



© 2025 the authors. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

1. Reihaneh. Varedi<sup>ORCID</sup>: Department of English Language Teaching, University of Tehran, Kish International Campus, Tehran, Iran.
2. Ali Akbar. Khomeijani Farahani<sup>ORCID</sup>: Department of English Language Teaching, University of Tehran, Kish International Campus, Tehran, Iran. (Email: Farahani@ut.ac.ir)

Article type:  
Original Research

Article history:  
Received 09 January 2025  
Revised 08 March 2025  
Accepted 13 March 2025  
Published online 20 March 2025

### How to cite this article:

Varedi, R., & Khomeijani Farahani, AA. (2025). The Impact of Information Technology in the Teaching and Learning of English Speaking and Listening as a Foreign Language: A Case Study of Language Schools in Shiraz. *Assessment and Practice in Educational Sciences*, 3(1), 1-11.  
<https://doi.org/10.61838/japes.3.1.8>

# The Impact of Information Technology in the Teaching and Learning of English Speaking and Listening as a Foreign Language: A Case Study of Language Schools in Shiraz

## ABSTRACT

This paper investigates the impact of computer-assisted language learning (CALL) on teaching and learning English listening and speaking skills in two distinct approaches: self-access and semi-instructed. The study explores the influence of information technology on curricula designed by teachers and on students' learning strategies. The research utilizes a case study approach involving two schools, Noor Kherad and Parto Alavi, to analyze the use of CALL materials and the interactive dynamics in each approach. The methodology includes a preliminary study, a pilot study, and the main study, employing questionnaires, interviews, and observations. Findings reveal that self-access promotes independent learning with varying proficiency levels and emphasizes independent student management of learning activities, while semi-instructed learning maintains a balance between autonomy and teacher guidance. The impact of computers on teaching and learning is analyzed in terms of materials, task design, computer roles, and teacher roles. The study contributes to understanding the interactive relationship and challenges in implementing CALL for English language skills and contributes insights into the evolving landscape of English language teaching in the information technology era.

**Keywords:** Computer-assisted language learning (CALL), Listening, Speaking, Self-access approach, Semi-instructed approach, Learning strategies

## Introduction

Information Technology (IT) has been a crucial part of teaching and learning since its presence. The significance of IT in daily life, particularly for the youth and students shows the necessity for their use in the schools. The combination of information technology and learning English creates innovative lessons that can help a wide variety of students who learn English as foreign language (1, 2). Overall, most schools in developed and developing countries are becoming connected to the internet and have information technology tools such as computers, laptop, iPad, and tablet in every classroom. It is time for

teachers and students to use these tools as instruments of teaching and learning particularly in English classrooms. The current age (information technology era) creates new challenges and responsibilities for teachers (3). The methodologies for teaching English have undergone significant transformation with the advent of information technology. Technology provides many opportunities for teachers and students in order to create and choose the effective and considerable methods of teaching and learning in the field of the English language (4).

The definition of Computer-Assisted Language Learning is 'the search for and study of applications of the computer in language teaching and learning' (5). Although the name is a fairly new one, the study of CALL is undoubtedly one of the fastest developing research areas in language acquisition. This is, to a large degree, a reflection of the development of computer technology and its expanding application in language learning contexts. However, the effectiveness of CALL has also been questioned. This skepticism mostly concerns how to make appropriate use of the computer technology in language learning and how to integrate CALL materials into different learning contexts such as instructed classes, self-access centers and distance learning (6). The skepticism is largely due to the gap between CALL theories and reality, or more specifically, 'a lack of guidelines or standards for the present generation of CALL materials... CALL authors have no reliable conceptual framework, or yardstick by which to measure their work' (7).

The SLA literature contains work representing a variety of objectives and approaches for investigating the process of second language development. In particular, the theories of SLA have reliable research methodologies available to properly frame hypotheses and evaluate the results of CALL practice (8). The implication of SLA theories for CALL has been addressed in the CALL literature by a number of researchers (9). The SLA theories that have been used in CALL studies include interaction hypotheses, communicative language theory, instructional design and theories of teaching and learning (10). However, the very abundance of SLA theories has brought problems to the conceptualization of CALL.

One of the effective ways to bridge the gap between theoretical frameworks and concerns of SLA and the CALL practice is 'a perspective on CALL which provides appropriate empirical research methods for investigating the critical questions about how CALL can be used to improve instructed SLA (2).

Interactive language learning is not a new term to second language teachers and researchers. In Wells' words, 'Linguistic interaction is a collaborative activity involving the establishment of a triangular relationship between the sender, the receiver and the context of situation' (11).

In an educational context, the goal of the interaction is to create a situation in which students can 'use for actual communication what they have been learning in a more formal fashion' through the cooperative activities with teachers and other students (12). An interactive learning environment has several advantages for foreign language acquisition. For example, an interactive learning environment fosters learners' motivation (1).

Interaction is important in L2 acquisition. Through interaction, learners can increase their language store by listening to and reading authentic materials. Through interaction, they can also use the language knowledge in real life exchanges where expressing meaning is important to them. In a second language situation, interaction is essential for learners to live in a new language and culture, but learners need help with skills of interaction. Promoting interaction in a language class requires that the focus of a class be on the student instead of the teacher. As Rivers points out, 'Teacher- directed and -dominated classrooms cannot, by their nature, be interactive classrooms, and this is what language teachers need to learn. Interaction can be two-way, three-way, or four-way, but never one-way' (13). Similarly, the study by Ellis shows that class interactions (i.e. the learners receive assistance from the teacher in expressing and developing their own ideas) contribute to language acquisition, so 'it can be argued that giving learners control of the discourse is one way of making the classroom acquisition-rich.

Since the amount of information to be processed by language learners is high in a language classroom, learners use different language learning strategies in performing the tasks and processing the new input they encounter. The importance of learning strategies is clearly stated in National Standards in Foreign Language Education Project by the US Department of Education, learning strategies are an integral part of language programmes, providing students with the tools for a lifetime of learning' (14). Oxford also states that language learning strategies '... are especially important for language learning because they are tools for active, self-directed movement, which is essential for developing communicative competence' (1990: 1).

Apart from developing communicative competence, students become more proficient advanced language learners with help and instruction from teachers. Helping students to understand sound language learning strategies and training them to develop and use such good language learning strategies can be considered to be characteristics of a good language teacher (15).

In the present era the English teachers would be outdated if they did not take advantage of the modern technological methods in teaching listening and speaking skills in their classroom (16). As IT tools such as computers and the internet become increasingly prevalent in educational settings such as schools and classrooms, the discussion about their impact on teaching and learning intensifies. Wicaksono, B. H., Ismail, S. M., Sultanova, S. A (2023) indicated that with Computer-assisted language learning (CALL), as in other areas of education, there has been a distinct movement towards using computers for holistic, enrichment activities and away from tutorial and drill applications (17). In this paper, the researcher collected data to show the impact of information technology on curricula designed by teachers and on students' learning strategies.

## Methods and Materials

### *Methodological Approach*

The present research is exploratory in nature. It is a small-scale study because from the very beginning, I have had difficulty in finding a very large size of sample. The size of sample has also determined that this is largely a qualitative study. Questionnaires and interviews were tested as the research method in all phases of this study especially in the pilot study which is demonstrated in the following section.

### *Research Methods*

Various research methods have been employed by CALL researchers to acquire valuable information about learning activities and learning tasks. Those most normally used include quasi-experimental comparison of groups, pretest and posttest design, discourse analysis, interview, questionnaire and observation. Chapelle (1998), for example, illustrates the use of discourse analysis to investigate learners' linguistic output in CALL tasks in which language was used communicatively. When I began selecting appropriate methods, I considered various research methods in the relatively new research area of e-learning. These included technology-specific methods, such as online chatting and email, as well as traditional methods like interviews, questionnaires, and observation. However, each method has restrictions which affect the possibility of fully achieving the goal of this study.

The conventional quantitative and qualitative methods, such as questionnaires, interviews and observation are capable of eliciting data with considerable breadth and depth.

### *Research Design*

The current research includes three stages: the preliminary study, the pilot study and the main study. A preliminary study to validate the feasibility of the research; a pilot study to examine research methods and the main study. A variety of research

methods were employed throughout the three stages including email questionnaire, print questionnaire, interview and in-depth interview.

### Preliminary Study

The first stage of the preliminary study provided a starting point for the research by providing a general overview of CALL application in the Shiraz schools, while the second stage outlined several objectives for future work. First, it drew a general picture of the state of computer-assisted listening and speaking programs in the Shiraz schools. Although the computer technology had not been widely used by the Shiraz schools to teach English, there were still quite a few schools that had shown their interest in this new way of teaching, and had been trying to integrate the computer technology into their main curricula. Second, the preliminary study provided a basis for locating target schools for future more detailed investigation.

The preliminary study was followed by the pilot study which tested the research instruments (18). Based on the results of the preliminary study and the pilot study, the main study examined in great depth the impacts of computer technology on learning and teaching English listening and speaking skills.

### The Pilot Study

Based on the results of the questionnaire surveys 2 schools were chosen for the pilot study in order to test and revise research methods. Both schools had been using computer technology for training in listening and pronunciation for several years. More importantly, it was easy to gain access to both teachers and students. Listening tasks were also integrated with other tasks (19). For example, students listened to a conversation through computers, and then finished gap-filling exercises. This therefore provided practice in grammar and vocabulary at the same time. As far as the speaking task was concerned, the Language Centre had installed a software package American English Learning, to train students' pronunciation, the basic speaking skill. Each part of this program focused respectively on phonetic symbols, pronunciation of words and phrases and then tone and inflection. Basically, students heard words, phrases or sentences from a computer through headphones and then imitated the pronunciation into microphones. Then the computer would automatically compare the two sounds and give an immediate feedback on whether the students' pronunciation was correct or not. But this kind of feedback had its limitation in that there were no guidance on what was wrong and what should be done to correct the mispronunciation.

### Sampling

The pilot study was intended to test and refine the research methods for the main study. 100 students from 4 classes were available in both schools. They were intermediate English learners who had been studying English for at least 2 years. All 100 students were attending a CALL listening course for at least six months. Some of them attended computer-assisted pronunciation courses as well. More importantly, both the students and teachers in the schools were cooperative and accessible.

### Research Materials

There were two stages: questionnaire to and interviews with both students and teachers.

### Questionnaires

The questionnaire survey aimed at investigating the impact of computers on students' learning strategies. Altogether 100 students from 4 classes participated in the questionnaire survey. The 100 participants completed the questionnaires in front of me or the tutor, which guaranteed a high response rate of 100%.

### Interviews

The other part of the pilot was to test if the interview instrument was appropriate to collecting information for the main study (20). The questionnaire survey was followed by interviews of students selected according to their answers to the questionnaire. 25 out of 100 students attended the interview as volunteers. In the interview, the students were asked for an account in a semi-structured fashion about what they observed themselves doing with the computers while performing listening and speaking tasks.

### Design of the Main Study

The main study employed a case study approach. Two schools were selected to study different ways of using computer technology in language teaching and learning. The selection of these two schools was based on two main reasons. Firstly, the two classes used computer technology in teaching English listening and/or speaking in different ways so that I was able to encompass a broad range of study types. In the first school, teachers incorporated computer technology into their teaching by developing their own courseware using software, exemplifying how a complete software package can be integrated into the core curriculum. In contrast, the second school utilized a range of self-designed courseware, enabling students to practice at their own convenience, which demonstrated the self-access mode of CALL application. Although the CALL tasks were supplementary to the main curriculum, organized CALL classes were conducted, representing an example of structured semi-instructed CALL practice. Additionally, both schools allowed access to their ongoing CALL listening and speaking programs, and both teachers and students were cooperative and supportive.

### Sample

I chose 50 students from each of the two schools. Although there were nearly two hundred students in each schools participating in the pilot work, in the first school only fifty students were willing to participate in my study. In order to keep the balance of student numbers, I chose fifty students from the second school, too. However, fortunately, the education background of the total group of 100 students was very similar. They were all school students who had learned English for at least three years at English language institute.

### Towards the analysis framework

At the beginning of this paper, I explained the aim of the present study was to investigate the impact of computer technology on learning and teaching English listening and speaking as a foreign language, which are reflected in three areas: students' learning strategies, teaching methods and courseware design. Accordingly, the main research is divided into four sub-questions:

1. Do we need to use information technology' tools in the learning English process?
2. How do different types of information technology influence students' speaking and listening skills as regards to learning strategies?
3. Do teachers and students benefit when information technology tools are used in the classroom?

What are the students' attitudes toward the use of information technology in learning English?

## Findings and Results

### *The School of Noor kherad: Self-Access Listening Practice*

The English Instruction program led by Noor Kherad offered a diverse range of English courses, spanning from elementary to advanced levels. In addition to conventional classroom teaching, a wide array of supplementary language materials were provided to enhance the learning experience, either as additional resources for in-class use or as homework assignments for students. The school was well-equipped with modern technology, including computers and interactive smart boards capable of displaying pre-recorded videos and accessing online English resources. Furthermore, the school featured computers installed with specialized language learning software, encompassing multimedia CD-ROMs, videos, and audio cassettes.

To support students in honing their listening and speaking skills, the school also provided audio players equipped with recording capabilities, enabling students to practice and compare their pronunciation with that of native speakers. For those encountering challenges in their English studies, students had the opportunity to seek guidance and general language learning advice from dedicated Language teachers.

### *The choice of material*

The listening materials primarily originated from the school's teaching staff and encompassed a variety of content sources, including academic lecture videos, BBC news, Press TV, and other English programs. One of the Language teachers specifically created audio files based on episodes of the Press TV program "Iran Today." These audio files typically consisted of 3-minute summaries of the program, accompanied by corresponding exercises. These exercises involved true or false questions, gap-filling activities, and correction segments. The exercises were categorized into three levels: fundamental, preliminary, and advanced.

On a daily basis, faculty members received these sound files via email around lunchtime, and they assigned the related TV programs as homework for the students. Additionally, the school shared these sound files on its social media channels, providing students with access to the material either through social media platforms or directly from the school.

Furthermore, the Language Class was in the process of developing an online self-access language learning program accessible to all students. This program comprised a collection of documentaries and discussions on topics related to science, agriculture, and wildlife, all designed to improve English proficiency. The listening segments within these videos were intentionally brief, typically lasting 3 to 5 minutes, allowing students to engage in quick practice sessions during breaks between videos. Each listening task was accompanied by corresponding exercises, and students could select tasks based on their preferred subjects and skill levels. It's worth noting that, at the time of the present study, there were no specific task examples available for reference in this thesis.

### *The way to use self-access material*

The pilot started around the beginning of January 2023 and finished at the end of March 2023. The Pilot group consisted of 2 groups of students, each led by an English tutor. The students were chosen from classes taught by each tutor and each group had 25 students, altogether 50 students. The two tutors were volunteers who were interested in taking part in the pilot study. Tutors also had a 'student' login to experience the material from a student's perspective.

The sample of students was intended to cover levels and courses of the school students. The students were from different part of city, and were studying EFL (English as a Foreign) in different English language institute.

At the commencement of the pilot study, students were provided with headsets and a document outlining the objectives of the pilot program, along with instructions on how to utilize the classroom equipment. The primary objective of this initiative was to assess the feasibility of opening up the Noor Kherad language lab for use by all students without the need for tutor-supported training sessions.

Once the pilot students had been introduced to the Noor Kherad language lab, they were granted access with unique logins and passwords. Students were given the autonomy to decide when, where, what content, and for how long they wished to practice. In the event of any issues arising related to either language or technology, students were offered comprehensive support from their tutors via online communication through the school's internal email system. It was strongly encouraged for students to seek assistance from tutors using the school system, rather than opting for face-to-face interactions. This approach aimed to replicate the scenario of distance learning, wherein tutors were providing support to students they had never physically met.

By the end of the pilot study, feedback from students and tutors was collected in order to identify problems of both online materials and the self-access approach to delivering those materials, such as places to use self-access material, timing and feedback. The following three sections will address these issues one by one.

#### *The School of Parto Alavi: Semi-Instructed Computer-Assisted Listening Courses*

Similar to the Language Lab in most of Shiraz school, the English Language Teaching (ELT) program at the school of Parto Alavi offered a range of English courses. Generally speaking, these courses took place in the classroom instructed by teachers. There were also regular CALL classes every week which were set in computer laboratories. In the computer laboratories, students were introduced to a range of courseware, either commercial or developed by the teaching staff at the ELT class. But the CALL classes were only supplements to the main curriculum: extra exercises for students.

#### *The choice of material*

The computer laboratories installed some commercial programs such as Rosetta Stone and Learn English as a Native to help students improve their listening and speaking skills.

There were two listening programs: Text builder and Academic English Language Exercises. The Text builder was basically a text reconstruction program with the option of listening to the text. Students listened to a text on computers, and finished exercises afterwards. There were three types of exercise. Students chose to do the C-Text which hid the second half of the word, or the X-Text which hid the first half of the word, or Total-Deletion in which a whole word, an entire phrase or sentence was missing. The C-Text tended to be used for grammar exercises as well, while the X-Text was more vocabulary focused. In this sense, the Text builder program involved mixed skill training.

The listening tasks were just one component of the Academic English Language Exercises program, which encompassed various language skills. The fundamental structure of the listening tasks resembled that of Text Builder. In these tasks, students worked on exercises corresponding to the audio texts played on the computer. These exercises primarily comprised multiple-choice questions and gap-filling activities. Additionally, the program provided students with access to background language knowledge. Students could utilize the built-in dictionary to look up unfamiliar words and reference grammar rules relevant to the exercises.



Upon completing the exercises, students received scores generated by the computer. Furthermore, they had the option to seek more detailed explanations and clarification from their teachers if needed.

### The way of using CALL materials

The school used CALL listening material in a semi-instructed class. This was an approach between self-access and instructed class. The learning activities were carried out in an organized classroom. Although present in the class, teachers did not tightly control the practice activities. Students had the flexibility to work at their own pace, and had direct communication with teachers and classmates. For example, Teacher A usually instructed a listening class in a semi-controlled way:

*We might let the students do the exercises themselves. I tend to introduce the subjects to the students and then talk about it at the beginning of the class. And show them how to do the exercises because they have not used the software before. Then I let them work at their own pace. While they are working, I need to keep an eye to how they are doing and help when they get stuck. Usually, we will come together again at the end of the class, and talk about it (Teacher A).*

Hence, the semi-instructed approach shared similarities with the self-access approach in that it granted students significant control over their learning process. Students had the autonomy to select materials that suited their needs, adjust the pace of their practice, and revisit challenging sections for better comprehension. However, the semi-instructed approach differed from the self-access approach by incorporating elements of the instructed approach.

Firstly, teachers played a prominent role in the classroom. They structured the overall curriculum and decided on the subjects that students would engage with during class. Secondly, at the start of each class, teachers introduced students to various subjects and offered guidance on learning strategies and essential skills for effective practice (Chen, Mei-Ling. 2012). Thirdly, while students were actively practicing, teachers regularly monitored their progress and provided assistance with both language-related and technical challenges that students encountered. Finally, at the conclusion of a class, teachers gathered students for a debriefing session, offering general feedback on the lesson. However, it's important to note that this final stage might be omitted depending on individual teaching styles.

### **Discussion and Conclusion**

This paper has explored how students in two different schools employed learning strategies to enhance their listening and speaking skills through computer-assisted language learning (CALL) programs. The two schools implemented distinct approaches to using CALL for listening and speaking, with one following a self-access approach and the other adopting a semi-instructed approach. Consequently, the utilization of learning strategies appeared to differ accordingly.

In the self-access approach, students were tasked with the responsibility of independently managing their own learning activities. However, students' proficiency in this varied. Advanced language students demonstrated greater awareness of and confidence in managing and planning their studies compared to those at lower proficiency levels. Pre-session training proved effective in assisting students in becoming acquainted with the programs and developing the capacity to study independently.

The school provided students with a range of listening and speaking materials which included videos of academic lectures, recordings of news programs and commercial language learning programs. The materials were intended to simulate real conversation contexts so that students experienced what happened in real life.

Although there was interaction between computers and students, and between teachers and students, communication among students and teachers needed to be strengthened perhaps by setting up an online community to encourage students'



communication, discussion and mutual self-help. Through communication, teachers also helped students improve their cultural knowledge.

In the self-access approach, the key factors that influenced students' concentration primarily revolved around the design of tasks and the functionality of equipment, rather than the timing and location of their practice sessions. Students tended to lose their concentration when the listening tasks were poorly designed or when they felt uncomfortable with the equipment being used.

Self-directed learning was a prominent feature of self-access CALL materials. Listening tasks typically included instructions that guided students on how to utilize the online resources effectively. However, not all students were proficient at self-monitoring their learning activities, which underscored the importance of having teachers available for instruction, inquiries, and guidance.

Students expressed appreciation for the flexibility afforded by self-access learning, but they also acknowledged that increased teacher involvement in the self-access approach, such as providing pre-training and offering online support, would be beneficial.

The semi-instructed approach occupied a middle ground between the fully instructed approach and the self-access approach. In semi-instructed CALL listening classes, students maintained control over their learning activities while operating within the general framework established by teachers. Teachers primarily assumed roles focused on monitoring students' learning activities and providing assistance when requested.

The students had the chance to communicate with teachers and classmates face to face. If they had any linguistic or/and technical problems during practice, and they did not find answers from the CALL programs, they were able to turn to teachers for help or discuss things with classmates. The interactive activities in the semi-instructed learning environment appeared to motivate students. But more interaction among students and teachers needed to be encouraged by introducing pair-work in exercises, class activities such as discussion and role play; and by more involvement of teachers, for example providing cultural background information, explaining learning strategies, and introducing the ways to use listening programs.

In the semi-instructed approach, two key factors significantly influenced students' concentration: the pressure stemming from teachers' supervision and the flexibility offered in their learning process.

While students retained control over their learning activities, selecting appropriate listening tasks and adjusting their learning approaches, the ongoing support from teachers remained crucial. Students were adept at identifying their learning challenges and finding effective solutions, which underscored the need for continuous teacher involvement throughout the learning process (Mmyei, Z. 2005).

Students generally held positive attitudes toward the semi-instructed approach. They appreciated the autonomy it afforded them in managing their learning activities and welcomed the pressure generated by teacher supervision. Moreover, they valued the opportunity for direct communication with their teachers. However, students also expressed a desire for more interaction between fellow students and teachers within this approach.

One of the findings of the current research is to define two approaches of self-access and semi-instructed of CALL listening application. It has also identified the problems. By studying the two approaches, I have been able to draw up a framework for analysis and apply it to examine the impact of computers on teaching and learning listening in terms of teaching methods, learning strategies and CALL programs.

Another finding of this research is the interactive relationship in the two approaches. The interaction in the CALL listening class is influenced by the four elements, namely, the choice of teaching materials, the way of designing and presenting learning tasks, the roles played by computers and the role played by teachers.

## Acknowledgments

We would like to express our appreciation and gratitude to all those who helped us carrying out this study.

## Authors' Contributions

All authors equally contributed to this study.

## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

## Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

## Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

## References

1. Hwang GJ, Rahimi M, Fathi J. Enhancing EFL learners' speaking skills, foreign language enjoyment, and language-specific grit utilising the affordances of a MALL app: A microgenetic perspective. 2024. doi: 10.1016/j.compedu.2024.105015.
2. Flanigan AE, Akcaoglu M, Ray E. Initiating and maintaining student-instructor rapport in online classes. 2022. doi: 10.1037/t88820-000.
3. De Bot K, Lowie W, Verspoor M. Second Language Acquisition: An Advanced Resource Book. London/New York: Routledge; 2005.
4. Hong-Nam K, Leavell A. Language learning strategy use of ESL students in an intensive English learning context. *System*. 2006;34:399-415. doi: 10.1016/j.system.2006.02.002.
5. Nurul Laili RN, Nashir M. Higher Education Students' Perception on Online Learning during Covid-19 Pandemic. 2021. doi: 10.31004/edukatif.v3i3.422.
6. Liu G, Ma C. Measuring EFL learners' use of ChatGPT in informal digital learning of English based on the technology acceptance model. 2023. doi: 10.1080/17501229.2023.2240316.
7. Liu GZ, Fathi J, Rahimi M. Using digital gamification to improve language achievement, foreign language enjoyment, and ideal L2 self: A case of English as a foreign language learners. 2024. doi: 10.1111/jcal.12954.
8. Li Y, Li X, Su Y, Peng Y, Hu H. Exploring the role of EFL learners' online self-regulation profiles in their social regulation of learning in wiki-supported collaborative reading activities. 2020. doi: 10.1007/s40692-020-00168-3.
9. Ahmad AS, Hamad KY. Technology Integration in Teaching: A Study that Examines How Technology Integration Affects Student Achievement. 2020. doi: 10.22158/jecs.v4n3p44.
10. Al-Nuaimi MN, Al-Emran M. Learning management systems and technology acceptance models: A systematic review. 2021. doi: 10.1007/s10639-021-10513-3.

11. Lee SM. A systematic review of context-aware technology use in foreign language learning. 2022.
12. Kartal G. Evaluating a mobile instant messaging tool for efficient large-class speaking instruction. 2022. doi: 10.1080/09588221.2022.2074463.
13. Hidayat A. Students' Perceptions of E-learning During Covid-19 Pandemic. 2020. doi: 10.33365/jm.v2i2.689.
14. Hao T, Wang Z, Ardasheva Y. Technology-assisted vocabulary learning for EFL learners: A meta-analysis. 2021. doi: 10.3102/1574066.
15. García-Gómez A. Learning through WhatsApp: Students' beliefs, L2 pragmatic development and interpersonal relationships. 2022.
16. Tragant E, Pinyana À, Mackay J, Andria M. Extending language learning beyond the EFL classroom through WhatsApp. 2022. doi: 10.1080/09588221.2020.1854310.
17. Wicaksono BH, Ismail SM, Sultanova SA, Abeba D. I like language assessment: EFL learners' voices about self-assessment, self-efficacy, grit tendencies, academic resilience, and academic demotivation in online instruction. 2023. doi: 10.1186/s40468-023-00252-2.
18. Mackey A, Gass SM. Second Language Research: Methodology and Design. New Jersey: Mahwah/London: Lawrence Erlbaum; 2005.
19. Ismaili M. The effectiveness of using movies in the EFL classroom - a study conducted at South East European University. Academic Journal of Interdisciplinary Studies. 2013;2(4):121-32. doi: 10.5901/ajis.2012.v2n4p121.
20. Hatlevik OE, Christophersen K-A. Digital competence at the beginning of upper secondary school: Identifying factors explaining digital inclusion. Computers & Education. 2013;63:240-7. doi: 10.1016/j.compedu.2012.11.015.