



Teacher Practices using Computer Assisted Instruction (CAI) with Technological Pedagogical Content Knowledge (TPACK) framework in English Classroom at the Elementary School

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ABSTRACT

This study was conducted to identify teacher practices in implementing Computer Assisted Instruction in English Language Learning in elementary school classes based on the TPACK framework and to explore EFL teachers' perception of using Computer Assisted Instruction learning models in elementary school classes. This study used a descriptive qualitative research method. English teachers in 2 private schools in Makassar, namely the first in SD Islam Athirah 2 Makassar and SD IT Darul Fikri Makassar, were selected as research subjects. Data were collected through observation and interviews. The result of this study indicated that (1) all teachers who were the study subjects used the CAI learning model with the explanation from Chan and Tsai (2005) that Computer-assisted learning is a learning method that uses technology. In this research, technology does not stand alone. Still, it is integrated with other aspects, and this combination is called the TPACK framework, which consists of three main elements and four meeting points. Shulman (1986) was the first person to develop the TPACK framework, which was later expanded by Mishra and Koehler (2006) by adding technology elements between them so that CAI learning models could be achieved well. (2) There are two main perspectives, namely, teachers assume that this learning method is very effective if applied in elementary schools but with some important notes such as teacher ability both in the form of providing student learning media to handling student activities in class and teacher understanding of using technology to support enjoyable learning. The teachers agree that this learning model makes students very happy in the learning process and makes it easy to understand the material to get high learning motivation. The researcher hopes that this research can contribute positively and benefit researchers, EFL teachers, students, and other fellow researchers.

Keywords: *Computer Assisted Instruction, TPACK, EFL Teacher*

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1. INTRODUCTION

Information technology has become a vital part of human life in today's digital era. The role of information technology now effectively covers various fields, especially in the field of education. This is because education is one of the main ways to improve and develop human resource competencies (Buntoro, 2018). Technology and media are very influential in the world of education. It can be seen that if the focus of learning is only on the role of the teacher, then media and technology can be used to deliver learning materials. On the other hand, when the emphasis is on the students, media, and technology can act as facilitators to assist students in completing their assignments or repeating learning materials. This helps students to access the material that has been delivered by the teacher more easily and effectively.

Furthermore, using technology and media in the learning process is very important to attract students' attention and make their education and learning activities more interesting and successful (Septinawati et al., 2020). The use of technology in the learning process has changed the educational landscape, opening up new opportunities to improve learning activities, accessibility, and effectiveness. Technology serves as a teaching assistant and stimulates students' creativity through educational apps and platforms. With the adoption of technology-based learning systems, teachers can provide personalized learning experiences, considering the unique needs of each student.

Kayan and Aydin (2020) examined how a method in the teaching process can be developed and how it impacts the knowledge that students will gain. For example, there are many technology-based methods, and one of them is the computer-assisted instruction (CAI) method, which is the way students learn and the way teachers teach in the classroom. CAI is a learning method that involves using computers as a tool in the teaching process. It can present learning materials in an interactive multimedia format, including texts, images, sounds, and videos. The uniqueness of CAI lies in its ability to provide learning, particularly to students' individual needs, allowing for a high degree of personalization. Morrison and Kalman (2019) further explained that implementing CAI allows students to learn through tutorials, interactive exercises, and other computer-based activities, creating a more dynamic and engaged learning experience. Therefore, the application of CAI facilitates the understanding of course concepts and develops students' technological skills.

Additionally, educators need to integrate technology with technological pedagogical content knowledge (TPACK) to ensure that technology substantially supports the teaching of subject matter (Koehler & Mishra, 2005). TPACK refers to the knowledge teachers possess on effectively integrating technology in the learning process, particularly in the context of specific subject matter (Mishra & Koehler, 2006). TPACK combines three main dimensions, namely technological knowledge (T), pedagogical knowledge (P), and content knowledge (C), into expertise that describes how technology can be optimized to support learning objectives by considering the characteristics of students and subject matter (Mishra & Koehler 2006). In the learning process using technology, teachers with strong TPACK can identify and select the most appropriate technological tools and strategies to deliver the material effectively. They can also design learning activities integrating technology to strengthen students' understanding of the lesson content.

Over and above that, the integration of CAI with the TPACK provides several benefits. When educational leaders better understand how teachers use technology, they can lead the growth and development of technology instruction with better decisions (Butin, 2010). These decisions could relate to purchasing technology and software, professional development and training, and setting teacher expectations. Overall, the results of this study can benefit students, teachers, and administrators.

Moreover, the number of studies on the CAI integrated into TPACK is still small. Some studies only conduct middle- to tertiary-level classroom studies (Wondal, 2015; Ismayati, 2009; Rochim, 2010). At the same time, research that discusses the use of computer-assisted instruction-based learning models in the English language learning process at the primary school level is still limited. Research from Huang (2012) has been done about using technology in teaching and learning, especially in the primary school classroom. This study concludes that such a tailor-made e-book learning system could achieve a better personalized learning experience for elementary school students. In short, research that examines the perceptions and practices of teachers using Computer Assisted Instruction (CAI) in the classroom learning process is still lacking, especially at the elementary school level and by integrating with Technological Pedagogical Content Knowledge (TPACK). Thus, this encourages the researcher to study how teachers at the primary school level perceive and practice the learning process in the classroom using Computer Assisted Instruction (CAI). The purpose of this study is to provide an understanding of how teachers use and perceive technology in the learning process and to assist professional development training, especially for teachers that can be used by educational leaders and technology trainers to provide an understanding of teacher perceptions and practices in using CAI in the classroom learning process with a focus on SCCAI.

2. METHOD

The method comprises design, procedure, data analysis, and other related issues.

2.1. Research Design

This study aimed to analyze the practices and perceptions that EFL teachers use student-centered computer-assisted instruction with the TPACK framework. Therefore, the appropriate method was the multiple case study method.

A multiple-case study has been selected to address the topic of computer-assisted instruction. This multiple-case study examined the practices and perceptions of teachers at the two primary schools. The researcher involves English teachers who used Computer-Assisted Instruction (CAI) in their learning and teaching process. 4 teachers participated in this study. These teachers teach at different levels, including the lower level (grades 1, 2 and 3) and the higher level (grades 4, 5 and 6). These teachers have demonstrated a basic understanding of computer tools and technology in the classroom.

Frey (2018) explains that a case study is a way to gain deep insight into a particular phenomenon. Using case studies, one can explore the phenomenon and understand its processes. This research helps answer questions about primary school teachers' views on Computer Assisted Instruction (CAI) and the types of CAI used in the classroom. Using

open-ended interview questions, volunteer teachers described their classroom use of computer-assisted instruction and the technologies involved. By looking at the survey and interview response data, one can better reflect and represent any information obtained from the study. This leads to a better understanding based on the data and generates specific themes on how teachers perceive CAI and the use of CAI in the classroom to differentiate instruction

2.2. Research Participant

This research was conducted in Makassar, especially on teachers in 2 schools. The first is Athirah Islamic Elementary School 2 Makassar and SIT Darul Fikri Makassar. Based on the results of personal communication and observations with the teachers of two elementary schools, the researcher found that the teachers were required to use Computer-Assisted Instruction in the English learning process.

Therefore, the researcher selected English teachers who teach using the computer in the learning and teaching process, from grade 1 to grade 6, which were divided into 2 participants in each school, namely 1 teacher who teaches in the lower classes (grades 1, 2 and 3) and 1 teacher who teaches in higher classes (grades 4, 5 and 6). Therefore, the 4 teachers are the subject of this research. Furthermore, a cross-case analysis was selected to compare the teachers' perceptions and practices of implementing technology in both classrooms.

2.3. Research Instrument

2.3.1. Observation Checklist

According to Sugiyono (2018), observation is a data collection technique with specific characteristics compared to other techniques. Observation is also not limited to people but also other natural objects. Through observation, researchers can learn about behavior and the meaning of that behavior. Observation in this study is making direct observations in the field to find out the actual conditions carried out by the teacher in the learning process using computer-assisted instruction. To facilitate and streamline these observations, the researcher adapted the observation checklist from (the TPACK Observation Checklist-MEIS (Michigan Information Education System)). This sheet includes information such as the teacher's name, time, observer name, and specific aspects relevant to the research focus, which the teacher practices using student-centered CAI with the TPACK approach. Moreover, to ensure the validity and effectiveness of the observation results, the researcher recorded all classroom interactions between the teacher and students using a video and audio recorder.

2.3.2. Interview

According to Mills and Gay (2016), an interview is a deliberate interaction between a researcher and a respondent. The main purpose of this interaction is to obtain relevant information from the respondent's perspective. The main purpose of the interviews is to explore and understand teachers' perceptions towards implementing computer-assisted instruction (CAI) learning media in English language learning. With this system, the researcher sought to understand teachers' perspectives on using technology in learning. The researcher asked 8 questions about the teacher's perception of using student-centered CAI with the TPACK approach and 8 questions to get the teacher's perception. The interview was audio-recorded with their permission. The researcher asked 8 questions that he had prepared before. Still, if an extra question is based on the teacher's statement, the researcher can ask an open-ended question to understand the teacher's perception of using CAI with the TPACK approach.

2.4. Technique of Data Collection

2.4.1. Observation

According to Yusuf (2013), the key to the success of observation as a technique in data collection is very much determined by the researcher because the researcher sees and listens to the object of research and then concludes from what is observed. The researcher who gives meaning to what he observes in reality and a natural context is the one who asks and also sees how the relationship between one aspect and another aspect of the object being studied.

2.4.2. Semi Structure Interview

According to Mills and Gay (2016), an interview is a deliberate interaction between a researcher and a respondent. The main purpose of this interaction is to obtain relevant information from the respondent's perspective. The main purpose of the interviews is to explore and understand teachers' perceptions towards implementing computer-assisted instruction (CAI) learning media in English language learning. With this system, the researcher sought to understand teachers' perspectives on using technology in learning.

The semi-structured interview guide approach was used in this research to ensure that the same main areas of information were gathered from each respondent. This offers a more narrow emphasis than a conversational technique while still giving the researcher some latitude and flexibility to gather data from the interviewed teachers. The interview questions were open-ended. Thus, the participant can explain their answers as creatively as possible.

2.5. Data Analysis

In this research, the researcher used Miles, Huberman, and Saldana's theory (2014) about the methodology that can be used to analyze qualitative research. They said data analysis can be formulated through three stages: data reduction, display, and conclusion drawing or verification.

2.5.1. Data Reduction

Reducing the data means summarizing, selecting the main points, concentrating on significant information, and identifying the topic and the form. The researcher collected the data from the observation and interview with the EFL teachers. In the observation, the researcher only focused on the teacher's practices using CAI with the TPACK approach during the learning and teaching process. After that, the researcher interviewed the teacher about the teacher's perception of using CAI with the TPACK approach during the learning and teaching process by using the interview questions that had been prepared by the researcher before.

2.5.2. Data Display

Displaying the data to get clearer visibility about the phenomena of interest. The researchers present their data narratively, and this research follows the same approach. Doing this step helped the researcher understand what was happening and analyze the data that the researcher got in the observation and the interview.

2.5.3. Conclusion

Conclusion or verification. The researcher started to identify the data. The conclusion was the finding that has not been there. The findings could be in the form of a description of an object not previously identified. The verification is connected to the conclusion explain. The researcher was required to review the data as much as possible to cross-check and verify the conclusions about the teacher practices and perception of CAI with the TPACK framework during the learning and teaching process.

3. RESULTS

The data in this study were collected through two methods, namely classroom observation and interviews using stimulated recall. This study aims to identify how English teachers' practices and perceptions of the CAI learning model with TPACK in the classroom learning process. Firstly, the researcher conducted classroom observations to observe how the teachers practice conducting the English language learning process using CAI and its integration in TPACK. Next, after observing the teachers, the researcher conducted semi-structured interviews to understand their perceptions of using CAI in the English learning process integrated with TPACK in the classroom.

3.1. Teachers Practice Using Computer-Assisted Instruction (CAI) in a TPACK Framework-Based Classroom.

The first research question in this study is about the practice of English teachers in primary schools on using TPACK in the CAI learning model in teaching English. In collecting data, the researcher used observation checklists and recording devices. Based on the research conducted in 2 elementary schools in Makassar, the findings showed that English teachers in 2 elementary schools in Makassar used the CAI learning model with TPACK in learning English in their classroom, practice using CAI with TPACK integration

3.1.1. Technological Knowledge

In observations made in 2 elementary schools in Makassar, it was found that the teachers who are the subject of this study use computer hardware in the form of input devices, processing devices, and output devices. In contrast, P1 and P2 teachers at Athirah Bukit Baruga Islamic School use the applications that the school has facilitated. Meanwhile, P3 and P4 teachers at SIT Darul Fikri Makassar use learning applications provided by the books they use, so schools work with book publishers to facilitate students and teachers in applying the CAI learning model.

3.1.2. Content Knowledge

students are more active in the classroom learning process. From this, the teacher provided various materials or games relevant to the learned material. However, in providing student references, teachers also use printed, printed, and electronic books to get relevant content in English subjects. Then, to reinforce the lesson material, the teachers always ask students questions about the last material from the previous meeting. In the previous meeting, before the lesson starts, the teacher also gives assignments prepared in the application provided by the school so that students can repeat the material and do the assignments and games that the teacher has prepared beforehand in the application.

3.1.3. Pedagogical Knowledge

English teachers demonstrate their ability to impart knowledge through the Creativity Programme (PK) by inspiring all students to develop fully. Teachers demonstrate an understanding of different student learning styles. They use the application that the school has provided with a feature of whether the student has read the material or not, and there is also a feature to show whether the student is satisfied or happy in studying the material or not so that teachers can create a reflection through this feature.

3.1.4. Pedagogical Content Knowledge

The teachers make lesson plans, but some adopt them from the MGMP. It was revealed that they prepare educational administration, such as learning plans, syllabi, annual programs, and the semester program itself. It can be said that the preparation of educational administration is a crucial aspect since it is the determinant and guide of the direction to be achieved. Then, the teacher simplifies lessons that are difficult for students to understand. Some of them use video tutorials that they make themselves, and they have uploaded them to the application provided by the school to improve student skills, such as listening and speaking skills.

3.1.5. Technological Content Knowledge

Teachers help students use technology, especially in lower grades I-III, to investigate and construct meaning from the complex ideas they are learning. They help students who don't seem to understand how to operate the technology by allowing students to ask questions and give them a detailed explanation of how to use the technology. Finally, the teacher uses all visual aids, including attractive digital resources (layout), to support the theme/content of the lesson, such as images and videos related to the topic.

3.1.6. Technological Pedagogical Knowledge

Teachers know the technology or media they use, as evidenced by their ability to direct students or assist students in operating their devices to access material the teacher has previously prepared. This can help teachers and students because students can access the material they will study wherever and whenever they want to access it. Teachers can also help make their work easier by making students fully understand the material presented by the teacher.

3.1.7. Technological Pedagogical Content Knowledge

The observations by researchers revealed that English teachers are quite good at teaching lessons that combine appropriate subject content, technology, and teaching & learning approaches. Some of them admitted that they taught material with appropriate teaching methods using supporting technology, namely CAI with a student center based on the TPACK framework through technology or applications that had been provided or facilitated by the school to make it easier for teachers to teach and make students feel interested in learning English. The application has many features the school has prepared, such as online assignment work, several games, and learning materials and videos. This can help students increase interest and enthusiasm in learning, especially English.

3.2. Teacher perception toward the use of Computer-Assisted Instruction (CAI) with TPACK framework-based classroom

Generally, teachers use the CAI learning method for various reasons. In this section, the researcher will reveal teachers' perceptions about using the CAI of the TPACK framework with the English learning model in the classroom learning process. Therefore, based on semi-structured interviews conducted with teachers, researchers found the perceptions of English teachers in elementary schools regarding using TPACK in the CAI learning model in the classroom learning process.

3.2.1. Technological Readiness

The first part is technological readiness, where the researcher sees how the teacher's perception of technological readiness occurs in learning English in the classroom.

P1

(28/03/2024)

“eh untuk kesiapan kami di khususnya di sekolah kami sekol SD Islam Atira Bukit Baruga Alhamdulillah ee untuk ee kesiapan medianya ee sudah ada khusus untuk Lab komputernya Jadi kami bisa menggunakannya ee pada jam-jam kami walaupun Ee tidak e setiap harinya tapi kami e jadwal”

P2

(01/04/2024)

“Sebenarnya kalau terkait penggunaan teknologi baik dari guru maupun siswa itu sendiri di sekolah kami sudah si karena itu kami difasilitasi dengan adanya LCD kemudian speaker di setiap kelas untuk menunjang Eh kalau misalnya ada materi untuk listening kemudian eh dari segi siswa itu sendiri biasanya eh kami menginfokan du hari sebelumnya supaya siswa itu membawa e device pada saat pembelajaran tersebut ya jadi saya rasa siap.”

P3

(25/03/2024)

“Di sini kita punya Smart TV dan saya juga kalau untuk e spesifik mata pelajaran bahasa Inggris kita ada ebooknya jadi dari laptop kita koneksikan ke Smart tv-nya”

P4

(25/03/2024)

“Di sini e saya tentu saja menggunakan laptop yang mumpuni eh dan speaker Karena untuk pengeras suara kita tentu saja butuh speaker agar anak-anak yang lain itu mendengar dengan baik apalagi level 4 Ya karena ya mereka butuh pendengaran yang cukup baik untuk mereka apalagi English nah di English pasti mereka perlu juga listening seperti itu”

Based on the data above, the technology supporting the CAI learning model in the English learning process is sufficient. With a computer lab, English teachers can use it to implement the English learning model. In addition to students who can take the initiative to bring devices in the form of laptops, the school also provides a computer lab for students to learn English by applying the learning model.

3.2.2. The use of CAI learning models in English subjects in class.

Part 2 is about how often English teachers use CAI in the English learning process in a week or month.

P1

(28/03/2024)

“eh ya kami usahakan e setiap semester ada eh ada pembelajaran bahasa Inggris yang menggunakan e komputer atau berbasis komputer yang dimaksud e Jadi kami usahakan mengatur jadwal mungkin minimal sekali sebulan atau kalau tidak bisa kami gunakan di komputer kami juga bisa menggunakannya Di kelas kebetulan ada media yang EE disiapkan oleh sekolah seperti LCD dan lain-lainnya”

P2

(01/04/2024)

” Eh kadang kadang-kadang sesuai dengan itu tadi Kembali ke yang tadi kalau misalnya materinya membutuhkan, Eh guru menggunakan teknologi ya kami gunakan.”

P3

(25/03/2024)

“Hampir setiap eh jam bahasa Inggris kami gunakan”

P4

(25/03/2024)

“Oke dalam penggunaan teknologi pada proses pembelajaran yang saya gunakan ini cukup sering sebulan tergantung pada materi yang saya gunakan apakah membutuhkan teknologi seperti penampilan gambar dan seperti video atau audio”

Based on the data above, the English teacher always applies the CAI learning model in every English lesson in the English teaching and learning process. For English classes or bilingual classes, there are 4 hours a week, while for regular classes, there are 2 hours a week. They use the CAI learning model depending on the material or chapter they want to teach, so they use the CAI learning model to teach the material.

3.2.3. Barriers faced by teachers and how to handle it

The 3rd part is about the barriers the teacher faces when using the CAI learning models and how they fix them.

P1

(28/03/2024)

“Oh iya untuk hambatannya eh yang pertama itu adalah dari siswanya sendiri Eh mengapa karena sebagian dari siswa apabila ee apa namanya telah menyelesaikan ee materi e sebagian dari mereka kadang membuka beberapa aplikasi yang kami tidak bisa koordinir jadi itu yang menjadi hambatan kami yang kedua e Kalau kami gunakan di lab tidak semua siswa bisa menggunakan e personal komputernya jadi sebagian dari mereka ada yang berdua atau beberapa orang dalam satu personal komputer seperti itu.”

P2

(01/04/2024)

“ya variatif sih soal hambatannya pertama itu eh yang namanya teknologi kan kita juga terkendala pada penggunaan jaringan Apakah juga itu dikarenakan device-nya siswa lowbet atau komputernya guru yang lowbet kemudian eh terkadang juga kalau misalnya kita ee di sekolah kita kan ada namanya aplikasi Simdik jadi di aplikasi Simdik itu siswa bisa membuka latihan ataupun mengerjakan ee ujian di aplikasi tersebut jadi terkadang siswa itu lupa password untuk masuk ke akunnya jadi itu juga merupakan salah satu hambatan kalau hambatan lainnya juga terkait dengan e software dari simd itu sendiri ya itu saja”

P3

(25/03/2024)

“hambatan mungkin hambatan lebih ke saya sendiri ya jadi saya harus menambah lagi pengetahuannya tentang beberapa teknologi dan menyesuaikan dengan kemampuan studentsnya juga.”

P4

(25/03/2024)

“Nah hambatan-hambatan yang e sekiranya pernah saya alami saat penggunaan teknologi di sini seperti penyediaan sarana dan prasarana yang cukup cuman mungkin perlu beberapa kondisi kita perlu penyediaan yang lebih lagi seperti itu”

Based on the data above, through the Simdik application, which students can access, sometimes students forget the password, which can hinder the learning process, and it takes time to report these obstacles first to the school IT team. so that English teachers can save or request a list of Simdik Application passwords from each student. So that if students forget, the English teacher can tell them the password. Then the second problem is if the student's network has a problem or runs out, the teacher can tell the student about the wifi that the school has provided. Teachers still need several references in the form of applying computers in the learning process, so the teacher has to learn again using references on social media.

3.2.4. effectiveness of using the CAI learning model in English language learning.

P1

(28/03/2024)

“saya pikir sangat efektif karena sangat membantu ee kami khususnya guru ee agar ee Siswa kami bisa ee menerima pelajaran e melalui komputer tersebut e Jadi kami dimudahkan dengan adanya aplikasi e apa namanya yang berbasis kepada komputer tentu saja yang sesuai dengan mapel atau mata pelajaran Bahasa Inggris itu sendiri”

P2

(01/04/2024)

“iyaapa efektif efektif Sis Eh apalagi dalam pembelajaran bahasa Inggris itu kan harus lebih menarik lebih fun Nah dengan adanya bantuan teknologi ee memudahkan guru untuk menyajikan materi dengan lebih variatif lebih beragam dan lebih menarik bagi siswa.”

P3

(25/03/2024)

“Sangat efek karena lebih menarik pembelajaran dengan media apa lagi media teknologi berarti Siswa lebih aktif Kalau menggunakannya.”

P4

(25/03/2024)

“Oke untuk keefektifan penggunaan teknologi dalam proses pembelajaran apalagi ini adalah di level tinggi di mana mereka itu sudah memasuki fase-fase yang e aduh bosan ini ini saja model pembelajarannya materinya ini ini saja nah dengan penyediaan teknologi dalam proses pembelajaran e membuat mereka lebih semangat lagi sehingga keefektifan itu cukup efektif untuk mereka dan penangkapan media atau materi yang mereka inginkan itu ee mampu mereka resap mampu mereka terima dengan baik karena eh hal atau materi yang tidak monoton yang sudah kita siapkan untuk mereka”

Based on the data, teachers explained that applying the CAI learning model was very effective because today's students are very fluent and more interested in technology, so that they can feel happy in the English learning process.

3.2.5. The role of school administration

P1

(28/03/2024)

“kebetulan di sekolah kami kadang ada pelahan yang khusus guru tentang perkembang ICT Jadi biasanya kami didaftar dan dijadwal tentang pelatihan tersebut”

P2

(01/04/2024)

“kalau untuk sekarang ini pengajaran bahasa Inggris ya kalau athirah itu sendiri aktif eh di aktif eh apa mengikutkan guru-gurunya untuk mengikuti pelatihan seperti yang baru-baru ini kami ada pelatihan eh bekerja sama dengan eh publisher oleh Cambridge yang namanya Mentari eh difasilitasi dengan eh Mister Otto Jadi kami eh diikutkan untuk pelatihan Bagaimana mengajarkan bahasa Inggris lebih menarik dan lebih fun dan itu e hampir dua kali setahun kami diikutkan pelatihan terkait pengajaran bahasa Inggris.”

P3

(25/03/2024)

“Alhamdulillah kita sudah dikenalkan tentang metode tersebut dan dari penerbit buku juga sudah memfasilitasinya jadi alhamdulillah ada kemudahan untuk penggunaannya”

P4

(25/03/2024)

“untuk pengembangan teknologi tersebut ya kita tentu saja kita akan melakukan referensi pencarian referensi di media lain dan sharing to caring with another people yang lebih lebih bisa dan lebih e pengetahuannya lebih lagi daripada kita itu sekiranya yang bisa saya lakukan untuk menambah lagi referensi penggunaan teknologi yang sudah dan yang akan saya gunakan pada proses pembelajaran.”

The data above explained that about training for teachers in applying the CAI learning model in the English learning process, but P2 added that they were also given special training for English teachers with Mister Otto, so teachers, especially English teachers, were included in training How to teach English more interestingly and have more fun using the CAI learning model, school's support by collaborating with publishers who have e-books that can support the CAI learning model. The publisher makes it easier for teachers by providing media in e-books that can make students interested and enthusiastic in learning English.

3.2.6. Teachers' views on the use of CAI in English language learning

This is the last part of the teacher's perception of using the CAI learning model in the teaching and learning process in the classroom.

P1

(28/03/2024)

“sangat penting menurut saya apalagi di ee zaman sekarang karena ICT sangat ee membantu ee di ee apa namanya dalam segala aspek termasuk salah satunya bidang pendidikan aspek pendidikan jadi sangat membantu kami untuk ee memberikan pelajaran kepada siswa kami khususnya di sekolah dasar.”

P2

(01/04/2024)

“sangat penting menurut saya, karena meskipun eh masih tingkatan primary Eh tapi eh untuk eh pembelajaran bahasa Inggris itu harus sudah menarik bagi siswa itu sendiri”

P3

(25/03/2024)

“Sangat penting sih, apagi melihat kebutuhan anak-anak sekarang untuk lebih mengembangkan pengetahuan mereka jadi dikenalkan juga tentang teknologi sejak dini.”

P4

(25/03/2024)

“untuk penting atau tidaknya penggunaan teknologi tentu saja penting, di era sekarang kita itu di mana e era global globalisasi kita kita sebut 3.0 nah di situ penggunaan teknologi sudah sangat meningkat jadi untuk menyesuaikan ee untuk menyesuaikan kondisi atau lingkungan kita yang sudah semakin meningkat Alhamdulillah ini kita tentu saja perlu dan pentingnya untuk penggunaan teknologi agar terhindar dari kata gptek tersebut seperti itu.”

Based on the data, implementing the CAI learning model is very important because it can help teachers and students learn. By implementing CAI, students can learn enthusiastically and enjoy learning English. Implementing the CAI learning model was very important so that students could learn enthusiastically and their technology knowledge could be developed simultaneously with English learning.

4. DISCUSSION

The second part of Chapter 4 discusses data collection from study findings obtained by researchers from observations and interviews. The researcher conducted data analysis to describe further the findings described above

in the first part. Just like in the findings section above, in this section, the researcher talks about the practices carried out by teachers regarding CAI in the English language learning process and how teachers' perceptions of applying the CAI learning model in the English language learning process in the classroom. The literature review identified a need to examine how teachers use CAI in the classroom and how they perceive the use of CAI in the classroom. As most previous research focused on student achievement, there is a lack of information regarding teachers' perceptions and usage. An online survey allows data collection on using and perceiving computer-assisted instructional tools in the elementary school classroom. The results of this research study were used to build on the lack of knowledge on this topic in teacher teachers' perceptions and practices and answer the following two questions. The following information is collected based on the findings of this study:

4.1. Teachers Practice Using Computer-Assisted Instruction (CAI) in a TPACK Framework-Based Classroom.

This research shows that teachers play a crucial role in successfully implementing CAI. By mastering TPACK, teachers can integrate technology effectively into the learning process so that students become more active and engaged. Mishra and Koehler (2006) view TPACK as a comprehensive framework for understanding and applying technology in teaching. The findings show that EFL teachers in primary schools in Makassar city have implemented the seven key values of TPACK. Firstly, the findings on teachers' technological knowledge (TK) based on Mirsha and Koehler's (2006) TK framework show that English teachers have a high level of TK. This can be seen from the school's support of essential technology tools for learning and teaching processes. Despite the differences in the use of media or applications, both schools have shown excellent use of TK.

The second aspect of the TPACK framework, namely content knowledge (CK), shows that EFL teachers can organize content by providing materials and separating them into easy-to-understand categories or components using various references. The presentation of the material is also very well packaged. The teacher prepares several games and reference videos to support students' English learning at the primary school level so that students do not feel bored with the material they have to learn. The teacher also prepares material on the application page that students can access so that they can repeat the material and learning media whenever they want to repeat the material they have learned before with the English teacher.

In pedagogical knowledge (PK), teachers have good pedagogical knowledge and teaching strategies. Pedagogical knowledge is the third element of TPACK, as based on Mirsha and Koehler (2006). This can be seen from the media prepared by the teacher, which is so diverse to support the student learning process. Students can feel happy with the learning process because the media prepared is diverse, such as reference videos, videos about the material, and worksheet games that are colorful and full of pictures.

In Technological Content Knowledge (TCK) and Pedagogical Content Knowledge (TPK), teachers show good mastery, as evidenced by the use of applications that schools and teachers have provided to prepare various references in the form of e-books or learning videos to worksheets that can be done by students in the application so that students feel challenged to complete the worksheet by studying the material that the teacher has prepared in the application. Based on these aspects, it can be said that teachers from 2 primary schools in Makassar have implemented Technological Pedagogical Content Knowledge very well.

Costley (2014) states that technology provides meaningful learning experiences. The TPACK model allows teachers to transfer content knowledge to students and help students learn better through their practice and experience dealing with technological terms (Misirli, 2016). Furthermore, the findings from these studies show that integrating technology in the classroom, especially for English classes, has a good impact on the learning process and for learners at the elementary school level (Costley, 2014; Lubis, 2016).

This study's results show that applying CAI with the TPACK approach can improve students' motivation and learning outcomes. This finding aligns with previous research conducted by Melka (2022). However, this study also found that factors such as student characteristics and the subject being taught can affect the effectiveness of CAI implementation. This suggests that the application of CAI needs to be adapted to the specific learning context. As stated by Melka (2022), the success of CAI implementation depends not only on the technology used but also on good learning design and support from the school environment.

4.2. Teacher Perception Toward Using Student-Centred Computer-Assisted Instruction (CAI) With Tpack Framework-Based Classroom.

The 4 teachers are very happy with applying CAI in the learning process because students are very happy and always eager to learn English when doing the CAI learning model, and students can repeat the learning process wherever and whenever they are with the help of applications provided by the school. However, slightly different from the level of confidence of the teachers, teachers from the 2 primary schools that have been studied show a lack of confidence in their level of understanding of the use of technology in the English language learning process, so that with this research, it can help school leaders or school administration to provide training and facilities to support the implementation of student-focused CAI learning processes.

Based on the research results, many teachers understand the importance of CAI in improving the quality of learning. They realize that CAI can help students be more active and interactive in learning. For example, Koehler and Mishra (2009) stated that TPACK is about technological ability and integrating technology with content knowledge and pedagogy to create a more dynamic and engaging learning experience. Thus, CAI can be used to increase student engagement and make learning more relevant to their needs.

Furthermore, besides the challenges teachers face, integrating technology in the classroom also brings good learning opportunities for teachers and students. Firstly, challenging tasks that motivate students to participate in class activities actively also motivate teachers to develop better in personal development. Students in this modern era are born with technology, which makes them always curious about technology. When curious, they will learn about the technology while the teacher delivers the material. Teachers also have the opportunity to learn new things related to technology that they have never known before and improve their professional development. Secondly, it is believed that when someone feels happy doing something, the result will be better than when they are forced to. Therefore, when students feel happy during the teaching and learning process, they will get better results (Willis, 2007). Therefore, to create a fun classroom environment, technology integration is one of the solutions that can provide students with the opportunity to produce multimodal products. In line with this, Himmelsbach (2019) reported that with technology integration, there are countless resources to improve education and make learning more fun and effective.

5. CONCLUSION

Using the same method will not produce a good learning environment; without a good learning environment, the results will not be as good as expected. Therefore, technology comes with an attractive offer that provides innovation that allows teachers and students to develop better. In this research, technology does not stand alone. Still, it is integrated with other aspects, and this combination is called the TPACK framework, which consists of three main elements and four meeting points so that the CAI learning model can be achieved well. This framework gives English teachers a new perspective on teaching English so that students can feel happy when learning English.

The four teachers who participated in this research agreed that applying the CAI learning model in the English language learning process can make students more excited and more active in the English language learning process in the classroom. Students can also better understand the material provided by the teacher because students can repeat the material that the teacher has presented. With the application the school has prepared, students can repeat material previously presented by the teacher. Students can also be more active in understanding the material provided by the teacher with games or worksheets that the teacher has prepared. Apart from that, with games and worksheets that the teacher has prepared in applications that the school has prepared, teachers also benefit by being able to easily measure students' skills and knowledge by looking at the scores obtained by students in the games or worksheets.

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