlu, and mentimeter), online resources (newspaper, magazine, television website like NBC or CNN), Google Workspace (such as: Google Document, Google Sheet, and Google Slide), image editor (Adobe Photoshop, Corel Draw, Canva, and Adobe Illustrator), video editor (such as: Movie Maker, Power Director, Kine mAster, Filmore and Adobe Premiere), use a tablet/mobile device (smartphone), computer/laptop, connection devices (such as: Bluetooth, Wi-Fi, Hotspot), LCD projectors, and printer.

After gaining the result from teachers' comprehension in technological knowledge, the next finding was using that technological knowledge comprehension in designing lesson plans. The teachers' used of technological knowledge in designing lesson plans has been applied. The types of technology used by the teachers were computers/laptops, connection devices, Microsoft Office applications, online learning sources, and social media. And then, the categories that appeared most often were average, which appeared seven times. Second, the category was the most often appeared was high with the total number appearing four times.

Furthermore, the low category had two teachers. Finally, a very low category appeared once. However, the very high category was a category that did not have a respondent.

b. Technological Knowledge in Teachers' Teaching and Learning Process

The use of technological knowledge by the teachers in the teaching and learning process is already applied by the teachers. Based on the results from the teachers' questionnaire, most of the technology that appeared were social media (such as; Blog, WhatsApp, and Youtube), LMS (Learning Management System) platforms (such as; Google Classroom and Edmodo), software conferences (such as; Skype, Google Meet, and Zoom), Microsoft Office applications (such as; Word, Excel, and Powerpoint), Learning quiz maker and online assignment (such as: Kahoot, Google Form and Quizizz), learning games (such as: Bamboozle, Oodlu, and Mentimeter), use a tablet/mobile device (smartphone), computer/laptop, connection devices (such as: Bluetooth, Wi-Fi, Hotspot), and LCD projectors. Furthermore, the categories that appeared most often were averaged seven times. The second category that most often appeared was high, with the total number appearing four times. Furthermore, the low category had two teachers. Finally, a very low category appears once. However, the very high category was a category that did not have a respondent.

Then, the students' questionnaire informed that most teachers had used this technology. The technologies were social media (such as; Blog, WhatsApp, and Youtube), LMS (Learning Management System) platforms (such as; Google Classroom and Edmodo), software conferences (such as; Skype, Google Meet, and Zoom), use a tablet/mobile device (smartphone). Otherwise, the representative of teachers interviewed, stated the types of technology used by the teachers were computers/laptops, LCD projectors, LMS (Learning Management System) platforms (such as; Google Classroom and Edmodo), and social media (such as; Blog, WhatsApp, and Youtube). However, one of the representatives of the teacher in teaching and learning processes mentioned that rarely used technology.

Based on the finding in the teachers' questionnaire, students' questionnaire, and clarification of lesson plan by interview, there were some types of technologies used in the teaching and learning process from finding the same, and there was also a technology that appears consistently the same from the findings.

c. Technological Knowledge in Teachers' Assessing the Students

The use of technological knowledge by the teachers in assessing the students already applied in assessing the students. The results obtained from questionnaires and interviews had similarities in kinds of technology used by the teachers. The technology included computers/laptops, connection devices, Microsoft Office applications, and social media. And then, some of the teachers used Google Forms and Quizizz. The categories that appeared most often were average, which was nine teachers. Then the high category had two teachers. And then, for the very high, low, and very low categories. Each had one teacher.

2. Discussion

This research was conducted to know vocational school English teachers' technological knowledge used by the teachers in designing lesson plans, teaching and learning process, and assessing the students. Based on the findings, the researcher noticed that the technological knowledge already applied by teachers when they design lesson plan, conduct teaching and learning process, and assess the students. As indicated by Trilling & Fadel (2009), using technology by teachers during learning was one technique to obtain the 21st century abilities that students master. the talents that must be acquired in this period are:

1) abilities in learning and creativity, This ability refered to how a teacher can make the students to be critical thinkers and problem solvers by applying Bloom's Taxonomy. Bloom's taxonomy included remembering, understanding, applying, analyzing, evaluating, and creating. The next skill is communication and collaboration. To fulfill this skill, the teachers can use digital tools to practice the students' communication by working in groups. And the last was creativity and innovation. The teachers can make various learning activities and exercises for students by integrating technology into the teaching and learning process. Otherwise, the data that the researcher found showed that many teachers did not utilise the maximum use of technology. However, based on the teachers' point of view, they used several types of technology in learning, such as social media, Microsoft Office applications, learning games, conference software, Google Workspace, computers or laptops, LCD projectors, and connected devices. However, the student's point of view stated the technology used by teachers when carrying out the learning process was social media, Microsoft applications, computers, or laptops. Therefore, the technology used by the teachers, according to the students and teachers, were different types of technology. So the technology used during the teaching and learning process from both points of view was Microsoft social media applications and laptop computers. So it can be concluded that the technology used was not varied, so there was no innovation in learning.

2) Knowledge of information, media, and technology. The second ability that students must have is to absorb media and technology information, where students are required to filter the information obtained. Students must access the information accurately and effectively, then evaluate the information critically and competently and ultimately use the information accurately and creatively.

3) Individual and career development. The next skill is individual and career development; in this case, students must have flexible skills and the ability to adapt. It can be achieved by students working on projects where they will work in groups and solve the problems they face. That is why adopting digital tools will help achieve the skills described above. Based on the theory above, teachers need to design lesson plans by directing students to achieve the skills that have been mentioned. However, in the data obtained in designing lesson plans, the teachers have applied technology by taking material for lesson plan needed from various webs. For example, Microsoft Word, computer connection devices, online learning sources, social media, and the internet are technologies that are often used in designing lesson plans.

In addition (Trilling & Fadel, 2009) mentions that after implementing various ways to achieve the skills needed by students in the 21st century, an assessment is needed to assess students. Technology-based assessments were the easiest way for teachers to provide assessments to students. The application of technology in assessing students was a new thing that teachers can apply as one way to follow 21st-century learning. However, based on the data obtained, the teachers claimed they had used technology in assessing the students. The technologies were in the form of Microsoft Excel and a computer or laptop. Some teachers also claimed they had used Quizzz and Google forms as the technology in giving the students assignments and assessments. In contrast, some of the teachers assessed students using the conventional way; namely, students made assignments in exercise books and scored them.

As indicated by Trilling & Fadel (2009), using technology by teachers during learning was one technique to obtain the 21st century abilities that students master. As a result, to meet learning objectives in this modern period, the teacher must broaden his/her understanding the design and development of technology in educational sector (Keengwe et al., 2009). In addition, he stated that using this flexible technology could create a more meaningful learning process and use technology in learning to make the learning process student-center. So the students will be creative in learning with the guidance of teachers. Therefore, teachers must design active, innovative, student-center learning in creating lesson plans. As a result, it was possible to assume that technology was a tool for educators in developing the learning process (Mccormick,& Scrimshaw, 2001).

Besides that, the researcher found a difference between schools with A accreditation and B accreditation in applying technological knowledge in a vocational school. The teachers in schools with A accreditation have better technological knowledge due to the supporting facilities. Otherwise, teachers in B-accredited schools rarely use technology because their facilities are lacking. Therefore, even though the use of technological knowledge was more often by the school with A accreditation than B accreditation, each school should improve its knowledge in technology and the usage of technological knowledge to make learning more accessible, more innovative and more fun.

CONCLUSION

From the findings and discussion explained in the previous chapter, the researcher concluded that vocational school English teachers' technological knowledge in Bukittinggi city already implemented. They were in designing lesson plan, teaching and learning process and assessing the students. In addition, the technologies most often used by the teachers were social media platform, Microsoft Office application, mobile device, and computer/laptop. Thus, this showed a positive result that the use of technological knowledge by vocational school English teachers truly implemented in teaching and learning processes. However, the teachers need to widen their knowledge and applied the educational technology in order to make learning process more innovative and fun.

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