Learning from COVID-19: how Indonesian English teachers see computer-assisted language learning?

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Article Info	ABSTRACT
	The COVID-19 outbreak has transformed various parts of life, including teaching and learning methods. Teachers, especially Indonesian English teachers, were taken aback by the abrupt transition from offline to online instruction because it was unanticipated and unprepared. This paper attempted to investigate how teachers implement their pedagogical knowledge in the online environment during the pandemic and how they improve on using computer-assisted language learning (CALL) during the sudden shift from offline to online instruction. The findings revealed that teaching methods are being adapted to accommodate the features of the online platform. In order to adjust to this new situation, teachers use their creativity to adapt the stages of cooperative learning, collaborative learning, and class discussion in an online context. Participating in virtual workshops and training also helps teachers improve their digital skills concerning internet material. In the future, the results of the present study can be applied to improve the teacher education curriculum. Specifically, it is suggested to construct a course for the teacher education curriculum that places pre-service teachers in diverse and challenging conditions.

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1. INTRODUCTION

The onset of COVID-19 has turned several aspects of life, one of which is teaching and learning, into a new experience. The closure of educational institutions made teachers conduct teaching and learning online. Several considerations regarding online teaching and learning, such as the infrastructure and teachers' ability in computer-assisted language learning (CALL), must be addressed. Infrastructure is an important aspect to consider because it will determine whether the teaching and learning process, which requires internet access, will run well or not. The teacher addresses the lack of technological facilities [1]. In addition, teachers' knowledge of using technology is a vital part of successful teaching and learning. One of the critical parts of language teaching is pedagogical knowledge [2].

The sudden change from offline to online teaching shocked teachers because this change was unexpected and unprepared by the teachers and authorities. The outbreak of COVID-19 compelled classes to be held online [3]. It leaves teachers with a novel experience that they never had before; the teaching and learning are conducted online and utilize CALL. The teachers usually join workshops or professional development courses before a particular program is implemented to prepare them for the program. However, this outbreak gave no preparation for teachers, especially in Indonesia.

The sudden closure of schools affects teachers with unprepared plans on how to conduct teaching and learning. Consequently, it transformed the teaching method [4]. The teaching method becomes online teaching because the students are not allowed to attend the classroom. Some senior teachers are possibly not familiar with the online platform. Teachers face a challenge in running online teaching and learning [5] and lack technology skills [6]. In addition, the sudden shift from face-to-face teaching to online teaching affects teachers' psychology, teachers felt anxiety during the outbreak [4].

The pandemic triggers the teacher's pedagogic capability to be adaptive. Proficient teachers can modify necessary adjustments using their pedagogical and technological skills [7]. They must improve and leverage their pedagogical knowledge to practice an innovative teaching method. Collaborative and translingual pedagogy are envisioned during the pandemic and in post-pandemic teaching methods [8]. In addition, teachers used online platforms, such as WhatsApp application [9], Google Classroom, Google Meet [10], Moodle [11], and Visual Vocabulary Learning apps [12], during the pandemic to ensure that the teaching and learning process ran well.

During the pandemic, the transition to online teaching engendered several challenges for teachers. Ownership of devices, such as laptops or the internet, is the major hurdle for online teaching learning [13]. Teachers were also distracted by the housework and childcare while teaching at home [14]. English as academic purposes (EAP) teachers have a low level of digital literacy [15]. Teachers face time pressure because they need more time to prepare materials for online teaching [11]. Teachers should prepare a different teaching method in a virtual environment [16]. The pandemic extends the comfort zone of teachers who are used to teaching in the classroom. However, the pandemic provides challenges to cope with and adapt to a novel environment such as teaching at home and online learning.

Teacher education curriculum rarely provides student teachers with an online environment experience. The teachers, indeed, feel awkward using online devices because they do not get courses related to online teaching during their studies in higher education. Pre-service teachers' ability and confidence in using technology are deficient [17] and therefore, the need for online EAP teacher training is demanded [15]. The lack of preparation from teacher education programs makes teachers face a challenge with virtual experience [13].

The most commonly used term to describe the involvement of computers in English language teaching (ELT) contexts is CALL. CALL is a practical term that encompasses all aspects of computer integration into language instruction [18]. CALL has been more popular in language teaching and learning over the last few decades [19]. During the COVID-19 outbreak, teachers were required to engage in online learning and utilize gadgets (computers, laptops, and mobile phones) with an internet connection to properly perform ELT and learning.

The teacher utilizes a computer for teaching a language. CALL is defined as applying technology to support language learning to meet the teachers' and students' needs in the digital world [2]. The teachers can digitalize their teaching instruments, such as quizzes, tests, or teaching materials. CALL facilitates visual, auditory, and kinesthetic learning styles because materials delivered in the video can be used, and the video provides the students with different learning styles. However, implementing CALL depends on teachers' motivation, willingness, and competence [20]. Teacher education or teacher professional development curriculum needs to include teachers' competencies in CALL.

The sudden shift-from offline to online teaching-makes teachers adapt to the advancement of technology in the teaching process. Teachers see technological advancement as more than just a tool for teaching; it also helps them learn [21]. Teachers would probably attend various training or workshops to improve their digital skills. The use of technology also enhanced their engagement with colleagues and allowed them to share their professional experiences [22]. Integrating technology in language instruction creates numerous challenges and benefits for language teachers and students [23]. Against the backdrop of digitalization, integrating technology into teaching and learning is critical for teachers to prepare students for a digitalized future [24]. It was also stated that technology should provide a stress-free environment for teaching and learning activities.

Because of the rapid development of computers and the internet, foreign language teachers now consider CALL a component of pedagogical language learning [25]. They also stated that computers and the internet are excellent instruments for the learning process and have the potential to be employed during language learning and teaching. Several years ago, mobile phones and laptops were the most common instruments for learning a foreign language [19]. In Iran, computers help students learn grammar by sending emails [26]. Computers, according to CALL researchers, might be an excellent medium for improving skills in terms of vocabulary, grammatical structure, and form [27].

Some previous research investigated the perspectives of teachers toward CALL implementation. Başöz and Çubukçu [28] investigated the pre-service English as a foreign language (EFL) teachers' perception of the strengths and weaknesses of CALL and how essential improvements could be addressed. Unlike in Iran, Azerbaijani teachers had positive attitudes toward CALL and were interested in CALL initiatives [18]. Those

previous studies were conducted in a normal situation, not under a pandemic situation, and in West and Central Asia. Research on CALL teacher education conducted in pandemic situations is still lacking. Several previous studies have been conducted on teacher education or teacher professional development regarding how a teacher develops their competencies in CALL [29]–[31], but the studies rarely investigated how teachers utilize CALL without any planned preparation program. To fill this gap, this present paper aims to know how the teachers apply their pedagogical knowledge in the online environment during the pandemic and how they improve their ability to utilize CALL during the instant shift from offline to online instruction.

2. RESEARCH METHOD

The design of the present study was a case study. The study involved English teachers (n=47) from secondary school to higher education institutions, both private and public institutions, in Indonesia. Their teaching experience must be at least eight years because it indicates that they had sufficiently implemented their pedagogical knowledge in the classroom and did not get a formal CALL course during their higher education study. They migrated their teaching method from face-to-face teaching in classrooms to online teaching because of the COVID-19 pandemic.

The setting of the study was in Indonesia. Although English is considered a foreign language, English is taught starting from the secondary school level to the higher education level in Indonesia. The teacher who teaches the English subject must graduate from a teacher educator majoring in English. However, the proficiency of English teachers in Indonesia varies [32]. It was intriguing how the teachers dealt with the school closure during the COVID-19 pandemic. Schools and universities were closed in early April 2020 as the government issued regulations on working and studying from home. It required the teachers to learn CALL because they taught their students online. The schools and universities used various online platforms or applications such as Google Classroom, school/university learning management system (LMS), and Zoom.

The data were garnered from online questionnaires and semi-structured interviews. The questionnaires consisted of three sections: i) the demographic profile of respondents; ii) respondents' pedagogical knowledge; and iii) respondents' strategy in learning CALL. The demographic profile was used to ensure that the respondents' backgrounds met the criteria for the study. The pedagogical knowledge inquiries about the respondents' strategy for teaching under challenging circumstances using CALL. The last section inquiries about the respondents' strategy in learning CALL within a short time.

Questionnaires using 4-point Likert scale were prepared using Google Forms and were distributed via WhatsApp and email to the participants. The participants could re-share the questionnaire with their acquaintances. The participants had to sign in before filling out the questionnaires to avoid a similar participant filling out twice.

The semi-structured interviews were used to gather in-depth data from participants. The interviews were conducted in Indonesia, for the participants were at ease to respond to the questions and gave a breadth of responses, and recorded. The interviews stopped when the data were saturated. The interview data were transcribed, and the transcription was organized following the research objective. The sorted data was coded and categorized. The participants were informed that their names would be replaced with pseudonyms.

3. RESULTS AND DISCUSSION

The findings were obtained from the questionnaires and interviews with the participants. The interview duration of each participant was varied. The results were divided into three sections: demographic profile of participants, pedagogical knowledge, and learning CALL. The demographic profile of participants elaborated on teaching affiliation, teaching experience, entrance year of higher education, and studying CALL courses during higher education. Pedagogical knowledge explained about the participants' pedagogical knowledge regarding online teaching and learning. Learning CALL elucidated about how the participants expanded their digital/online teaching skills during the pandemic.

3.1. Demographic profile of participants

The participants' demographic profile was obtained from the questionnaires. Table 1 presents the demographic profile of the participants. The participants' teaching affiliations were primary, junior, and senior high schools and universities. Those education levels were all education levels in Indonesia. It implies that all education levels in Indonesia have been represented in this study, although most participants teach at higher education levels. All participants' experience in teaching is above eight years: 8-10 years (50%), 11-15 years (27.1%), and more than 15 years (22.9%). The majority of the participants have teaching experience of 8-10 years. It implies that the participants have adequate teaching experience and have applied specific teaching strategies in a face-to-face classroom. Knowing how they progress and extend their comfort zone from teaching offline to teaching online is intriguing. This pandemic challenges the teacher to adapt their routine teaching in

the classroom to online teaching. Senior teachers were against synchronous teaching initially because of their previous experience [6].

The participants' year of entry to higher education it was revealed that they started to study higher education in different years. The year of entry indicates the curriculum and the courses the participants had taken during their higher education. It also informs whether they have learned a CALL course or not. As the curriculum has changed, the year of entry informs the participants' experience with CALL course. The participants entering the university in 2007 and earlier did not appear to have ever taken a CALL course because CALL course had not been introduced in Indonesia during those years. Furthermore, most participants (83.3%) were not taking CALL courses during their studies in higher education. The results of the demographic profile are shown in Table 1.

Table 1. Participants' demographic profile

Category		Percentage
Teaching affiliation	Primary education	4.2%
	Junior high school	6.2%
	Senior high school	8.3%
	Higher education	81.3%
Teaching experience	8-10 years	50%
	11-15 years	27.1%
	>15 years	22.9%
Year of entry to the higher education	<year 1980	2.1%
	Year 1981-1990	10.4%
	Year 1991-2000	8.3%
	Year 2001-2010	75%
	Year 2011-2020	4.2%
Studying CALL course during higher education	Having CALL course	16.7%
	Not having CALL course	83.3%

3.2. Pedagogical knowledge

The pedagogical knowledge of the participants was obtained from questionnaires and semi-structured interviews. Table 2 presents the results of questionnaires on pedagogical knowledge. The results of the questionnaires showed that the teachers used online platforms (e.g., Google Classroom, school e-learning, WhatsApp) for teaching English during the pandemic (means=3.8). The teachers used online platforms to manage teaching and learning and to support their teaching. The teachers adapted to the shift from offline to online teaching, ensuring that teaching and learning ran well during the pandemic. A teacher said, "*I used LMS from my university. Online teaching and learning used LMS for asynchronous learning and used Zoom for synchronous learning.*" The university's LMS is tailored to meet the teacher's and student's needs; therefore, it facilitates asynchronous learning. Another teacher added, "*I used Google Classroom, WhatsApp, and Zoom. Google Classroom is used to upload assignments, WhatsApp is used for communicating with the students, and Zoom is used for synchronous learning.*" The teachers selected online platforms carefully to meet their needs. It implies that the teachers' pedagogical knowledge is sufficient because they can choose a suitable platform for a particular purpose.

Table 2. The results of questionnaires on pedagogical knowledge

Statements	Mean
I used online platforms (e.g., Google Classroom, school e-learning, WhatsApp) for teaching English during the pandemic.	3.8
I integrated cooperative learning into online teaching.	3.3
I integrated collaborative learning into online teaching.	3.2
I integrated class discussion into online teaching.	3.4
I used cooperative learning synchronously (using Google Meet, Skype, or Zoom).	3.5
I used cooperative learning asynchronously (using Google Classroom, WhatsApp, LMS, Moodle, and school e-learning).	3.5
I used online platforms (e.g., Google Docs, Padlet, and Piazza) to apply collaborative learning.	3.1
I used online platforms (e.g., Google Meet, Zoom, Google Classroom, school e-learning, and WhatsApp) to apply class discussion.	3.6

The teacher integrated cooperative learning into online teaching (means=3.3). It shows that the teacher applies student-centered learning. Cooperative learning is student-centered learning in which the students learn from and with their peers [33]. Nevertheless, applying such an approach in an online teaching environment is complex. It is challenging to adopt a commonly offline teaching strategy because the environment is different, especially because of the varying levels of stability of the internet connection of the students and students' engagement. A teacher uttered, "*I used cooperative learning for synchronous learning because I have to make*

sure the instruction is clear for the students." Instructing cooperative learning is pivotal for cooperative learning to run smoothly. Another teacher added, "*I utilized a breakout room in Zoom for implementing cooperative learning, but the students' engagement is lower than (it was in) offline cooperative learning.*" The teachers have modified the steps in the cooperative learning strategy by using the features of online platforms, like breakout rooms, so they can still use cooperative learning. Nevertheless, the student's engagement was considered low because some students turned off the camera and were passive.

The teachers integrated collaborative learning into online teaching (means=3.2). The teachers applied collaborative learning, meaning that the teachers supported peer learning to be obtained by the students. A teacher added, "*I applied collaborative learning for the learning experience and peer learning, letting the student know their peers' works; how far their peers' progress. Therefore, they can monitor their peers' progress. It can also be used as cascading between students.*" Collaborative learning allows students to learn from each other and work together to finish a particular task. The learning process in collaboration happens through sharing and co-constructing knowledge at different stages of the process [34]. A teacher stated, "*I applied asynchronous collaborative learning for a short essay, but I delivered the instruction synchronously to ensure the instruction was clear.*" Meanwhile, another teacher uttered, "*Collaborative learning is used to make my students know each other because they do not meet each other during the pandemic.*" In an emergency situation like a pandemic, collaborative learning is intended not only for peer learning, but also as a means of knowing each other among students in an online environment.

The teachers integrated class discussion into online teaching (means=3.4). Class discussion triggers students to pose their opinions on specific materials and indicates whether or not the students have sufficient knowledge of the materials. A teacher said, "*I implemented class discussion to assess how far the students know about a certain material. I used Think-Pair-Share synchronously during the class discussion.*" Synchronous online discussion with a well-planned design increases the students' participation [35]. The teacher could assess how far the students know about a particular material by looking at the students' discussion. A teacher added, "*I sometimes put the class discussion at the end of class after the students presented the materials. I usually give a case about the materials they presented.*" The teachers varied the class discussion. It is not necessary to be ready to read the materials but also to reinforce the students' knowledge by giving a case. The teachers' pedagogical knowledge informs the teachers what case can be used for a specific material to ensure the student's comprehension of the materials.

The teachers used cooperative learning synchronously (Google Meet, Skype, or Zoom) (means=3.5), and the teachers used cooperative learning asynchronously (Google Classroom, WhatsApp, LMS, Moodle, school e-learning) (means=3.5). The teachers are able to organize learning synchronously and asynchronously. Their pedagogical knowledge informs them when they should use synchronous or asynchronous learning. A teacher added, "*I implemented synchronous cooperative learning to deliver the theory, while cooperative learning is applied asynchronously for practicum as reinforcement. Above all, it depends on the materials whether it is suitable for cooperative learning or not.*" The teachers used the strategy synchronously and asynchronously, depending on the materials delivered. The teacher's pedagogical knowledge plays a pivotal role in deciding when they should use cooperative learning, either synchronously or asynchronously.

The teachers used online platforms (e.g., Google Docs, Padlet, and Piazza) to apply collaborative learning (means=3.1). The teachers used various online platforms, indicating that they knew the function of several online platforms to meet their needs. Thus, they are able to choose a suitable platform to support collaborative learning. Moreover, it is easier to apply collaborative learning in an online environment because there are a lot of available online platforms, especially for writing. A teacher uttered, "*I used a Padlet for collaborative writing, and it is easier for collaborative learning in an online environment because the students can do the task beyond the class hour.*" Online learning offers flexibility because students can do the task after class. "Anywhere and anytime" is one of the benefits of utilizing technology [2].

The teachers used online platforms (Google Meet, Zoom, Google Classroom, and school e-learning, WhatsApp) to hold class discussions (means=3.6). The teachers still implement the class discussion in an online environment, reflecting on the fact that class discussion is essential in learning. A teacher said, "*Class discussion is implemented synchronously using Zoom. I usually put the class discussion at the beginning or the end of the class meeting.*" The teacher used synchronous class discussion because it provided two-way communication between teachers and students.

3.3. Learning computer-assisted language learning

Table 3 presents the results of questionnaires on learning CALL. Based on the results of the questionnaires, the teachers did not find it difficult to use online platforms at the beginning of the pandemic (means=2.1). This is an exciting result because the teachers did not face difficulty using an online platform, although they had not studied CALL during their studies in higher education. The teachers have been literate about online stuff and have explored the utilization of the internet before the pandemic began. Thus, the teachers can adapt to the online platform quickly. A teacher said, "*Using online platforms is not difficult for*

me because I joined 'Dunia Akademisi,' where I get training for online platforms." Joining an academic group or community facilitates the teachers to learn novel things, such as various online platform functions and how to use them.

Table 3. The results of questionnaires on learning CALL

Statements	Means
I found it difficult to use online platforms at the beginning of the pandemic.	2.1
I joined virtual training/workshop on online learning, which was conducted by overseas organizations or institutions.	3
I joined a virtual training/workshop which was conducted by my institution.	3.3
At the beginning of the pandemic, my institution held a virtual workshop/training on online learning.	3.3
I think that joining workshops/training virtually is efficient because I do not need to spend fees on transportation.	3.5
I think that joining the workshop/training virtually is effective because I am able to re-listen the recording of the workshop.	3.4
I learned a lot of new things, especially online learning, during the pandemic.	3.8
I have discussion with my colleagues to find the solution when I lack ideas or face a problem.	3.5

The teachers joined a virtual training/workshop on online learning conducted by an overseas organization or institution (means=3), and the teachers joined a virtual training/workshop conducted by their institution (means=3.3). The teachers were trying to expand their knowledge regarding online learning by joining virtual workshops/training and developing their pedagogical knowledge in which they possibly gained a new teaching strategy. In addition, the teachers joined any workshops based on the workshop's topic, not the workshop's organizer, as they joined workshops organized not only by their institution but also by overseas institutions. A teacher uttered, "*My consideration in joining a virtual workshop is the topic of the workshop. I join the workshop if the topic is clear and specific, not too general*." Another teacher added, "*I once joined a virtual workshop organized by an organization specific to technology in learning. The organizer held specific workshop topics such as writing and reading, so I learned a brand-new online platform*."

At the beginning of the pandemic, the teachers' institution held a virtual workshop/training on online learning (means=3.3). It implies that the teachers' teaching institution gave attention to the teachers' online learning skills and developed their digital skills. The institution equipping its teachers with digital skills related to online learning exhibited its responsibility to ensure the teaching and learning went smoothly. The institution helps to decrease the teachers' stress by giving a virtual workshop because of a sudden shift from offline to online teaching.

The teachers thought that virtually joining a workshop/training was efficient because they did not need to pay transportation fees (means=3.5). It is beneficial for the teachers because they gain knowledge, but they do not lose their money. Many virtual workshops have been conducted free of charge, and the participants stayed at home during the workshop. A teacher uttered, "*Virtual workshops are efficient in terms of economy and time because I can join the workshop while I am doing something*." Besides economic value, the teachers become multi-tasking when they join the virtual workshop because they can do other things while listening to the virtual workshop.

The teachers thought that virtually joining the workshop/training was effective because they could re-listen to the recording of the workshop (means=3.4). Some workshops shared their presentation materials or recordings with the participants, for they were able to learn the content presented during the workshop by re-listening to the recording. A teacher said, "*It is effective because missed information can be re-listened to. Moreover, bad internet signals can interfere with the workshop. The recording can help*." Further, listening to the recording allows the teachers to pause or rewind the recording to ensure that they grasp the presentation. It is different from the conventional workshop conducted in a building in which the recording of the workshop is not provided. There is a possibility that the teachers miss information from the presenters of the workshops and they cannot re-listen to it.

The teachers learned a lot of new things, especially online learning, during the pandemic (means=3.8). Teachers indeed gain a lot of new things regarding online learning. The pandemic forces teachers to learn online learning tools or strategies. A teacher stated, "*New things that I learn are online platforms I just knew during the pandemic. The benefit I get is new things related to technology which can be used for teaching and learning after the pandemic ends*." What the teachers learn from the pandemic is to integrate technology into teaching and learning. Integrating technology in teaching and learning is essential for teachers to prepare students for the digital world in the future [24]. The teachers learn online stuff, which can still be used in the post-pandemic. In addition, it also develops teachers' professional development in terms of using technology to support teaching and learning.

The teachers had discussions with their colleagues to find the solution when the teachers lacked ideas or faced a problem (means=3.5). The teachers look for their peers or senior teachers to ask for a solution if they lack ideas. A teacher stated, "*I ask my colleagues in the study program. I also browse the internet to get*

teaching ideas." Peer discussion among teachers plays a pivotal role in sharing ideas becuase the teachers can modify what their peers have experienced.

The findings of the study showed that teachers integrate their teaching strategies with online platforms. They used strategies that can be integrated with the online platform, such as collaboration, cooperative learning, and discussion. The teachers modify their strategy to suit the online platform. In addition, the teachers join online workshops and training. Joining online/virtual workshops and training expands the teachers' knowledge of how to maximize the use of online platforms available on the websites. They feel it is easier to join the workshops because they do not need to pay for transportation. Furthermore, online workshops enable them to join the workshops organized by overseas organizations.

4. CONCLUSION

The teachers who participated in this study have affiliations with various education levels in Indonesia, from primary education to higher education. Most of them did not take CALL courses during their studies in higher education because it was not introduced in those years. The teachers use various online platforms to support their teaching and learning during the pandemic. They are able to select a suitable online platform to meet their teaching strategies. The teaching strategies are cooperative learning, collaborative learning, and class discussion. The teachers' pedagogical knowledge informs them on what and how to orchestrate online platforms. Pedagogical knowledge plays a pivotal role in modifying teaching strategies. The teaching strategies are modified to meet online platform features. The teachers are creative in modifying the steps of cooperative learning, collaborative learning, and class discussion in an online environment. Joining virtual workshops and training expands the teachers' digital skills related to online stuff. This is how the teachers improve on using CALL. The teachers join virtual workshops during the pandemic and learn a lot of new things, such as the kind of online platforms and teaching strategies used in an online environment. A novel situation like a pandemic opens an opportunity for teachers to learn and expand their insights on online learning. A pandemic does not always bring a bad impact but also a good one. The pandemic put the teachers in a situation where they must learn. In addition, it also develops their professional development as a teacher.

REFERENCES

[1] M. Monjezi, A. Mashhadi, and M. Maniati, "COVID-19: is it time you made the CALL?" *Computer Assisted Language Learning Electronic Journal*, vol. 22, no. 2, pp. 56–72, 2021.

[2] D. Tafazoli, "Call teachers' professional development amid the COVID-19 outbreak: a qualitative study," *Computer Assisted Language Learning Electronic Journal*, vol. 22, no. 2, pp. 4–13, 2021.

[3] S. Ferdiansyah, M. A. Ridho, F. D. Sembilan, F. D. Sembilan, and S. F. Zahro, "Online literature circles during the COVID-19 pandemic: Engaging undergraduate students in Indonesia," *TESOL Journal*, vol. 11, no. 3, p. e00544, Sep. 2020, doi: 10.1002/tesj.544.

[4] K. Y. Wong, T. Sulaiman, A. Ibrahim, A. G. K. Mohd, O. H. Hussin, and W. M. W. Jaafar, "Secondary school teachers psychological status and competencies in e-teaching during COVID-19," *Heliyon*, vol. 7, no. 11, 2021, doi: 10.1016/j.heliyon.2021.e08238.

[5] R. Rasmitadila *et al.*, "The perceptions of primary school teachers of online learning during the COVID-19 pandemic period: a case study in Indonesia," *Journal of Ethnic and Cultural Studies*, vol. 7, no. 2, pp. 90–109, Jul. 2020, doi: 10.29333/ejecs/388.

[6] S. Alhawsawi and S. S. Jawhar, "Negotiating pedagogical positions in higher education during COVID-19 pandemic: teacher's narratives," *Heliyon*, vol. 7, no. 6, p. e07158, Jun. 2021, doi: 10.1016/j.heliyon.2021.e07158.

[7] L. K. L. Compton, "Preparing language teachers to teach language online: a look at skills, roles, and responsibilities," *Computer Assisted Language Learning*, vol. 22, no. 1, pp. 73–99, Feb. 2009, doi: 10.1080/09588220802613831.

[8] Y. Yi and J. Jang, "Envisioning possibilities amid the COVID-19 pandemic: implications from English language teaching in South Korea," *TESOL Journal*, vol. 11, no. 3, pp. 1–5, Sep. 2020, doi: 10.1002/tesj.543.

[9] L. Budianto and Y. Arifani, "Utilizing WhatsApp-driven learning during COVID-19 outbreak: EFL users' perceptions and practices," *Computer Assisted Language Learning Electronic Journal*, vol. 22, no. 1, pp. 264–281, 2021.

[10] M. Prasetianto, R. Maharddhika, H. Ruminar, and D. I. Prasetyaningrum, "Online learning at early pandemic situation: grassroots voices," *JPI (Jurnal Pendidikan Indonesia)*, vol. 10, no. 3, pp. 570–580, Oct. 2021, doi: 10.23887/jpi-undiksha.v10i3.29561.

[11] U. N. T. Nguyen and L. Nguyen, "Resilience to withstand COVID-19 crisis: Lessons from a foreign language institution in Vietnam," *Computer Assisted Language Learning Electronic Journal*, vol. 22, no. 2, pp. 40–55, 2021.

[12] H. Barjesteh, E. Movafaghardestani, and A. Modaberi, "COVID-19's impact on digitalization of education: incorporating visual vocabulary learning application to foster vocabulary knowledge," *Asian Education and Development Studies*, vol. 11, no. 1, pp. 172–187, Jan. 2022, doi: 10.1108/AEDS-05-2020-0111.

[13] P. Sepulveda-Escobar and A. Morrison, "Online teaching placement during the COVID-19 pandemic in Chile: challenges and opportunities," *European Journal of Teacher Education*, vol. 43, no. 4, pp. 587–607, 2020, doi: 10.1080/02619768.2020.1820981.

[14] W. Zhang, Y. Wang, L. Yang, and C. Wang, "Suspending classes without stopping learning: China's education emergency management policy in the COVID-19 outbreak," *Journal of Risk and Financial Management*, vol. 13, no. 3, p. 55, Mar. 2020, doi: 10.3390/jrfm13030055.

[15] R. Dashtestani, "Online English for academic purposes instruction in the context of Iran: exploring the instructor element," *Teaching English with Technology*, vol. 20, no. 5, pp. 23–37, 2020.

[16] A. Selvaraj, V. Radhin, K. A. Nithin, N. Benson, and A. J. Mathew, "Effect of pandemic based online education on teaching and learning system," *International Journal of Educational Development*, vol. 85, Sep. 2021, doi: 10.1016/j.ijedudev.2021.102444.

[17] Y. Lee and K. I. Martin, "The flipped classroom in ESL teacher education: an example from CALL," *Education and Information Technologies*, vol. 25, no. 4, pp. 2605–2633, Jul. 2020, doi: 10.1007/s10639-019-10082-6.

[18] S. J. Rafiee and S. A. Purfallah, "Perceptions of junior high school teachers toward computer assisted language learning (CALL) within the context of Azarbayjan Provinces," *Procedia-Social and Behavioral Sciences*, vol. 98, pp. 1445–1453, May 2014, doi: 10.1016/j.sbspro.2014.03.564.

[19] H. Oz, M. Demirezen, and J. Pourfeiz, "Digital device ownership, computer literacy, and attitudes toward foreign and computer-assisted language learning," *Procedia-Social and Behavioral Sciences*, vol. 186, pp. 359–366, May 2015, doi: 10.1016/j.sbspro.2015.04.028.

[20] P. Savas, "CALL (computer-assisted language learning) specialists preparation," in *The TESOL Encyclopedia of English Language Teaching*, Wiley, 2019, pp. 1–7, doi: 10.1002/9781118784235.eelt0425.

[21] J. M. Santos and R. D. R. Castro, "Technological pedagogical content knowledge (TPACK) in action: Application of learning in the classroom by pre-service teachers (PST)," *Social Sciences & Humanities Open*, vol. 3, no. 1, 2021, doi: 10.1016/j.ssaho.2021.100110.

[22] G. Mohammadi and D. Tafazoli, "Developing teachers' reflective practices through a virtual exchange program," *Computer Assisted Language Learning Electronic Journal*, vol. 23, no. 1, pp. 215–232, 2022.

[23] D. Rafazoli, "Afordances of computer-assisted language learning in higher education: a qualitative inquiry," *Lenguas Modernas*, vol. 58, pp. 55–70, 2021.

[24] A. Lachner *et al.*, "Fostering pre-service teachers' technological pedagogical content knowledge (TPACK): a quasi-experimental field study," *Computers & Education*, vol. 174, p. 104304, Dec. 2021, doi: 10.1016/j.compedu.2021.104304.

[25] A. Dina and S.-I. Ciornei, "The advantages and disadvantages of computer assisted language learning and teaching for foreign languages," *Procedia-Social and Behavioral Sciences*, vol. 76, pp. 248–252, Apr. 2013, doi: 10.1016/j.sbspro.2013.04.107.

[26] P. Pirasteh, "The effectiveness of computer-assisted language learning (CALL) on learning grammar by Iranian EFL learners," *Procedia-Social and Behavioral Sciences*, vol. 98, pp. 1422–1427, May 2014, doi: 10.1016/j.sbspro.2014.03.561.

[27] M. Tal and M. Yelenevskaya, "Computer-assisted language learning: challenges in teaching multilingual and multicultural student populations," *Procedia-Social and Behavioral Sciences*, vol. 47, pp. 263–268, 2012, doi: 10.1016/j.sbspro.2012.06.649.

[28] T. Başöz and F. Çubukçu, "Pre-service EFL teacher's attitudes towards computer assisted language learning (CALL)," *Procedia-Social and Behavioral Sciences*, vol. 116, pp. 531–535, Feb. 2014, doi: 10.1016/j.sbspro.2014.01.253.

[29] K.-O. Jeong, "Preparing EFL student teachers with new technologies in the Korean context," *Computer Assisted Language Learning*, vol. 30, no. 6, pp. 488–509, Aug. 2017, doi: 10.1080/09588221.2017.1321554.

[30] S. Whyte, E. C. Schmid, S. van H. Thompson, and M. Oberhofer, "Open educational resources for CALL teacher education: the iTILT interactive whiteboard project," *Computer Assisted Language Learning*, vol. 27, no. 2, pp. 122–148, Mar. 2014, doi: 10.1080/09588221.2013.818558.

[31] M. Nazari and I. Xodabande, "L2 teachers' mobile-related beliefs and practices: contributions of a professional development initiative," *Computer Assisted Language Learning*, vol. 35, no. 7, pp. 1354–1383, Sep. 2022, doi: 10.1080/09588221.2020.1799825.

[32] W. A. Renandya, F. A. Hamied, and N. Joko, "English language proficiency in Indonesia: issues and prospects," *The Journal of Asia TEFL*, vol. 15, no. 3, pp. 618–629, Sep. 2018, doi: 10.18823/asiatefl.2018.15.3.4.618.

[33] F. M. Ivone, G. M. Jacobs, and W. A. Renandya, "Far apart, yet close together: cooperative learning in online education," *Studies in English Language and Education*, vol. 7, no. 2, pp. 271–289, Sep. 2020, doi: 10.24815/siele.v7i2.17285.

[34] R. Cullen, J. Kullman, and C. Wild, "Online collaborative learning on an ESL teacher education programme," *ELT Journal*, vol. 67, no. 4, pp. 425–434, Oct. 2013, doi: 10.1093/elt/cct032.

[35] B. Zheng and M. Warschauer, "Participation, interaction, and academic achievement in an online discussion environment," *Computers & Education*, vol. 84, pp. 78–89, May 2015, doi: 10.1016/j.compedu.2015.01.008.

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