

# Value Role of ICT Tools in English Language Teaching and Learning- Emphasis on Covid-19 Pandemic

Madhavi E<sup>1,2</sup>, Lavanya Sivapuapu<sup>1</sup> & Poul Kati<sup>3</sup>

<sup>1</sup> Department of English, Koneru Lakshmaiah Education Foundation, Guntur, AP, India

<sup>2</sup> Department of English, CMR College of Engineering & Technology, Hyderabad, Telangana, India

<sup>3</sup> Department of English, Institute of Aeronautical Engineering, Hyderabad, Telangana, India

Correspondence: Lavanya Sivapuapu, Department of English, Koneru Lakshmaiah Education Foundation, Guntur, AP, India.

Madhavi E, CMR College of Engineering & Technology, Hyderabad, Telangana, India.

Received: November 2, 2022

Accepted: January 24, 2023

Online Published: February 22, 2023

doi:10.5430/wjel.v13n2.p324

URL: <https://doi.org/10.5430/wjel.v13n2p324>

## Abstract

Communicative knowledge and digital knowledge have become essential components of our everyday lives. English language is one of the major global means of communication. Information and communication technology (ICT) plays an important role in many areas of life, including education. The contemporary immense waves of globalization and the increased dominance of the English language over the political, cultural, and economic levels necessitate our effective preparation for the young generation to acquire the abilities and skills that help them meet the needs of their future careers. The ability to speak English effectively and to handle various ICT Tools purposefully has become an essential need for the young generation to cope with the current information revolution. The aim of this study is to evaluate the function of ICT technologies, in English language instruction and acquisition with a focus on the COVID-19 pandemic. This study focuses on ICT resources including systems, Internet, mobile apps, websites, language learning centers, and YouTube, how ICT tools were used during the COVID-19 pandemic and how they helped teachers and students in the classroom. The study concludes that each instrument described plays an important role in English educational activities, as well as in increasing the learner's skills, helps learners work at their own pace and gives learners more control over their own learning, and facilities collaborative and cooperative learning.

**Keywords:** ICT Tools, ELT, Covid-19, language learning, language teaching

## 1. Introduction

One of the universal languages widely spoken around the globe is English. It is used for communication and as a medium of instruction globally. In a globalized world, the field of language acquisition is continuously expanding. Thus, the use of e-learning resources in the study of languages is inevitable. Because conventional language teaching techniques cannot accommodate the new technology, thus they must be revised to fit the evolving needs of both teachers and students. (Istifci, Lomidazde & Demiray, 2011). Integrating ICT into teaching and learning methodologies is a critical step toward improving teaching and learning tactics (Bingimlas, 2009). The world is undergoing a technological revolution in various aspects of human life. Almost everyone is now acquainted with the use of technological equipment such as computers, laptops, and mobile phones. Technology is employed for a variety of purposes in our daily lives, one of which is education (Fu, 2013). In the twenty-first century, ICT is utilized in education and most governments have made ICT a part of their educational curricula.

Several prior research studies have demonstrated that effective ICT use can improve educational quality and help link classroom instruction to real-world contexts (Lowther, et al., 2008). ICT takes into consideration modern strategies that aid in the development of higher cognitive abilities. ICT tools are crucial for use in every classroom as they contribute to the improving educational quality for both teachers and students. ICT usage favorably influences education and learning. ICT tools assist teachers to make presentations to their classes using contemporary techniques and professors to improve and motivate students to learn more effectively. Furthermore, these technologies assist students in enhancing their knowledge and skills. English language instruction using ICT technology introduced a new approach to English language teaching techniques. ICT has increased opportunities for learners to communicate with each other. The use of ICT facilitates the flow of information exchange from the home to the workplace. Over the past two decades, there has been a rapid expansion in utilizing ICT resources. Most of the students during the COVID-19 disaster appreciated the actual usefulness of ICT resources. ICT tools played an essential role in education during the COVID-19 pandemic. Teachers began to use for online instruction and learning. ICT technology utilization is critical for increasing the quantity and quality of instruction and learning in conventional and virtual learning. In this paper, we discuss various ICT tools used for teaching the English language during COVID-19 pandemic.

## 2. Information Communication and Technology

Information communication technology refers to technological platforms used to collect, save, access, distribute, and transfer information using electronic means. There are many different ICT tools, some of which are technologies while others are accessories and support for a single technology. There are various technological gadgets and services available, including a laptop, computers, cell phones, tablets, television, etc, whereas emails, blogs, and video conferencing are regarded to be resources and services related to learning. The most often used tools and technologies are depicted in Figure 1 (<https://www.javatpoint.com/ict-tools>) in this study. The teaching of English language has used many of the aforementioned tools.

## 3. ICT Use in Education and English Language Learning and Teaching

According to the (2005 NMC Horizon Report), the following technical domains have the potential to contribute to the field of education. Firstly, Extended learning which involves improving conventional instruction and learning using contemporary communication tools or social networking sites like Twitter, Facebook, wikis, instant messaging and blogs. The method of instruction and acquiring knowledge is no longer limited to the classroom but it has been extended beyond the classroom through social media platforms, that allow students to communicate with one another which “facilitates collaborative discussion, exchange of opinions, and critical thinking” (Huang, Hung, & Cheng, 2012). Secondly, Ubiquitous Wireless which focuses on “the increasing penetration of wireless networks” (Jung, 2006), enables students to use mobile or portable devices, such as tablets, laptops, mobile phones, and other similar devices. Thirdly, Intelligent Searching, helps the educator to effectively find, arrange, and retrieve information. Finally, Educational Gaming, which includes simulations and games and is seen as a knowledge-acquiring tool with positive impacts on critical thinking, motivation, problem-solving skills, and communication. (Jung, 2006). (Collis & Moonen, 2001) classified ICT applications into three categories: “learning resources,” which include educational software, online resources, and video resources, “instructional organization of learning,” which includes software and technology tools for lecturing in the classroom, and the “Learning course management system” such as Moodle, Canvas, Computer-based testing systems, such as Hot Potatoes, and communication, which includes email systems and websites that provide communication possibilities.

One goal of language teaching or learning is to foster comprehension competence in students, i.e., the capacity to comprehend the full meaning of words in a particular context. The knowledge of generalized context is the main challenge in ELT. Languages do not exactly adhere to logical frameworks, making the mechanical and petty ELT techniques as well as literal translations of words and meanings useless. The primary goal of an English language teacher is to provide students with a broad context. The four essential abilities of listening, speaking, reading, and writing (LSRW) can be mastered more quickly by leveraging ICT tools to create more effective learning aids (R Bhushan, 2020) and (A.Dash & KKuddus 2020).



Figure 1. ICT Tools

## 4. Useful Tools in Developing / Improving LSRW Skills with the Help of ICT

As previously stated, we are experiencing a genuine technological revolution. Teachers and students routinely benefit academically from the use of technology in language learning. Using ICT resources in the classroom encourages students to complete tasks that they might otherwise avoid. Students in an ICT-enabled language learning class will willingly complete their activities by using a computer software platform since it will make monotonous activities more interesting and may contain content in multimedia formats. The usage of multimedia in English learning can create a long-lasting impression on students. The teacher's function will be that of a coordinator as opposed to that of an instructor. ICT tools promote a self-paced independent learning style aided by ICT-enabled English language training. The tools shown in Figure 2 (<https://palomacli.files.wordpress.com>) are the most common and important tools used in English language education, and they play an important role in helping learners improve their language skills.

4.1 The Use of Computer-Assisted Language Learning (CALL)

The word CALL was first used in the 1960s but was thoroughly re-examined in the 1990s. The constant advancements in deep learning and its applications made computer-assisted language learning more prominent than ever. The computer has evolved into one of the most important tools in modern human life and is seen as an essential instrument for ICT. The computer is also utilized to facilitate most modern communication processes. The fundamental assumption is that computers can provide learners with a language learning environment in the absence of teachers. The computer can prepare, store, gather, and prepare data for communication. Nowadays, the ability to use a computer and command of the English language is one of the most important skills to acquire.

Students can employ computerized instructional techniques such as multimedia CD ROM. Many CD-ROM packages can provide a comprehensive language lesson. CD-ROM packages enable students to listen to talks or dialogues while also viewing video footage. They enable pupils with sloppy handwriting or weak spelling skills to create numerous drafts and a final piece of writing. Students can access various useful websites on the internet and receive direct education and practice in language skills such as writing, listening, and reading. Web pages, presentation slide generators, databases, and spreadsheets are examples of computer facilities that have contributed to the success of computers in language instruction and in the language classroom. Furthermore, all of these facilities play a vital role in the up-grading trainee's language skills.



Figure 2. ICT Tools in Developing / Improving LSRW skills

4.2 The Use of Web 2.0 in Education

Rather than immersion in an English-speaking environment, the Internet provides an alternative means to learn English. Nowadays, pupils relate better to websites than to written material. Students commonly use the Internet and websites to share information, ideas and engage with one another as shown in Figure 3 (<https://www.linkedin.com/pulse/mindful-approach-social-media-pandit-dasa/>). The fast expansion of the Internet and the crucial role of websites enable and encourage students and teachers to use them in the classroom as well as in their personal lives to conservation of time and energy. Some researchers argue that utilizing leading-edge tools can boost pupils' inventiveness and reasoning. For instance, (Livingstone, 2012) discusses improving performance using technology as shown by the Program for International Student Assessment survey analysis (PISA). She discovered that students who utilized cyberspace at school regularly outperformed other students who did not. Concurrently it also assisted the trainees to obtain adequate and efficacious knowledge from the computerized settings. It instigated pupils' confidence to get accomplished in all aspects required for career building. While using the web, students are not required to leave their homes or travel to attend classes. Students have the freedom to study English whenever and wherever they wish. The Internet assists both teachers and students in their search for legitimate English material, as well as courses, publications, and conferences. Students can email their homework to the teacher, and the teacher can conduct an online assessment. Online electronic whiteboards, worksheets, and notes, as well as webcam versions online, allow students to catch up on missed classes. Nowadays, it is possible to connect the school via a network and collaborate on projects. Every educational institution has a website where they post their study resources.

The website tool is as a vital online technology that can be used in the classroom to facilitate English teaching and learning. The numerous websites in existence give all teachers and students access to a wealth of material on a variety of other disciplines and is not confined to only English. The teacher can submit materials to his or her website and allow students to download them before the start of the lesson. The English teaching websites contain a variety of articles, such as text for reading (literature, novels, and plays) or writing work samples (emails, memorandums, essays, and letters). English language teaching and learning websites aid new teachers and learners in accumulating material relating to their subjects of interest.

Vocabulary and grammatical exercises, texts for reading and gap filling, color illustrations, dialogue ideas, English lesson plans, printable English worksheets, and class management instructions are among the things available for download from the mentioned website in Figure 1. We can also obtain data for any instruction from several sources using the Internet. Students can improve their speaking skills by

using Skype, MSM Messenger, Google Talk (used for online conferences), and other applications that allow them to connect with friends, other students, teachers, and even native speakers. These methods of learning have been shown to improve students' oral proficiency and compensate for the raise of Interaction levels and intercultural awareness as well as the motivation of the students. (Fu, 2013), for example, exclaims that the available online materials for the development of reading skills are widely used for reading practices. He states that trainees can comfortably utilize all varieties of e-resources irrespective of levels and standards by using Networking tools and digital tools. These e-learning materials may often have reading tasks and pre-reading tasks that are associated with vocabulary enhancement tools.



Figure 3. Internet and websites

#### 4.3 Mobile App for English Learning

The mobile phone has evolved into one of the most important technical instruments in our daily lives. It is best described as a little computer. It is utilized not only for making phone calls and sending text messages, but it has also been employed in teaching. Language learners can download many applications to assist them with various goals such as translation, writing, spoken language, grammar, and others (Pegrum, 2014). Applications are available for download from the Google Play and Apple App Stores. The applications (apps) offer students tests, podcasts, dictionaries, games, quizzes, and other resources. The aforementioned apps can mimic a personal English language teacher who is available 24 /7. As there are various types of applications language learners can download any application they require, such as dictionary applications, vocabulary apps, writing apps, and so on. Learners can then use dictionaries to find new terms to add to their vocabulary (Yip & Kwan, 2006). Developing the breadth and depth of one's vocabulary requires creating a connection between the terms used and created sites of understanding (Boulware-Gooden, Carreker, Thornhill, & Joshi, 2007). Concept maps and visual displays emphasize word associations (Baumann & Kame'enui, 2004). Wordle and WordSift are important word-mapping tools that project discernible images. Wordle is an open presentation software that runs a word cloud centered upon the constancy of phrases given in the subject matter. As students examine, develop, and publish Wordles, it can be utilized to encourage their thinking about the meaning, importance, and relationship of words.

For example, in Figure 4(<https://www.readingrockets.org/article/10-ways-use-technology-build-vocabulary>), (Dalton & Grisham, 2011) constructed a word cloud based on an online National Geographic Kids story about the alarming decline of honeybees in North America. The following are some possible questions concerning this Wordle:

- What does the word cloud imply about the topic of this article?
- Which terms appear to be the most important?
- What is the relationship between these words?

Why did the author choose this model for representing this activity?

Students would then understand that this extract is about Bees. However, some trainees may regard these words as less evident—dangerous and pernicious—and decipher that these Bees are sick. When asked about the color choice- the trainees guessed that the author chose a flashy color to attract the trainee's interest or that black is related to the word pernicious. What we gain from this type of Pre-reading activity is that trainees are engaged in and decipher the words and connect them to the activity that they are engaged in. Trainees diligently took part in the activity by drawing on their existing knowledge of terms and thoughts, as well as on their visual literacy skills.

After reading the article, the same bees word cloud could spark a debate prompted by questions such as,

- Do you believe that the word cloud represents the most significant information useful to trainees?
- Does it contain any content words or thoughts that have been omitted?

- Which superordinate phrases best represent the primary ideas?

Students would integrate verbal and visual representations as they adjusted the layout, color, and font of the word cloud, boosting the multimedia learning effect (Fadel & Lemke, 2008) and obtained a crucial digital literacy skill in our visual age. Some trainees were lured by the creative design component into meaning creation; while others were enticed by the words themselves to examine meanings and relationships. Although Wordles can be published and printed, you can also use a screen capture application to save the Wordle as a photograph, and create a photo bank on your desktop or school computer. WordSift is one more free word cloud tool found on networking sites. A word cloud, like Wordle, is created by pasting text into the application. Even though Word Sift does not provide a colorful site to attract pupils, it plays an effective role in enhancing trainees' knowledge and gearing up language skills. Any word can be verified to see a set of related images, a word map, and a list of phrases from the text that precedes it.

WordSift also categorizes words based on their complexity and detects academic terms. It is worth noting that both Wordle and WordSift handle many languages, which is very useful for ELs (Adesope, Lavin, Thompson, & Ungerleider, 2010).

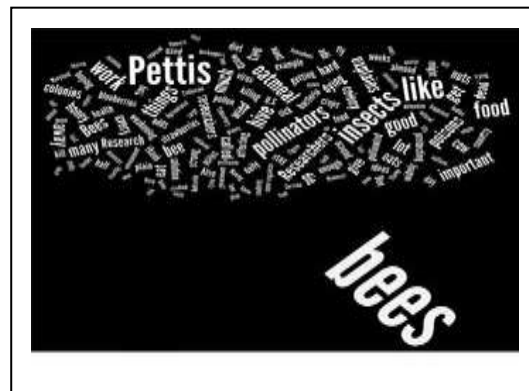


Figure 4. Word Cloud for Bees using Wordle

#### 4.4 YouTube for English Teaching and Learning

YouTube is an online video-sharing platform that allows users to watch videos made by other users and to create their own videos. YouTube videos have been used in English language classrooms for a variety of purposes, for instance to improve pronunciation, accent, vocabulary, listening, and so on. One of the great benefits of using YouTube in English language instruction is that it provides actual examples of people using everyday English. Teachers can broadcast their lectures to their YouTube channels for their students to view. There are numerous English language instructional channels available, such as learn American English, EF pod English, VOA Learns English, BBC Learns English, Easy English, Jennifer ESL, English class 101.com, On the GO with EF, Speak English with Mr. Duncan, and many more.

The English language learner can search for and find any topic related to any subject on YouTube. We can also practice listening to different accents. We can watch movies and write a review or summary of the movie and listen to songs we like with subtitles and learn their lyrics thus the learner can improve all four language skills. The teacher can show a film to his or her students that is related to a play, tale, or novel, which would undoubtedly aid in their comprehension. Finally, learners can prepare a brief review of the movie they saw and show it to their teacher and ask for feedback - and then keep practicing so as to get improve their skills. (Levy, 2009) discusses the use of technology to improve second-language writing skills, such as automatic grammatical error detection, spell check, and other auto-corrections when writing in a second language. When students are writing, word processing software prompts them to make edits. As a result, when students write blogs, emails, and journals or provide feedback on each other's work, they improve their grammar and writing skills (Miyazoe & Anderson, 2010). Some researchers argue that using ICTs can boost pupils' creativity and critical thinking. (Livingstone, 2012) discovered that students who used networking and digital tools at school regularly performed better than those who didn't utilize digital tools. Concurrently, ICT helps trainees or educators in acquiring knowledge from online sites and resources required to excel and succeed in career planning, decision-making, and problem-solving skills that help them perform better in their studies.

#### 5. Learning Content Management Systems

The authoring tools assist in creating digital content for learning and development. A teacher can utilize this learning management software to produce new content from external sources, manage and update e-Learning content, plan course schedules and discover learning strategies, effectively administer students, and facilitate communication via e-mail, chatting, and forums. Varsite is a Learning Content Management System (LCMS), according to (Dreyer & Nel, 2003). "An LCMS is a multi-user environment where lecturers can develop, store, reuse, manage, and disseminate digital learning content from a central object repository." The same authors state that a technologically well-developed setting augments the effect of improved reading methods and comprehension. Students can meet and discuss the work they complete as a batch. In addition, several non-book materials like tape slide that websites offer showcase interview and negotiating abilities. The teacher guides the students' tasks and activities, but students can also participate. The research findings

demonstrated that a digitally well-developed atmosphere, such as Varsite, aids in the progress of trainees' comprehensive skills and reading strategies. Utilizing the Talking Books strategy and scientific knowledge applications like varsite may help in enhancing trainees' language acquisition and vocabulary skills.

## 6. Utilization of Digital Tools During the COVID-19 Pandemic

Most countries have been fighting an invisible enemy known as COVID-19. COVID-19, a serious illness that endangers human life, rapidly spread across several countries. Most countries went into lockdown due to the hazards it posed to human life and to limit its rapid spread. Most governments closed malls, markets, and educational institutions. Subsequently, the world began to make use of technology, not only in the teaching of the English language but also in a variety of other areas. During the COVID-19 pandemic, several ICT tools including software, websites, YouTube channels, webinars were all deployed. These tools allowed professors to upload teaching materials to their university or school websites and Google Classroom. Some professors prefer to teach online using various programs such as Zoom, Google Meet, We Meet, and so on. Some teachers recorded videos and published them on YouTube or other websites for students to access information related to their subjects of interest. YouTube and educational sites were very popular among students during the pandemic.

By using videos, we can converse and listen more effectively. They provide great resources for speaking exercises after discussions. Students used digital videos and collaborated to provide answers to questions and to discuss listening techniques. They also utilized the video camera to record their own videos, which they could review to help them to perform better. They also recorded roleplays and presentations, which have the potential to help them learn a language by improving their comprehension of spoken language. Teachers used Blogs, and social networks to share information and make students gain knowledge and improve their reading and writing skills (Vurdien, 2013). We made students play word-building games and vocabulary improvement games in virtual classes.

Students can readily access recorded videos on the Learning management software of the institute or on YouTube, essays, articles, pdf files, and so on to complete their assignments and then send them by email or another method for assessment. We could say that the COVID-19 pandemic illustrated critical need to utilize ICT technologies in education and demonstrated the critical function of internet education. Furthermore, ICT tools were important in conducting online examinations during the COVID-19 pandemic since most schools and universities employed ICT to conduct online tests.

## 7. Conclusion

Technology has been used in every aspect of human life and is regarded as a necessary tool in our daily lives. ICT tools play an important role in instruction, particularly in English language impartation and acquisition. It aids the teacher in inspiring children to acquire a second language. ICT tools enhance students' abilities such as listening, speaking, writing, and reading, and play an active role in expanding vocabulary and improving pronunciation. The COVID-19 pandemic has demonstrated the true value of ICT technologies in online education. During the pandemic, teachers and students made extensive use of the aforementioned methods in the teaching and learning processes. It enables students to make the most of their time by learning and obtaining skills because they need to master technological tools making them compatible with virtual education.

ICT fosters interaction between teachers and students, offers easily understandable input and output, aids in the development of critical thinking skills in students and more student-centric learning, encourages students' autonomy and builds their self-confidence, and boosts their motivation. Additionally, the interactive multimedia tools give learners more opportunities to practice pronunciation in an environment free from embarrassment and fear of making mistakes.

## References

- Adesope, O. O., Lavin, T., Thompson, T., & Ungerleider, C. (2010). A systematic review and meta-analysis of the cognitive correlates of bilingualism. *Review of educational research*, 80(2), 207-245. <https://doi.org/10.3102/0034654310368803>
- Baumann, J. F., & Kame'enui, E. J. (Eds.). (2004). *Vocabulary instruction: Research to practice*. New York: Guilford.
- Bhushan, R. (2020). *ICT and ELT: The Pedagogical Perspective*. In *Smart Intelligent Computing and Applications* (pp. 203-213). Springer, Singapore. [https://doi.org/10.1007/978-981-32-9690-9\\_20](https://doi.org/10.1007/978-981-32-9690-9_20)
- Bingimlas, K. A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of the literature. *Eurasia Journal of Mathematics, science and technology education*, 5(3), 235-245. <https://doi.org/10.12973/ejmste/75275>
- Boulware-Gooden, R., Carreker, S., Thornhill, A., & Joshi, R. M. (2007). Instruction of metacognitive strategies enhances reading comprehension and vocabulary achievement of third-grade students. *The reading teacher*, 61(1), 70-77. <https://doi.org/10.1598/RT.61.1.7>
- Collis, B., & Moonen, J. (2002). Flexible learning in a digital world. *Open Learning: The Journal of Open, Distance and e-Learning*, 17(3), 217-230. <https://doi.org/10.1080/0268051022000048228>
- Dalton, B., & Grisham, D. L. (2011). eVoc strategies: 10 ways to use technology to build vocabulary. *The reading teacher*, 64(5), 306-317. <https://doi.org/10.1598/RT.64.5.1>
- Dash, A., & Kuddus, K. (2020). Leveraging the benefits of ICT usage in teaching of English language and literature. In *Smart intelligent computing and applications* (pp. 225-232). Springer, Singapore. [https://doi.org/10.1007/978-981-32-9690-9\\_22](https://doi.org/10.1007/978-981-32-9690-9_22)

- Dreyer, C., & Nel, C. (2003). Teaching reading strategies and reading comprehension within a technology-enhanced learning environment. *System*, 31(3), 349-365. [https://doi.org/10.1016/S0346-251X\(03\)00047-2](https://doi.org/10.1016/S0346-251X(03)00047-2)
- Fadel, C., & Lemke, C. (2008). *Multimodal learning through media: What the research says*. San Jose, CA: CISCO Systems.
- Fu, J. S. (2013). C. Technology, "ICT in Education: A Critical Literature Review and Its Implications Jo Shan Fu,". *Int. J. Educ. Dev. Using Inf. Commun. Technol.*, 9(1), 112-125.
- Huang, K. H., Hung, K. C., & Cheng, C. C. (2012). Enhancing interactivity in geography class: Fostering critical thinking skills through technology. *Problems of Education in the 21st Century*, 50, 32. <https://doi.org/10.33225/pec/12.50.32>
- Istifici, I., Lomidazde, T., & Demiray, U. (2011, October). An effective role of e-learning technology for English language teaching by using meta communication actors. In *2011 5th International Conference on Application of Information and Communication Technologies (AICT)* (pp. 1-5). IEEE. <https://doi.org/10.1109/ICAICT.2011.6110951>
- Jung, S. H. (2006). *The use of ICT in learning English as an international language*. University of Maryland, College Park.
- Levy, M. (2009). Technologies in use for second language learning. *The modern language journal*, 93, 769-782. <https://doi.org/10.1111/j.1540-4781.2009.00972.x>
- Livingstone, S. (2012). Critical reflections on the benefits of ICT in education. *Oxford review of education*, 38(1), 9-24. <https://doi.org/10.1080/03054985.2011.577938>
- Lowther, D. L., Inan, F. A., Daniel Strahl, J., & Ross, S. M. (2008). Does technology integration "work" when key barriers are removed? *Educational Media International*, 45(3), 195-213. <https://doi.org/10.1080/09523980802284317>
- Miyazoe, T., & Anderson, T. (2010). Learning outcomes and students' perceptions of online writing: Simultaneous implementation of a forum, blog, and wiki in an EFL blended learning setting. *System*, 38(2), 185-199. <https://doi.org/10.1016/j.system.2010.03.006>
- New Media Consortium and National Learning Infrastructure Initiative (2005). *The Horizon Report 2005 Edition*. Austin, Texas: The New Media Consortium.
- Pegrum, M. (2014). *Mobile learning: Languages, literacies and cultures*. Springer. <https://doi.org/10.1057/9781137309815>
- Vurdien, R. (2013). Enhancing writing skills through blogging in an advanced English as a Foreign Language class in Spain. *Computer assisted Language learning*, 26(2), 126-143. <https://doi.org/10.1080/09588221.2011.639784>
- Yip, F. W., & Kwan, A. C. (2006). Online vocabulary games as a tool for teaching and learning English vocabulary. *Educational media international*, 43(3), 233-249. <https://doi.org/10.1080/09523980600641445>

### Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).