Effect of CALL Awareness on EFL Teachers' Technology Integration in the Classroom

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الملخص

استقصت هذه الدراسة الوعي بتعلم اللغة بمساعدة الحاسوب لمعلمي اللغة الإنجليزية كلغة أجنبية، واستخدامهم للموارد التكنولوجية للتدريس، وما إذا كان هناك ارتباط بين وعيهم التكنولوجي واستخدامهم للموارد والمصادر الرقمية. أجريت الدراسة بعد استئناف التدريس وجهًا لوجه بعد الإغلاق بسبب تفشي جائحة كورونا (كوفيد -19). وقد تم استخدام تصميم البحث الاستقصائي في إجراء هذه الدراسة. تم اختيار عينة الدراسة (ع = 40) بشكل عشوائي من مجتمع معلمي وموجهي اللغة الإنجليزية كلغة أجنبية في معهد اللغة الإنجليزية والسنة التحضيرية بالجبيل في المملكة العربية السعودية. وقد تم جمع البيانات من خلال اختبار (المعرفة المفاهيمية لاختبار تعلم اللغة بمساعدة الحاسوب) والاستقصاء بالإبلاغ الذاتي (استقصاء استخدام تعلم اللغة بمساعدة الحاسوب). تم الافتراض بأنه سيكون هناك علاقة إيجابية ذات دلالة إحصائية بين وعي المعلمين بتعلم اللغة بمساعدة الحاسوب ودمجهم التكنولوجي لتدريس اللغة الإنجليزية. وتم تحليل النتائج باستخدام الإحصاء الوصفي والاستنتاجي. وقد كشفت نتائج الدراسة أن ما يقرب من 88٪ من المشاركين أظهروا فهمًا جيدًا للمعرفة المفاهيمية لتعلم اللغة بمساعدة الحاسوب. كما وجد أن 75٪ منهم أفادوا بأن استخدامهم لموارد ومصادر تعلم اللغة بمساعدة الحاسوب للتدريس كان مرتفعا. علاوة على ذلك، فقد وجد أن العلاقة بين المعرفة والدراية بتعلم اللغة بمساعد الحاسوب واستخدام موارد ومصادر تعلم اللغة بمساعدة الحاسوب للتدريس كانت إيجابية وذات دلالة إحصائية، (423. = (38)r ، 027. = p). أوصت الدراسة بأن يقوم المسؤولون التربويون بتعزيز تكامل تعلم اللغة بمساعدة الحاسوب في الفصول الدراسية نظرًا لفوائدها التربوية الهائلة وأن المعلمين بحاجة إلى تحسين وعيهم التكنولوجي وزيادة استخدامهم للتكنولوجيا ليكونوا معلمين فعالين للغة في القرن الحادي والعشرين.

Abstract

This study investigated English as a Foreign Language (EFL) teachers' Computer Assisted Language Learning (CALL) awareness, their use of technological resources for teaching, and whether there is a correlation between their technological awareness and their use of digital resources. The study was conducted after the resumption of face-to-face teaching following COVID-19 lockdown. It used the survey research design. The sample of the study ($N = 40$) was randomly drawn from the population of EFL instructors at Jubail English and Preparatory Year Institute (JELPYI) in Saudi Arabia. Data were collected through a test (Conceptual Knowledge of CALL Test) and a self-reporting survey (CALL Usage Survey). It was hypothesized that there will be a statistically significant positive correlation between teachers' CALL awareness and their technology integration for teaching English language. Results were analyzed using descriptive and inferential statistics. The findings of the study revealed that almost 88% of the participants demonstrated a good understanding of the conceptual knowledge of CALL. It was also found that 75% of them reported that their usage of CALL resources for teaching was high. Moreover, it was found that the correlation between CALL knowledge and utilization of CALL resources for teaching was positive and statistically significant, ($r (38) = .423$, $p = .027$). The study recommended that educational administrators promote CALL integration in classrooms due to its immense pedagogical benefits and that teachers need to improve their technological awareness and increase their technology usage to be effective language teachers of the 21st century.

Keywords: CALL awareness; Computer Assisted Language Learning (CALL); conceptual knowledge of CALL; Technological Pedagogical Content Knowledge (TPACK); technology use/integration

Introduction and Literature Review

This study investigates English as a Foreign Language (EFL) teachers' Computer Assisted Language Learning (CALL) awareness, their integration of digital technologies in teaching, and whether a correlation exists between their CALL awareness and their technology integration in teaching English language. Specifically, it examines the technological knowledge and usage of technology by EFL teachers in Saudi Arabia. The study was conducted after the resumption of face-to-face classes following the COVID-19 pandemic-induced lockdown.

Computers in Language Teaching and Learning

In the 21st century, teaching and learning in general and language teaching in particular are greatly influenced by different types of digital technologies (or ICT) including computers which, according to Christopoulos and Sprangers (2021, p. 4), "promote optimal knowledge development and understanding" for students. For Arishi (2012) and Motteram (2013), computers are key factors in language learning processes, effective teaching aids, and useful tools for enhancing language acquisition. In addition, they provide authentic learning contexts for students (Zhang & Chen, 2022). Due to the prevalence of computers in today's education system, the question is no longer whether to use them, but to examine how their "integration influences the established practices" (Christopoulos & Sprangers, 2021, p. 4).

Successful integration of ICT in education not only contributes to learners' satisfaction but also helps them to acquire the desired learning outcomes (Cervero et al., 2020). Many studies have indicated that students generally show better academic performance in digital platforms than in the traditional ones (Paudel, 2021; Shehzadi et al., 2020). Similarly, Akram et al. (2021) suggest that digital technology plays a critical role in meeting the needs of learners, making the learning process more exciting, keeping learners motivated, enhancing their academic performance, and improving teachers' pedagogical competencies. Moreover, Pozo et al. (2021) argue that using technology promotes the acquisition of 21st century skills and competencies, such as autonomy, collaboration, critical thinking, and problem-solving.

The prevalent use of computers for language learning gave birth to CALL, which is reported to have positive effect on learning language skills (AlMekhlafi, 2006; Bulut & AbuSeileek, 2009). Lee (2000) outlines how CALL affects language instruction by providing practices for language learners through experiential learning, offering them more motivation, enhancing their achievements, providing them with authentic materials for study, encouraging greater in-class interactions, emphasizing individual needs, offering them multiple sources of information, and enlarging their global understanding. Other benefits of using technology for language learning, according to Mullamaa (2010), are to support the modern principles of language acquisition, individualization, interaction, and motivation, all of which are paramount in modern educational theories. Nowadays, technology is so embedded and useful in language classrooms that it is difficult to get any English language program, at any level of education, which does not make any provision of ICT and its use (Paudel, 2021).

Based on the foregoing submissions, it can be argued that using technology by 21st century teachers is no longer optional. This is because today's digital native students, who inherently possess "skills for digital fluency" and for whom technology is "as natural as breathing" naturally expect and prefer technology-enhanced learning experiences (Kivunja, 2014, p. 95). Therefore, for teachers to succeed in carrying them along and meeting their needs, expectations, and aspirations, they need to integrate some kinds of technology into their teaching. However, a lot of these teachers are 'digital immigrants,' who were not born into the

digital world, but have, at some points in their lives, adopted technology and started learning its "new language," perhaps slowly, reluctantly, or even as a matter of necessity (Prensky, 2001a). Consequently, they still retain some of their pre-digital 'accents' (i.e., "their foot in the past," as Prensky puts it, p. 2). If teachers' technological knowledge or awareness is inadequate, their use of technology may be limited or ineffective. Therefore, in addition to other pre-requisite knowledge and skills, 21st century teachers need to upgrade their technological awareness and competencies (Akram et al., 2021). They also need to embed technology into their teaching to appeal to their students and prepare them for digital workplaces and digital citizenship (Kivunja, 2014). Kivunja further suggests that teachers need to transition from the paradigm of **t**eaching **t**he **w**ay **w**e've **a**lways **d**one **i**t (TTWWADI) to that of **t**eaching **t**he **w**ay **d**igital **n**atives **l**earn (TTWDNL) and want to be taught (p. 107).

Teachers' Knowledge Requirements

Teachers have always played key roles in all learning contexts. According to Kurt et al. (2013), classroom environments and learning activities are affected mainly by their characteristics, traits, beliefs, and modes of teaching. However, for them to play their roles effectively, they need some basic requirements in terms of knowledge of content or subject matter and knowledge of pedagogy or teaching strategies. Walshaw (2012) argues that inadequate knowledge of content is detrimental to students' understanding and fragile pedagogical knowledge limits teachers' ability to impart knowledge and properly manage the learning context.

A myriad of changes has occurred in the field of teaching and learning due to the introduction of various forms of technologies in the classroom. These changes have affected the body of knowledge teachers require to work as effective practitioners. For instance, in the pre-digital age, teachers only needed a good understanding of subject matter knowledge and methodology of teaching. In Shulman's (1986) terms, these are referred to as content knowledge (CK), pedagogical knowledge (PK), and pedagogical content knowledge (PCK). PCK, according to Shulman (1986, p. 9), refers to the knowledge of how to teach specific contents to specific learners in specific contexts.

In the digital age, however, in addition to PCK, teachers need to have conceptual and practical knowledge of technology and how to leverage it to deliver lessons, promote students' engagement, and carry out administrative tasks. Consequently, Mishra and Koehler (2006) reviewed Shulman's PCK model to include technology knowledge and renamed it Technological Pedagogical Content Knowledge (TPACK), which is shown in Figure 1. Based on TPACK, technology knowledge or technology awareness is defined as "a skill of being aware of the technology that has recently become widely known and widely accepted in all aspects of life. It also includes being able to recognize and comprehend the utility of any such technology" (Taopan & Siregar, 2021, p. 402). TPACK model provides a framework for teachers to make effective use of technologies in carrying out their duties. According to Akram et al. (2021), it serves as the basis for good teaching using different digital tools and provides strategies for making constructive use of technologies in teaching contexts. Paudel (2021) says that for teachers to make effective use technology in the classroom, they should be competent on technology knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK).

Figure 1

The TPACK framework. Reproduced from Willermark (2021)
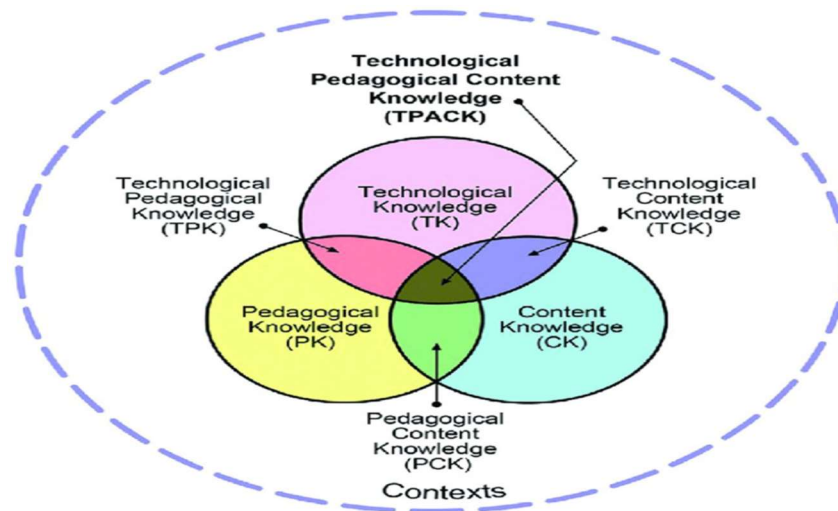
Technological knowledge or awareness is crucial for teachers because, according to Mehan (1989), the mere existence or introduction of technology to the classrooms will not give the desirable outcomes. Rather, it is "what people do with the machine, not the machine itself that makes a difference" (Mehan, 1989, p. 19). For this reason, Mishra and Koehler (2006, p. 1029) submit that effective teaching with technology requires teachers to understand how to use technology to represent concepts, to teach contents in constructive ways, to facilitate learning, to remediate students' learning problems, to understand students' prior knowledge and theories of epistemology, to build on the existing knowledge, and to develop new epistemologies or strengthen old ones. This shows that technological awareness is essential for effective technology integration in the classroom. Therefore, 21st century language teachers need technological knowledge or awareness in addition to Shulman's PCK. Researchers, like Christopoulos and Sprangers (2021), Ifinedo et al. (2020), and Oliva-Córdova et al. (2021), have found that low CALL awareness is one of the major factors that, implicitly or explicitly, influence technology integration in the classroom. In particular, Christopoulos and Sprangers say that technology awareness is essential for teachers to be able to teach effectively, efficiently, and successfully.

Technology Integration in the Classroom

Classroom technology integration refers to using computers and other electronic/digital devices for teaching purposes. In this study, it is measured using Maryland Teacher Technology Standards (MTTS), which serve as the basis for the CUS. These standards are benchmarks for technology proficiency and they serve as guidelines for the technology knowledge that educators should have. The standards were developed as part of the Preparing Tomorrow's Teachers to use Technology (PT3) Grant (Montgomery County Public Schools, 2003). PT3 Grant was aimed at bringing about a change and ensuring that pre-service teachers have good knowledge of technology and efficiently integrate it in their practices.

MTTS comprises of 7 standards that all educators are expected to meet. The rationale for the standards are to ensure that both teachers and school staff are able to make a proficient use of technology in their teaching and/or administrative tasks. Standard 1 comprises of seven items related to teachers' ability to access, evaluate, process, and apply information efficiently

and effectively. Standard 2, which has eleven items, talks about using technology effectively and appropriately to interact electronically and communicate information in a variety of formats. Standard 3 has ten items related to teachers' ability to demonstrate an understanding of the legal, social, and ethical issues related to technology use. Standard 4 has eight items about teachers' use of technology to analyze problems and develop data-driven solutions for instructional and school improvement. Standard 5, which has fourteen items, is basically concerned with teachers' ability to design, implement, and assess learning experiences that incorporate use of technology in the curriculum to support understanding, inquiry, problem solving, communication, or collaboration. Standard 6 has four items about teachers' understanding of human, equity, and developmental issues surrounding the use of assistive technology to enhance student learning performance and apply that understanding to practice. Standard 7 has seven items about teachers' ability to develop professional practices that support continual learning and professional growth in technology. This study adopts the MTTS to measure teachers' technology usage for a number reasons. First, these standards are designed to ensure that teachers and school staff use technology proficiently and they integrate it into their classroom instruction (Montgomery County Public Schools, 2003). Second, they have been used by other researchers to assess teachers' technology integration into the curriculum (Stover, Kobrinski, & Johnson, 2004). In addition, they are considered as yardsticks for teachers to use technology in their professional practice and to assess their technology-related knowledge, literacy, and skills (Marshall, 2002; Mims-Word, 2012). Consequently, these standards are suitable tools for measuring teachers' technology usage.

Previous Studies

A number of studies has been conducted to investigate the different aspects of EFL teachers' CALL awareness and technology integration in teaching. For example, Al-Awaid (2022) studied the competency of EFL instructors (N=67) at Jazan University in Saudi Arabia and found that they were technologically and digitally knowledgeable and competent. It was also found that they used technology maximally for teaching and assessment. Al-Awaid's study is similar to the current study in terms of research setting and participants. Both were conducted at language institutes in Saudi Arabia and both used preparatory year EFL teachers as participants. On the other hand, there are striking differences between the two studies. For example, Al-Awaid used both male and female EFL teachers, while the present study used males only. Also, in terms of scope, Al-Awaid's study was limited to investigating the competence of the participants in online teaching and assessments only, while the present study focusses on technology awareness, technology integration, and the correlation between them, thus making it relatively broader. Likewise, Al-Awaid's used only a survey to collect data, while the present study collected data using a survey and a knowledge test, thus making the data collection more robust and the findings potentially more reliable.

Almalki (2020) investigated the factors that affect the integration of ICT by EFL teachers in Saudi Arabia. The study specifically examined teachers' age, their level of technological proficiency, and their perception of technology. The participants (N=38), drawn from various educational phases, completed a questionnaire to provide data. The results indicate that there was no significant relationship between their age and technology integration. However, level of technology proficiency and perception of technology were significantly related to technology integration in the classroom. Almalki's study differs from the present study in focus and scope. It did not investigate the technological awareness of the teachers and the extent of their technology usage in the classroom. Also, it used only a survey to collect data, thus making its findings susceptible to bias.

Alghamdi's (2017) study used Mishra and Koehler's (2006) TPACK model to investigate the knowledge of and attitudes towards implementing ICT by public secondary school EFL teachers (*N*=200) in Saudi Arabia. The study used a mixed method research design. Findings indicate that the participants had sound technology awareness and were ready and willing to use different forms ICT for EFL teaching. It was also revealed that their use of technology was positively associated with their ICT knowledge, attitudes, and perception of TPACK. Alghamdi's was somehow similar to the present study because both were conducted in Saudi Arabia, both used TPACK model as their theoretical framework, and both used male EFL teachers. However, Alghamdi's study used secondary schools EFL teachers as participants and it fell short of investigating the extent to which they integrated technology in their teaching or the relationship between technology awareness and technology integration.

Alqurashi et al.'s (2017) study used TPACK model to analyze the impact of age, teaching experience, and education level on classroom technology integration among teachers in Saudi Arabia and the USA. Findings revealed that teachers in both the USA and KSA had higher rating of their knowledge in CK and PK than TK knowledge, but teachers in Saudi Arabia had higher TK, TCK, TPK, and TPCK than teachers in the USA. Unlike the present study, Alqurashi et al.'s study was comparative in nature and it neither examined the level of technology use by the teachers nor looked at the correlation between technology awareness and technology usage among the participants. In addition, it used teachers in general instead of EFL teachers.

Mahdi and Al-Dera's (2013) study investigated the impact of teacher's age, experience, and gender on the integration of ICT into language teaching among in-service EFL teachers (*N*=46) at Najran University in Saudi Arabia. The study used a mixed-method research design in which data were collected through a survey and an interview. The results indicate that there was no significant difference in using ICT between the two groups of teachers according to their age, knowledge, and experience. However, it was found that there was a difference between male and female teachers in using ICT for language teaching. Female teachers reported less use of ICT in their instruction than male teachers. The study differs from the current study because it used university EFL teachers, not preparatory year EFL teachers. Again, the focus was on the impact of age, knowledge, and experience rather than the technological awareness and usage among the participants. Most of the other studies conducted in Arabia were on K-12 teachers. Among these are those that evaluated the challenges of effective technology integration (Alamri, 2019; Alghamdi, 2017), and those that explored teachers' experience of technology usage in personal and professional lives (Alabbasi, 2017).

Across the world, several studies have been conducted to investigate various aspects of using technology for the enhancement of teaching. These studies may be categorized into two groups – those conducted on university teachers and those conducted on K-12 teachers. Among the former, two studies, both conducted on Chinese university EFL teachers, are worthy of mention. Zhang and Chen's (2022) study revealed that the participants frequently used technologies for both online and face-to-face teaching. Similarly, Liang's (2021) study found that the participants predominantly used technology, but for teacher-centered purposes, rather than for active student engagement. Likewise, Akram et al.'s (2021) study, which assessed the online teaching competencies of randomly selected faculty members (*N*=256) from public universities in Pakistan, revealed that they possessed adequate levels of knowledge across all the domains of TPACK. In addition, Mohsenishad et al. (2020) investigated Iranian EFL teachers in language institutes, colleges, and universities and found that their raised awareness of technology-enhanced instruction enabled them to successfully and consciously use

technological devices in their teaching. However, compared to the present study, these studies were not conducted in Saudi Arabia, used university teachers as participants, and had different focus and scope.

Among the studies conducted on K-12 teachers, there are also those that focus on EFL teachers' technology awareness, proficiency, integration (Abbood & Dakhil, 2021; Akabogu et al., 2018; Chigbu et al., 2020; Mainake & McCrocklin, 2021; Mukminin & Habibi, 2020; Pheng et al., 2021; Rahimi & Yadollahi, 2012; and Van-Loi, 2021). Most of these studies reveal that K-12 teachers in different countries had moderate to good ICT knowledge used technology for ESL/EFL teaching. There are also studies that focused on the factors that affect technology integration in teaching (Almekhlafi & Almeqdadi, 2010; Atkins & Vasu, 2000; Chigona & Chigona, 2010; Dogan et al., 2021; Fatimayin, 2013; Karaca et al., 2013; and Robert, 2011). Most of these studies identified personal, social, and environmental factors that prevent educators from effectively using technology for teaching.

Based on the preceding reviews, it could be seen that more studies still need to be done to investigate the EFL teachers' conceptual knowledge of CALL/technology, technological integration, and the correlation between these two variables. Hence the need for the current study.

Research Questions

This study answers the following three research questions:

1. Do EFL teachers in Saudi Arabia have adequate conceptual knowledge of CALL?
2. To what extent do EFL teachers in Saudi Arabia use computer-based resources for teaching English language?
3. Is there a correlation between the CALL conceptual knowledge of EFL teachers in Saudi Arabia and their use of computer-based resources for teaching?

Objectives of the Study

The study aims to achieve the following objectives:

1. to investigate the conceptual knowledge of EFL teachers in Saudi Arabia,
2. to examine the extent to which EFL teachers in Saudi Arabia use CALL resources in their teaching, and
3. to find out whether there is a correlation between the CALL awareness of EFL teachers in Saudi Arabia and their integration of computer technologies for language teaching.

Significance of the Study

The findings of this study may be significant to English language curriculum designers, teachers, and researchers in the field of CALL. They could help curriculum designers in promoting the integration of digital technologies in language teaching and learning. They could help English language teachers to improve their technology awareness and make innovative use of different digital technologies to facilitate language teaching and enhance students' active engagement in language learning. The findings could prompt researchers to conduct more studies on the technology knowledge and technology integration by teachers.

Several empirical studies have been conducted on different aspects of teachers' CALL awareness and classroom technology usage across the world. However, most of the studies conducted in Saudi Arabia were done using pre-service teachers or teachers of secondary or

middle schools (or K-12). Apart from Al-Awaid (2022), this researcher has not come across any study using EFL teachers of preparatory year programs in Saudi Arabia as participants. Based on this, the study is a gap filler as it investigates this topic from the point of view of preparatory year EFL teachers. Secondly, most of the existing studies were conducted before or during the COVID-19 lockdown. This study is different as it examines the issue in the aftermath of COVID-19 study suspension. This is important because the issue of teachers' technology awareness and usage became more topical during the lockdown as teachers had to adapt to the 'new normal,' where technology was deployed as a matter of necessity (Akram, 2021; Christopoulos & Sprangers, 2021; Dadhe & Patil, 2021; Pozo et al., 2021). This forced them to update their technology competencies and increase their technology integration to cope with the demands of the pandemic situation. The present study is, therefore, timely as investigates the level of EFL teachers' technology knowledge and use in the post-pandemic period.

Methods

This section discusses the design of the research, the participants and sampling techniques, as well as the method and description of data collection instruments. It also talks about the validity and reliability of the research tools used in the study.

Research Design

This study uses a survey research design to examine EFL teachers' conceptual knowledge of CALL and their use of computer-based applications for teaching. It also investigates the relationship between teachers' CALL awareness and their use of classroom technologies. Survey research design was used because surveys are effective tools for eliciting affective variables like attitudes, beliefs, opinions, etc. (Mackey & Gass, 2005; Ponto, 2015). To collect data, an objective knowledge test and a self-reporting survey, both of which are quantitative tools, were used.

Instruments for Data Collection

Two researcher-designed data collection tools were used in this study. They were Conceptual Knowledge of CALL Test (CKCT), which was used to investigate teachers' conceptual knowledge of CALL, and a CALL Usage Survey (CUS), which was a self-reporting survey used to find the extent to which the participants used CALL applications to facilitate their teaching. Surveys were used because, according to Willermark (2021), they are the most frequently used instruments to measure teachers' knowledge and skills. Moreover, Willermark argues that knowledge tests offer more objective data about teachers' technology awareness and self-reporting surveys give teachers an opportunity to reflect on their knowledge, skills, and practices.

Contents for the CKCT were drawn from CALL literature and partly from Dadhe and Patil (2021) and Warschauer (1996). The test had 38 items and it was designed on a dichotomous true/false scale. Despite the arguments associated with the reliability of true-false test items in measuring the essential outcome of formal education (Burton, 2001), it has been submitted that scores of respectable reliability can be obtained from them (Ebel, 1971). It is further argued that "all knowledge can be expressed in a series of suppositions, and a supposition is a sentence that can be said to be true or false" (Ebel, 1971, p. 2). In addition, Ebel (1970) argues that "reasons suggests, and experience has confirmed that true-false tests can yield valid measures for educational achievement directly, simply, and efficiently" (p. 3). The CKCT survey asked respondents about the principles behind using computers for language

teaching and learning, the pedagogical aspects of using computers in the classroom, theoretical principles of CALL, definition of CALL, its history, its phases, and benefits of various CALL applications. There were also questions related to using computers as tutors, stimulus, tools, communication medium, and authentic materials.

The second instrument, CUS, asked the participants about their use of different computer-based applications in their language classrooms. It had 67 items arranged on a 5-point Likert scale, ranging from 5 (Very High) to 1 (Very Low). The items are divided into seven standards. This survey asked respondents about the kinds of computer resources (social media, PowerPoint, the Internet, audio-visuals, projectors, etc.) they use in their teaching and how often they use them. It also asked them about the strategies they use to leverage these technologies to create student-centered collaborative learning contexts. Contents for CUS were taken from the Maryland Teacher Technology Standards (MTTS), which were designed to ensure that educators use technology proficiently and they integrate them in their teaching and other administrative tasks.

Participants of the Study

The sample used for this study consisted of 40 randomly selected EFL teachers at JELPYI in Saudi Arabia. The rationale for randomization was to improve the validity of the results. The mean age of the participants was 38 years. All of them had at least 6 years of teaching experience. In terms of their qualifications, 70% of them had at least a bachelor's degree in the areas of English, TEFL, TESL, etc. Also, 8% of them had doctoral degrees and 22% of them had professional teaching certifications like CELTA or DELTA in addition to their bachelor's degrees. The participants were cosmopolitan in terms of their nationalities. In addition, they spoke different native languages. Almost 18% of them were native speakers of English language and 45% of them spoke Arabic as a first language. Out of this, 20% were Saudis and 25% were from different Arab countries. Nearly 40% of them spoke languages other than Arabic and English as their native languages. Regarding their gender, all of them were males, as the study was conducted at a male only institute.

Method of Data Collection

This study collected quantitative data from the participants. Appointments were made with the participating teachers and they were reached by the researcher or his assistants in their offices during the appointed time. They were requested to answer the knowledge test first and shortly after that, they were given the survey to fill out. The whole process took between 35 to 45 minutes. The data collected via CKCT and CUS were collated, screened, and statistically analyzed using IBM SPSS (v20).

Validity and Reliability of Research Instruments

The data collection instruments were validated and pilot-tested. A panel of experts was recruited to establish the content and face validity of the tools. They offered some useful feedback, which were used to refine the tools. After the validation, the tools were pilot-tested on eleven EFL teachers. Following the piloting, reliability tests were conducted to ensure that the items measured the same constructs and they had high internal consistency. The reliability coefficient of CKCT was 0.83, while that of CUS was 0.94, both of which were above Elkin's (2012) priori criterion of alpha ≥0.70.

Results

Research Question 1

This research question asked if the participants had adequate conceptual knowledge of CALL. Data from the knowledge test were subjected to frequency and percentage statistics. The finding is presented in Table 1.

Table 1

Frequency Distribution for Conceptual Knowledge of CALL Test

Knowledge of CALL	Frequency	Percentage
Excellent	12	30.0
Superior	8	20.0
Above Average	7	17.5
Pass	8	20.0
Fail	5	12.5
Total	40	100.0

Table 1 shows participants' conceptual knowledge of CALL. Out of the forty (40) participants in the study, twelve (30%) had excellent scores on the test. This means they demonstrated an exceptional grasp of the concept of CALL. Eight (20%) had superior or very good scores on the test. This means that their CALL awareness was significantly effective. Seven (almost 18%) had good/average scores on the test. This means that they demonstrated the required understanding of the conceptual knowledge of CALL. Eight (20%) of them got the lowest pass marks, which means they had a minimal grasp of the concept. Only five (about 12%) of the participants failed the test. Overall, this finding reveals that almost 88% of the participants demonstrated a reasonable understanding of the conceptual knowledge of CALL and only about 12% of them had poor understanding of it. Based on this, it could be argued that the participants' conceptual knowledge of CALL was good or adequate.

Research Question 2

This research question asked the extent to which the participants used technological resources in their teaching. Data from the survey were subjected to descriptive statistics. The finding is presented in Table 2.

Table 2

Frequency Distribution for Usage of CALL Resources

Usage of CALL	Frequency	Percentage
Very High	20	50.0
High	10	25.0
Moderate	4	10.0
Low	6	15.0
Very Low	0	00.0
Total	40	100.0

As shown in Table 2, thirty (75%) participants reported that their usage of CALL resources was high. Four (10%) were moderate users of CALL resources and six (15%) reported low usage of technology for teaching. This finding reveals that a high percentage of the participants use different CALL resources to deliver their lessons.

Further analysis of the results shows how the participants revealed their practices on each of the seven standards in the CUS, as shown in Table 3. For Standard 1, nine participants reported high usage and only one reported low usage. This means that 22% of them used CALL resources to access, evaluate, process, and apply information efficiently and effectively. For Standard 2, three participants reported high usage, one reported moderate usage, and two reported low usage. This indicates that nearly 8% of them used technology effectively and appropriately to interact electronically and to communicate information in a variety of formats. For Standard 3, three participants reported high usage, while one reported low usage. This reveals that almost 8% of them demonstrated an understanding of the legal, social, and ethical issues related to technology use. For Standard 4, five participants reported high usage, one reported moderate usage, and one reported low usage. This means almost 13% of them used technology to analyze problems and develop data-driven solutions for instructional and school improvement. For Standard 5, four reported high usage, one reported moderate usage, and one reported low usage. This is interpreted to mean that 10% of the participants designed, implemented, and assessed learning experiences that incorporate use of technology in the curriculum to support understanding, inquiry, problem solving, communication, or collaboration. For standard 6, two participants reported high usage and none reported moderate or low usage. This indicates that 5% of them understood human, equity, and developmental issues surrounding the use of assistive technology to enhance student learning performance and applied that understanding to practice. For Standard 7, four participants reported high usage and only and one moderate usage. This shows that 10% of them developed professional practices that support continual learning and professional growth in technology. Overall, the number of the participants who reported high usage of technology across all the seven standards was 30 (75%).

Table 3

Standards-based Frequency Distribution for CALL Usage

Standards	Description	Very High	High	Moderate	Low	Very Low
Standard 1	Information access, evaluation, processing, and application	6	3	0	1	0
Standard 2	Communication	3	0	1	2	0
Standard 3	Legal, social, and ethical issues	2	1	0	1	0
Standard 4	Assessment for administration and instruction	3	2	1	1	0
Standard 5	Integrating technology into the curriculum and instruction	3	1	1	1	0
Standard 6	Assistive technology	1	1	0	0	0
Standard 7	Professional growth	2	2	1	0	0
Total		**20**	**10**	**4**	**6**	**0**

Research Question 3

To answer this question, a hypothesis was formed. The hypothesis predicted that there will be a statistically significant positive correlation between teachers' conceptual knowledge of CALL and their use of CALL resources for language teaching. The data for testing this hypothesis were jointly collected from the test and the survey and analyzed using Pearson's product-moment correlation coefficient test. However, prior to conducting the test, some preliminary analyses were done to ensure no assumptions were violated.

Table 4

Correlation between CALL Knowledge and CALL Usage for Teaching

		Knowledge of CALL	Use of CALL
Knowledge of CALL	Pearson Correlation	1	.432
	Sig. (2-tailed)		.027
	N	40	40
Use of CALL Resources	Pearson Correlation	.432	1
	Sig. (2-tailed)	.027	
	N	40	40

As shown in Table 4, there was a strong positive correlation between the variables in the sample (.432) and since the p-value (.027) was lower than the pre-determined level of significance (.05), it can be argued that there was evidence to suggest that CALL awareness was strongly positively correlated with technology usage in the classroom. This finding shows that the relationship between teachers' knowledge of CALL and their use of technological resources for teaching was positive and statistically significant, (r (38) = .432, p = .027). Therefore, the null hypothesis was rejected.

Discussion

Discussion of Research Question 1

The finding of this research question reveals that almost 88% of the participants demonstrated a good understanding of the conceptual knowledge of CALL and only about 12% of them had a poor understanding of it. This shows that, overall, their conceptual knowledge of CALL was good or adequate.

It is generally believed that knowledge plays a key role in attitude change, confidence building, and motivation boosting (Mollaei & Riasati, 2013). Consequently, teachers with appreciable knowledge of CALL and its practical as well as theoretical principles are very likely to develop positive attitudes, become confident, and be motivated to integrate technology in their teaching. Conversely, teachers with poor conceptual knowledge of CALL are very likely to avoid using technology in their teaching. To underscore the importance of knowledge in CALL integration, Strom (2021) submits that "without the proper training and support, educators are unable to incorporate technology tools and resources into their lessons effectively" (p. 2). Also, Mollaei and Riasati (2013) argue that language teachers who have good technology awareness and positive computer experience are likely to be more confident and skilful in implementing CALL in their teaching. Moreover, a lot of the existing technological resources are not specifically designed for language teaching or learning. For this reason, knowledge is needed to leverage and creatively adapt them to achieve language teaching objectives. In line with this, Dogan et al. (2021) argue that "irrespective of the complicated nature of any technology, teachers need to have skills/competencies and beliefs/attitudes required to use it in the classroom" (p. 1317).

It is crucial for teachers to equip themselves with technology competence in addition to other competencies. Ertmer and Ottenbreit-Leftwich (2010) believe that for teachers to be able to prepare their students for the realities of tomorrow, they, themselves, need to possess basic technology skills, which could enable them to develop the technology awareness that will boost their confidence, change their attitudes, and eventually help them to integrate CALL in their teaching. Taopan and Siregar (2021) are of the view that "without a doubt, technological awareness is essential for a teacher … in today's world" (p. 400). They further argue that "world language teachers in the 21st century should have an awareness of the potential for adopting digital tools and artifacts from real-world language practice so that they can be adapted for the language classroom" (p. 214).

This finding aligns with that of Chigbu et al. (2020) who found that teachers' technology awareness was high. Also, Fatimayin's (2013) study found that almost 93% of teachers had good technology proficiency. Similarly, Philomina and Amutha (2016) investigated the ICT awareness of teacher educators in India and revealed that the participants had good ICT awareness. Other researchers with similar findings include Akabogu et al. (2018), Akram et al. (2021), Chigona and Chigona (2010), Mainake and McCrocklin's (2021), and Pheng et al. (2021). However, this finding disagrees with that Mukminin and Habibi (2020)

whose study found that teachers had more knowledge of traditional non-technological conception of pedagogy and content than technological pedagogy and technological content. It is also at odds with Mustapha et al. (2020) who did not include lack of CALL awareness as one of the factors limiting technology usage.

Discussion of Research Question 2

The finding of this research question shows that thirty (75%) participants reported that their usage of CALL resources was high. Four (10%) were moderate users of CALL resources and only six (15%) reported low usage of CALL resources. This finding reveals that a high percentage of the participants used different CALL resources to deliver their lessons.

It is often said that using CALL and other forms of technology in the classroom contribute towards successful teaching and learning. Used effectively and smartly, technology is an effective tool that engages students in the learning process and provides them some authenticity (Mollaei & Riasati, 2013). In addition, it contributes towards successful teaching for teachers and effective learning for students. Ertmer and Ottenbreit-Leftwich (2010), who examined technology integration through the lens of teachers as agents of change, reported that "no doubt, teachers have increased their personal and professional uses of computers" (p. 259). They concluded that there is evidence to show increase in teachers' instructional uses of computers in the classroom.

This finding is consistent with that of Almekhlafi and Almeqdadi (2010) who found that teachers integrated a variety of technologies to promote students' learning. Likewise, in a case study exploring university teachers' perceptions of and practices with technology as well as the challenges of technology implementation, Liang (2021) found that teachers predominantly used technology, even though they often used it for teacher-centered purposes rather than for active student engagement. Also, Rahimi and Yadollahi (2012) found that teachers often used technology for teaching. Other studies with similar findings include Al-Awaid (2022), Abbood and Dakhil (2021), Pheng et al. (2021), as well as Philomina and Amutha (2016). However, Robert's (2011) study found that their participants rarely used technology. Also, Kim (2002) found that teachers' integration of CALL resources was limited, frequently delayed, avoided, or even withdrawn. Likewise, Zhang and Chen (2022) reported that Chinese EFL teachers were not using technologies at the optimal level of expectation.

Discussion of Research Question 3

The finding of this research question indicates that there is statistically significant positive correlation between knowledge of CALL and use of technology for teaching, (r (38) = .432, p = .027). Many research studies have found that technology competent teachers tend to use more ICT in their teaching than teachers with poor technology knowledge (Mollaei & Riasati, 2013). In line with this, Zainal (2012) argues that effective integration of ICT in English language teaching classrooms depends on a host of factors such as teachers' knowledge and skills in using ICT in class.

This finding is in consonance with many findings in the literature. For example, Rahimi and Yadollahi's (2012) study revealed that ICT use was significantly correlated with some variables including computer literacy ($r = 0.49$, $p < 0.01$). Similarly, Van-Loi (2021) found that teachers who used technology more often than others tended to have a higher technological and pedagogical knowledge than others ($p <. 05$). Likewise, Zhang and Chen's (2022) study revealed that teachers' TPACK positively influenced their actual technology use for both face-to-face and entire online instruction. Other studies with similar findings include Aslam et al. (2021), Atkins and Vasu (2000), Chigona and Chigona (2010), Dogan et al. (2021), Karaca et

al. (2013), Lam (2000), as well as Mohsenishad et al. (2020). However, this finding disagrees with Mahdi and Al-Dera (2013) who found that there was no significant correlation between teachers' technology usage and technology awareness.

Conclusion and Limitations

This study investigated EFL teachers' conceptual knowledge of CALL, their integration of CALL applications in teaching, and whether a correlation existed between their conceptual knowledge of CALL and their use of technology in language teaching. Using a survey research design, forty participants were randomly drawn from the population of EFL instructors JELPYI in Saudi Arabia. Two instruments (CKCT and CUS) were used to collect data, which were analyzed using descriptive and inferential statistics. From the study, the following findings and conclusions were drawn. First, most (almost 88%) of the participants demonstrated a good or adequate understanding of the conceptual knowledge of CALL. Second, a high percentage (75%) of them reported that they used different CALL resources to deliver their lessons. Third, there was a strong positive correlation between CALL knowledge and use of technology for teaching, (r (38) = .432, p = .027).

However, the study had some limitations pertaining to its sample size, research tools, and research design. First, due to limited time and resources at the disposal of the researcher, the sample size (N=40) was not large enough to represent the population of EFL teachers (N=98) at JELPYI. A future research study with a larger more representative sample would provide more reliable and representative findings. The second limitation relates to the instruments for data collection. Rather than observing the classes first hand to see extent to which the participants used technologies during their teaching, the researcher relied on teachers' self-reported surveys. Self-reporting data, according to Northrup (1997), have certain drawbacks including social desirability bias and exaggeration of data. Related to this is the limitation of using true-false items in CUS, as there are people who have doubts about the value and reliability of these kinds of items in measuring educational achievements. A future study with more objective data collection instruments, like classroom observation or other more reliable tools, would give a more accurate assessment of the situation. The third limitation is about the research design. While quantitative research method is good for reporting objective findings and minimizing subjectivity, it does not look at a phenomena from multiple perspectives. Therefore, replicating the study using a mixed methods design seems to be a promising avenue for future research.

Implications and Recommendations

The findings of this study are significant in a number of ways. First, theoretically, the study has contributed to the body of literature in the fields of CALL, teacher education and training, teacher technological awareness, and technology usage among teachers in general and ESL/EFL teachers in particular. It has also demonstrated the enormous benefits of technology integration particularly in language teaching. Furthermore, the findings of this study provide evidence that teachers' technological awareness is positively correlated with their technology usage.

The following recommendations are made for educational policy makers and teachers. First, educational administrators should promote CALL integration in English language teaching due to its immense pedagogical benefits. Second, teachers should improve their technology awareness and increase their technology usage to be effective language teachers of the 21st century.

Bio

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