

ISIR Journal of Arts, Humanities and Social Sciences (ISIRJAHSS)
ISSN: 3048-7463 (Online)
Frequency: Bimonthly
Published By ISIR Publisher
Journal Homepage Link- https://isirpublisher.com/index.php/isirjahss

Computer Assisted Language Learning (CALL)

By

Gulay Yasinli[1], Alaviyya Nuri[2]

[1]Teacher Baku Engineering University Orcid: 0009-0006-0633-0600
[2]Teacher Nakhchivan State University ORCID: 0000-0003-4219-1071

Article History

Received: 10/12/2025
Accepted: 28/01/2026
Published: 07/02/2026

Vol – 3 Issue – 1

PP: -33-36

Abstract

With the rapid development of modern information and communication technologies (ICT), computer-assisted language learning (CALL) has become an integral part of foreign language education. CALL enables learners to develop speaking, listening, reading, and writing skills without time or location constraints. However, the effectiveness of technology in language teaching depends on its proper integration into the lesson. Computer-mediated communication (CMC) complements CALL by providing synchronous and asynchronous platforms for interactive learning. Synchronous CMC, such as video conferencing and online chats, promotes real-time oral and written communication, enhancing fluency, grammar, and discussion skills.

This study highlights the pedagogical potential of CALL and CMC, emphasizing that technology should serve educational goals rather than overshadow them. Effective implementation relies on careful needs analysis, informed selection of digital tools, and integration of technology into all aspects of language learning.

Keywords: *CALL, CMC, language learning, ICT, synchronous communication, asynchronous communication, pedagogical integration*

Introduction

With modern ICT, it is possible to develop speaking, listening, reading and writing skills without time and place constraints. The integration of technology into the lesson sometimes turned the computer into the central object of the lesson, while the topic and main goal of the lesson remained out of focus. The fact that the use of technological tools in the learning process manifested itself too clearly hindered the learning process in a certain sense. The factors that cause such situations are various.

For example, the lack of regular use of technology in the classroom (problems with equipment, teachers' unwillingness to use computers, teachers' or students' insufficient computer skills, etc.) makes it an extraneous element in the lesson, which distracts students from the main issue. Or, when the computer is used inappropriately and incompetently, it becomes an unimportant part of the process and even slows it down. Underestimation or exaggeration of the potential of technological tools, teachers' hesitant attitude towards technology and its effectiveness in the teaching and learning process are some of the factors that reduce the effectiveness of computers in the classroom. Experts who observed the problems in this area put forward the concept of "normalization of CALL" and investigated the optimal solutions to the problems. It is believed that the normalization of CALL can occur if teachers and language learners use the computer only as an integral part of the lesson, for example, as a pen or a book, without feeling restricted or hindered, without showing an exaggerated attitude towards the tasks they can perform using the computer.

By help of CALL or other modern devices at schools, universities and language courses enhances language learning to a great level. Lack of these devices at modern classrooms may give rise to less effective learning when communicative methods are applied. This article examines the importance of CALL and the use of ICT in the schools and how well they aid learners to boost their level of language proficiency.

In this article qualitative and quantitative methods have been used. It examines literature review and survey results conducted in EU and Azerbaijan schools.

Materials and Methods

As technologies that support language teaching and learning improve and new devices appear on the market, there will be a favorable environment for CALL advocates and authors to exploit the ever-evolving technologies pedagogically. However, the scientific validity of these innovations, that is, their suitability for teaching and learning, is always under

*Corresponding Author: **Gulay Yasinli** .

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question. Technological innovations will further increase the enthusiasm of those who intend to try them out for teaching and learning purposes, but scientific research to prove the effectiveness of their use cannot keep up with the pace of innovation. Research studies conducted to verify the effectiveness of a technology and obtain evidence for it are not complete, the technology is either considered obsolete or is being replaced by a new one. However, there are also sources that do not lose their relevance in didactic terms. Examples of these include search engines such as Wikipedia, Google and Yahoo!, translation sites such as Google translator, Duolingo, Multidict, online dictionaries and ready-made online assignment sites. Therefore, the main issue is to instill in teachers the ability to choose technological tools that suit the needs of students without creating additional workload for them.

The most important element of learning is the need of students (to learn), because learning as a type of activity owes its existence to this need. For this reason, first of all, the needs of learners should be carefully analyzed and then the computer should be used to serve these needs. If a "Needs Audit" has been carried out before the introduction of new technology, then learning will definitely come ahead of technology during lesson planning. In such a situation, the computer will not be the central element of any lesson, but will simply present in all lessons as an ordinary tool, integrated into all areas of classroom life in parallel with textbooks, teachers and notebooks, that is, it will not attract special attention (Zarfsaz, 2023).

Salaberry noted that while research design and empirical analysis are important, perhaps the most important challenge facing technology-assisted language learning is to determine the pedagogical purpose that technology-based learning will serve. Each of the above resources can be useful for different pedagogical purposes and can serve different learning goals. The integration of computer and Internet technologies into human communication has given rise to the concept of Computer-Mediated Communication (CMC). Wikipedia defines CMC as any communication process that occurs using two or more computers connected to the same network (e.g., instant messaging, email, chat rooms), and includes text-based communication (messaging). Dr. John December explains the essence of CMC as follows, "CMC is the process of creating, exchanging, and receiving information using networked telecommunications and systems (or computers not connected to the network) that facilitate the encoding, transmission, and decoding of messages". In general, CMC is a process in which people communicate with each other, exchange ideas, and obtain information on cultural, scientific, historical, and social fields through e-mails, blogs, Wiki sites, chat rooms, and audio and video conferences. According to the research of Liu, Moore, Graham, and Lee there are three models of CMC: interpretive, interpersonal, and presentational. The interpretive communication model involves students' one-way reading, listening, and watching activities, as well as the process of answering informational and interpretive questions aimed at assessing their level of understanding. Teachers and communication facilitators provide feedback on students' activities (Blake 2021). That is, the creator of the communication is not physically present among the students and the students do not have the opportunity to discuss with each other. The interpersonal communication model of CMC involves a two-way (face-to-face) oral and written communication process. At this time, students discuss, clarify misunderstandings among themselves, and this process often occurs spontaneously. The presentation model of CMC is a formal and one-way communication process in which the speaker conveys his research, ideas, and opinions to a specific audience of listeners and readers. Such a model of communication usually allows speakers to prepare and practice in advance. Based on the above models of CMC, many experts believe that CMC is a tool used to build telecommunication partnerships and promote the social aspects of foreign language learning.

The advantages of CMC in language learning are that teachers can ensure equal and more active participation of students in the lesson compared to the traditional classroom environment. CMC promotes positive relationships, forms a wider and more comfortable communication environment, increases student empowerment, and, on the contrary, reduces teacher control and authority. Studies show that CMC strengthens students' motivation to learn a foreign language, reduces their anxiety in this process, increases speech fluency in the target language, and democratizes classroom communication. CMC has synchronous and asynchronous forms. Synchronous communication, an effective tool for improving speech and communication, also develops grammar knowledge and discussion skills. Examples of synchronous communication include online chats (Whatsapp, Telegram), audio and video conferencing (Skype, Zoom, Microsoft Teams). Students and teachers use synchronous communication to communicate in a written interpersonal model. They communicate in an environment similar to face-to-face live communication, and interactive tasks are performed. Synchronous communication represents a new type of interaction that can be beneficial for students, as it is slightly different from regular writing and speaking (Nuri 2025). Although students communicate in the same way as in face-to-face oral communication, the written mode of synchronous CMC forces them to think about the form and content of messages. This is the most beneficial aspect of synchronous CMC, because learners feel that they are talking to another person face to face, and each interlocutor tries to adapt his speech to the speech of the other party in order to be understandable, takes into account his language skills in order to convey more clearly and completely information, or, on the contrary, reveals in which areas of knowledge and skills he is weak from the answer he receives from the other party and focuses on eliminating those problems. Examples of asynchronous forms of CMC include emails, social networks, commenting websites, online forums, frequently updated websites with hyperlinks, etc.

In this type of communication, the moment the sender (writer) sends a message and the moment the reader receives the message are different, for example, a message is posted to an

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online forum on a certain date, and a forum participant writes a comment on that message on another date. Many studies have been conducted to determine the impact of synchronous and asynchronous CMC modes on various aspects of language learning. These studies have examined the impact of each of the synchronous and asynchronous communication forms on language learning separately, and have also compared which of these forms of communication is more effective in language learning (Warschauer, 2001) Experts who have studied the impact of synchronous CMC on language teaching have concluded that synchronous communication has a positive effect on increasing grammatical knowledge, forming correct pronunciation and articulate speech, developing oral speech as well as written speech, and creating a comfortable communication environment for shy and low-achieving students (Kashef 2023). A number of researchers who have studied the ways in which asynchronous CMC can support language learning from several aspects have concluded that the application of asynchronous CMC to language teaching has resulted in significant progress in terms of maintaining grammatical accuracy, selecting appropriate lexical units, using correct punctuation marks, and following spelling rules.

When it comes to significance of well-equipped classrooms, certainly it matters a lot for better outcomes according to the researches. Drawing on data from 156,634 students across 27 European Union countries collected in 2011, the survey indicated that approximately 95% of schools were equipped with laptops, corresponding to an average ratio of one computer per 3–7 students in classrooms. Interactive whiteboards were present in nearly one-third of EU classrooms. The availability of technologically advanced learning environments was associated with increased student motivation, enhanced organizational skills, and a stronger sense of learner responsibility. In addition, these environments supported both individual and collaborative learning more effectively than in earlier years, particularly compared to 2007, when the availability of modern digital tools was approximately half of the 2011 level.

Across all educational levels, more than 70% of participating educators—including 24,522 teachers and 10,137 school leaders—reported that ICT plays a significant and positive role in facilitating a wide range of learning approaches, such as collaborative activities, self-directed learning, and skills-based practice. Respondents further emphasized that the use of ICT supports the attainment of key educational objectives, including enhancing student motivation, reinforcing transversal competencies, and fostering higher-order cognitive skills.

Another report from the State Statistics Committee of Azerbaijan (2025) indicates that general education institutions possess a total of 136,000 computers, including 97,400 in urban schools and 38,600 in rural schools. This equates to roughly one computer for every 12 students, which can constrain some in-class language activities. On the positive side, the majority of schools are equipped with internet connectivity and electronic whiteboards.

Experts who have conducted a comparative analysis of the impact of these two communication modes on language learning believe that both communication modes can produce effective results when the goal is chosen appropriately and applied correctly. The two modes differ only in the time at which communication takes place, which makes the use of the asynchronous form relatively more efficient, since the student does not experience any time pressure when responding to an e-mail sent, can benefit from many additional resources via the computer and demonstrate language skills more beautifully.

The statistical evidence presented in this study highlights that the incorporation of modern technological tools is crucial for the effective implementation of foreign language teaching in today's classrooms. Data from schools in Azerbaijan and European Union countries indicate that students who consistently engage with digital resources—such as audio-visual materials, online platforms, and interactive applications—tend to demonstrate higher levels of motivation and participation.

Results and Discussion

In conclusion, the integration of modern ICT into language learning through CALL and CMC offers significant pedagogical benefits, including enhanced speaking, listening, reading, and writing skills, increased learner motivation, and more democratic classroom interactions. However, the effectiveness of technology depends on its appropriate and purposeful use. Computers should be normalized as routine classroom tools, tailored to students' needs, rather than being the central focus of lessons.

Both synchronous and asynchronous forms of CMC contribute uniquely to language development. Synchronous communication supports real-time interaction, oral fluency, and discussion skills, while asynchronous communication allows for reflective responses, grammatical accuracy, and careful language use. For optimal results, teachers must carefully select technological tools, align them with pedagogical goals, and consider learners' needs and abilities. Ultimately, CALL and CMC should serve as facilitators of learning, enhancing the educational experience without overshadowing the core objectives of language instruction. When implemented thoughtfully, technology can transform the learning environment, making it more interactive, engaging, and effective for all learners.

The data suggest that classrooms which successfully integrate technological resources are more capable of fostering learner-centered, communicative approaches, thereby making language learning more engaging and meaningful. Consequently, the use of modern digital tools should be regarded not as optional, but as a fundamental element of effective foreign language instruction based on communication in this century.

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