

# The use of web 3.0 tools for reading skill development: case blogs in virtual education

1<sup>st</sup> Mayorie Chimbo-Cáceres  
Facultad de Ciencias Humanas y de la  
Educación  
Universidad Técnica de Ambato  
Ambato, Ecuador  
<https://orcid.org/0000-0001-8303-2988>

2<sup>nd</sup> Estefanía Barragán-Mejía  
Facultad de Ciencias Humanas y de la  
Educación  
Universidad Técnica de Ambato  
Ambato, Ecuador  
<https://orcid.org/0000-0002-7386-1835>

3<sup>rd</sup> Mauricio Sánchez-Galindo  
Facultad de Ciencias Humanas y de la  
Educación  
Universidad Técnica de Ambato  
Ambato, Ecuador  
<https://orcid.org/0000-0001-6046-2045>

4<sup>th</sup> Ruth Infante-Paredes  
Facultad de Ciencias Humanas y de la  
Educación  
Universidad Técnica de Ambato  
Ambato, Ecuador  
<https://orcid.org/0000-0002-5035-761X>

**Abstract**— The COVID-19 pandemic has brought drastic changes in the teaching and learning of EFL, not least through the increased use of ICT and web 3.0 technologies. As part of this phenomenon, blogs have become a widely used technique for assisting foreign language acquisition. The aim of this study was to test the hypothesis that the use of blogs has a significant impact on the development of reading skills in English learners. The study was based on 106 participants (57 male and 49 female) from a private secondary school in the central highland region of Ecuador, with an age-range from 12 to 19 years. A nonparametric-experimental design was applied to the whole sample, who were pre-tested, given reading development instruction, and then post-tested. The pre-test and post-test were adapted from the Cambridge Preliminary English Test (PET) and consisted of 5 multiple choice comprehension questions, 5 scanning questions and 6 fill in the gap questions. In the instructional phase, the participants engaged in 6 sessions of asynchronous and 6 sessions of synchronous study, in which a variety of digital resources such as Kahoot, Nearpod, Educaplay, Liveworksheets, Padlet, Quizzis, British Council, Quizzlet and others, were employed to contribute to students' communicative competence. Data tendencies and normality were measured through the Kolmogorov-Smirnov test, which was 0.000; while Wilcoxon was used to corroborate the hypothesis. The results showed a significant improvement of 66.9% in the students' reading skills through the use of web 3.0 blogs. Findings of the research show that the integration of web 3.0 technologies, specifically blogs foster learners' oral and written interaction, being reading the keystone of the whole process.

**Keywords**—ICT, Web 3.0, blogs, EFL learning, reading skills.

## I. INTRODUCTION

Information and Communication Technologies better known as ICTs refer to digital tools that are helpful to create, design, share, and display information throughout electronic devices for different purposes. In the educational field, these tools play an important role by letting teachers and students use them in the teaching and learning process. In fact, they give students opportunities to optimize their learning. Meanwhile, teachers benefit with the vast number of virtual resources available on the web.

Thus, the application of ICT tools has allowed students to acquire English language competences as well as integrate

languages communicative skills by interactive lessons promoting English language teaching and distance learning. Additionally, web-based learning is one of the areas which relate to ICT tools, giving opportunities to create e-learning environments and offering a variety of resources to improve language skills in several ways. For instance: YouTube, twitter, e-mails, blogs, skype and mobile phones are digital platforms and application of ICTs which allow learners to succeed in this process effectively. The constant participation and communication that the academic community gets, thanks to the virtual environments; encourage people to continue learning and master in foreign language competences. As a result, over the 21st century, 1.7 billion people are English language learners around the world with an average of more than 3,000 English teachers working full-time on this goal [1]

In order to have a good communication when learning a language, people have to be able to manage the four communication or language skills which are related among each other. Those language skills are divided into receptive and productive skills; receptive skills involve reading and listening, and productive skills involve speaking and writing. Although this division, communicative competence is the emphasis in today's education, where listening and speaking; and reading and writing are interconnected [2].

Over the last few years, technology has been expanding its domains through all the existing fields, and education is not the exception. Day by day, the use of technology in the educational field has helped educators and learners either to teach or learn without time or place limitations. In English language teaching, this crucial advantage allows students of this foreign language to keep learning, developing, and mastering not only their productive skills, but also their receptive ones. Acknowledging this fact, technology has been a vital ally in these uncertain times where world-wide learners have made use it for reading several documents based on their preferences.

## II. STATE OF THE ART

### A. ICT

According to [3], the use of ICT's involves peripheral devices and delivery computerized systems with the purpose of promoting interaction in virtual environments. Nowadays, due to the current COVID-19 pandemic situation, ICT tools are essential either for face-to-face education or virtual learning; improving the quality of language acquisition and enhancement. The alumni who have been unable to attend classes physically because of the expansion of the virus, have made use of technology to get involved in their learning. Despite the geographical positioning, and the perpetual expansion of the pandemic, those boundaries have been broken down by the intense desire of keeping learning.

### B. Web 3.0 in educational matters

Web 3.0 refers to the evolution of technological gadgets, and tools which integrates the ability to seek information and improve the cognitive research skills of learners by immediately providing access and reducing time. The teaching and learning process engages students with free and unlimited access to the internet by saving learners' time. Moreover, it supports and increases the opportunities to integrate a variety of digital resources, content, and knowledge to teachers and learners [4]. Consequently, the digital barriers are abolished leading to an interactive experience while surfing the web for relevant matters with the use of electronic devices. The endless advantages of web 3.0 regarding language learning optimize information gathering, academic guidance, and interactive learning environments. According to [5], web 3.0 tools have some features, like smart and virtual environments, which motivate learners to have access to information, share it with others, and check their own progress. In this sense, [6] indicates that there is a vast number of technological tools of free access software such as: Canva, Padlet, Quizzis, Quizlet, Kahoot, and Jamboard which can be used for teaching, evaluating, and fostering comfortable online activities that students might find enjoyable. Their application can increase learning intuitiveness; quality business process; and the development of self-learning, problem-solving, information seeking and analysis, critical thinking skills, as well as the ability to express their ideas, interact with others, and collaborate with peers and educators, as well.

### C. Mobile-assisted language learning

Technology has grown in an incredible manner and uncontrollable speed. Therefore, the use of it in different fields nowadays is a must. In the case of education, specifically language learning, it has been supported by a wide range of software programs. Because of this tendency of using new technologies and computerized devices, a new approach denominated MALL (Mobile-Assisted Language Learning) has emerged. According to [7], Mobile Assisted Language Learning is defined as a technology-supported approach for language learning which has as main objective the development and acquisition of language knowledge and skills through the assistance of mobile technologies.

[8] claims that blogs must be engaging, valuable, exciting and actionable; and classifies them into the following categories: personal, business, affiliate, niche, news, and educational blogs which can be complemented by social media such as Facebook, Instagram, e-mail and Twitter as

platforms. Regarding educational blogs, they offer learners a powerful on-line resource since they can interact and exchange ideas as well as find answers through collaboration and discussion [9]. Additionally, educational blogs are considered as constructivist tools where teachers and students become part of a shared environment on the World Wide Web. This environment enables them to keep contact with the academic community and gather relevant information related to teaching and learning issues.

Concerning teaching, educators make use of them as an alternative of traditional classes and as an independent learning tool; where homework notifications, suggested readings, interactive tasks, and class schedules can be posted. Furthermore, teachers promote the use of blogs as means of class discussion, social interaction and reading development. Within this regard, educational blogs are productive tools for teachers and students who want to take advantage of technology and language learning [10]. As stated by [11] they are relevant platforms that promote reading competence since they increase motivation, grammatical awareness and comprehension of the target language. One of the limitations that educators face in this field is the students' lack of reading habits. Hopefully, the use of internet, technology and online tools such as blogs have been a way to promote their motivation to make them get involved in language learning, since they promote their reading habits.

### D. Language learning

Language learning is considered as the process of developing language skills which include speaking, reading, writing, listening, vocabulary, pronunciation, accuracy, punctuation, and spelling [12]. Several factors are immersed when learning a language and managing to be proficient in language knowledge and use. According to [13], English has become the most important foreign language to reach academic, social, and economic advancement. Nevertheless, the fact that it is widely spoken does not determine that English is learned in the same degree. There are native and non-native speakers of the language; those who learn it as mother tongue, second language or foreign language. Regarding the third case, it could be defined as the process of learning English consciously, where teachers must create spaces for students to use it since the opportunities of practicing it outside the classrooms are limited. This is different from learning English as a second language which takes place in the target community. Then, it is widely spoken in the society and could be even considered as a lingua Franca [14].

### E. Reading (skills)

[15] describe reading as a struggling process in which a person attempts to understand the written codes about pre-established topics. In other words, it is a personal dialogue where two critical factors take place, the impressed text and the reader. This life-long skill is required not only for life dependency, but also for educational matters with the purpose of properly comprehending the information that other people want to convey. In addition, [16] defines the reading skill as a physical and mental process which introduces symbols to make up a specific language utterance. Consequently, it demands group words to be seen in a glance to understand the meaning of complete utterances. [17]; [18] agrees that reading

and writing are integrated skills that should always go together.

#### F. Intensive reading

Intensive reading is a critical skill that requires deep understanding of the written document to process and evaluate its codes. The development of this skill allows the readers to know what the stated perceptions are, the sort of jargon used, the language structure elicited by the writer, as well as its content which leads in a reading philosophy [19]. Moreover, intensive reading is the act of amassing knowledge for its forthcoming analysis. In this way, a basis of explanation can be speculated about vocabulary, grammar and language content [20].

In essence, intensive reading is a teacher-centered instruction where students are assigned to scan for detailed information, helping them to gain language knowledge under guidance and assistance. Hence, the aim of this skill is to enhance students' language ability by the takeover of new knowledge concerning grammar and vocabulary [21].

#### G. Learning and knowledge technologies (LKTs) for reading and writing development

[22] states that technology has permitted to students to develop their literacy skills as the constant use of it has brought the opportunity for them to explore a vast range of written texts available on the web. Additionally, [23] points out the development of understanding of word chains and word comprehension that learners have when technology is used as a vehicle for learning the reading skill.

### III. METHODOLOGY

The present research study approached a non-parametric experimental design in which qualitative and quantitative information was analyzed. The former was required for its qualitative nature at the early stages of its development by answering questions such as what, how, and which. Whereas, the latter was employed for its quantitative procedure to compile numerical data after conducting the experiment.

The participants of this research study were 106 high school students (57 male and 49 female) from a private institution in a highland city located in Ecuador. Students were distributed in six different levels, from eighth, ninth, and tenth years of basic education and first, second and third years of bachelor. Their ages ranged from 12 to 19 years of age, and they took English subject as part of their curriculum. Due to the COVID-19 pandemic, students were involved in virtual environments; being a blog, the main source of enhancing, practicing and corroborating the factual knowledge acquired in the interventions.

The experiment consisted of a pre-test and post-test which were based on the reading section of the Preliminary English Test (PET) from Cambridge with an allocated time of 30 minutes. The same test was used for the pre and post-test examinations. It was composed of parts one, three, and six of the original instrument. In part one, students had to read five short texts and deduce the implicit message by choosing one of the four possible answers for each question. Then, in part three, learners were asked to read a long text of around 160 words. Afterward, they had to answer five multiple-choice questions. Finally, part six encouraged the students to fill six gaps with the appropriate word. Therefore, 5 multiple-choice comprehension questions, 5 scanning questions and 6 fill in

the gap questions were used in the given examinations. Due to the pandemic situation, both tests were administered through google forms.

As the current research took part in a virtual environment, students' reading development was supported and mediated by a blog, which was created in Wix as a virtual platform that provides learners an accessible and friendly interface. This blog was complemented with the use of digital resources such as Kahoot, Nearpod, Educaplay, Liveworksheets, Padlet, Quizzis, British Council, Quizzlet, and others which enabled the investigators to create, share and collect information regarding the reading skill, either for synchronous or asynchronous work. The main purpose was to give learners the opportunity to interact orally and in a written way, in which reading was the catalyst for promoting communication among students as well as the instructor.

All the students who participated in the pre and post-test administration attended to six interventions during a 15-minute of synchronous work for 3 weeks in order to make them get involved in reading activities whose purpose was the promotion of oral fluency. Furthermore, the learners were also encouraged to work autonomously through asynchronous classes to improve their accuracy and enhance the knowledge acquired in the synchronous classes.

Regarding asynchronous work, it had as a main objective to provide meticulous gadgets to the learners with the purpose of enhancing students' reading accuracy. The technological tools that carefully elicited students to accomplish this goal were Padlet, Live worksheets, Nearpod; therefore, they could work autonomously.

Before applying the interventions, a blog and procedural lesson plans were elaborated for each class; whose intention was to discern among reading passages to provide learners in accordance with their English level and interests.

#### A. Statistics

The statistic applied for measuring data tendencies and normality was Kolmogorov-Smirnov (KS) test, as this statistic is commonly used when the data exceeds 50 participants. Furthermore, Wilcoxon was employed with the purpose of corroborating the hypothesis proposed; which was that the use of blogs has a significant impact on the development of reading skills in adolescent learners of English.

### IV. RESULTS

TABLE I. PRE-TEST AND POST-TEST AVERAGE SCORE OUT OF 10

Test	Pre-test	Post-test
Pre-test	4,0	5,4

Note: Data were taken from pre-test and post-test from the standardized Cambridge PET examination applied to 106 high school students from a private school.

Table 1 shows the pre-test and post-test average scores from the 106 students examined. The table indicates the scores before and after the treatment.

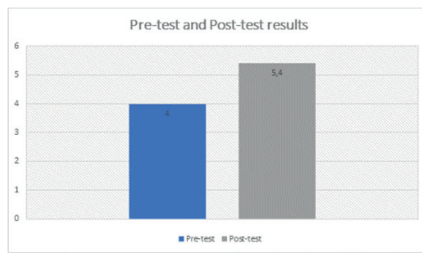


Fig. 1. Pre-test and post-test average score out of 10

Afterward analyzing the data through SPSS software, it was evident that the use of blogs contributes to the development of reading skills. The majority of students showed an improvement in the results obtained in the post-test. The average percentage of the results in the pre-test was 4.0, whereas, in the post-test, it was 5.4.

TABLE II. NORMALITY TESTS

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	gl	Sig.	Statistic	gl	Sig.
Diference	,187	106	,000	,895	106	,000

*a. Lilliefors significance correction*

The table above represents the results thrown by two statistics in order to demonstrate the validity of the hypothesis. Both Kolmogorov-Smirnov and Shapiro-Wilk indicate that the alternative hypothesis (H1) is accepted, and therefore, the null hypothesis (N0) is rejected. This could be contemplated in the values of the table since the standard value of the statistic is ,000, lower than 0.0005 in both tests of normality.

TABLE III. WILCOXON SIGNED-RANK TEST

		N	Average range	Sum of ranges
Posttest - Pretest	Negative ranges	1 <sup>a</sup>	4,50	4,50
	Positive ranges	70 <sup>b</sup>	36,45	2551,50
	Draws	35 <sup>c</sup>		
	Total	106		

a. Posttest < Pretest  
 b. Posttest > Pretest  
 c. Posttest = Pretest

Since p (value) of 0,000 is lower than 0,005 the null hypothesis is rejected, and the alternative hypothesis (H1) is accepted. Therefore, it could be stated that blogs do contribute to the development of the reading skill.

## V. DISCUSSION

The purpose of the pre-test was to diagnose the students' reading performance before the intervention. Findings show that learners had some limitations in their reading ability in the pre-test and that they had low performance in responding to fill in the gap questions. Additionally, they were not able to identify new words in context. In fact, they had to read 3 sections; the first section was regarding short prompts with multiple-choice comprehension questions. In the second section, learners had one intensive text with four paragraphs and multiple-choice scanning questions. The final section was about a short text with fill in the gap activities. The results show that traditional environments to perform reading ability was a limitation since learners were not attracted by a motivational environment. According to [24], the type of

reading texts that learners read should be in accordance with their interest.

The results from the pre-test and post-test had a significant variation. While in the pre-test students got an average score of 4 out of 10, in the post-test they obtained 5.4 over 10. These results indicate a positive influence on the part of blogs to develop reading skills. According to [25], the use of blogs contributes to improve learners' reading comprehension since they get authentic material which serves as a means to enhance the way in which they get information and process it in order to understand the written text.

Overall, findings indicate that there was an improvement on the participants' reading skills. The intervention strengthened students' reading ability by the incorporation of activities like comprehension, scanning and fill in the gap questions. In fact, learners were able to distinguish the appropriate answer regarding each question through the incorporation of blogs as an ICT tool that promotes motivation. [26] states that blogs enable teachers to create pleasant atmospheres that give students the opportunity to be active in the language production and get enriched with a vast set of resources such as websites, platforms, software, and other multimedia tools. As a matter of fact, the intervention consisted of instructing the reading skill to students through the use of blogs together with web 3.0 tools such as Kahoot, Educaplay, Quizizz, Quizlet and other multimedia resources. As a result, this process helped students to feel more comfortable at the moment of taking the post-test as they got extra practice during the interventions on how to complete in an accurate way the post-test, improving the final average of the class.

## VI. CONCLUSIONS

Learning a foreign language in a non-native community may be a huge issue than can bring obstacles and demotivation in language learners. Due to the COVID-19 pandemic, the incorporation of technological tools has helped to overcome this situation. Web 3.0 tools have been a strong benefit in the creation of technological environments for language learning to take place.

Synchronous and synchronous sceneries contribute to language development since learners can have access to information in which they may develop the four language skills and get involved in interactive activities. The presentation and promotion of input activities where reading and listening may be the main emphasis contribute dramatically on the production of language in an oral and written way. Educational blogs are digital tools that help learners to review educational information, like text, audio, multimedia resources; and develop their communicative competence by the promotion of their critical-thinking, analysis and problem-solving, and enjoyment in virtual environments.

Learners get enjoyment and fun and self-motivation when a variety of activities are implemented. At the same time, they play, they acquire language, since they have access to information world-wide, and connection with native and non-native learners.

Educators can provide feedback and promote virtual-learning environments through the use of blogs and learners can learn independently and with others as well. Due to the technology that has been surrounding children during the last

few years, they have been accustomed to the use of web 3.0. Consequently, their exposure to this kind of technology has helped them to have an appropriate usage of it for educational purposes. Concerning educational blogs, they have shown to be accurate vehicles for enhancing students' reading skills as they provide engaging activities that help the alumni to master them. Furthermore, educational blogs alongside online digital resources such as Padlet, Educaplay, Nearpod among others aforementioned contribute to the development of asynchronous activities which allow students to keep practicing their reading skills no matter the place or time.

#### ACKNOWLEDGMENT

Thanks to the Technical University of Ambato, to the Research and Development Department (DIDE-UTA) for supporting our research project "Development of Web 3.0 tools for Education as a support for collaborative Learning" SFFCHE5. Approved under resolution UTA-CONIN-2021-0068-R, and being part of the research group: Research in Language and Education".

#### REFERENCES

- [1] British Council, John Dubber, 2013.
- [2] S. Sreena y M. . Iankumaran, «Developing Productive Skills Through Receptive Skills – A Cognitive Approach,» *International Journal of Engineering & Technology*, vol. 7, pp. 669-673, 2018.
- [3] M. Alkamel y S. Chouthaiwale, «The use of ICT tools in English language teaching and learning: A literature review,» *Journal of English Language and Literature JOELL*, vol. 5, n° 2, pp. 29-33, 2018.
- [4] A. L. Souza y M. Silva, «Digital Culture and Learning in Higher Education After COVID-19: A Collaborative Approach in a Virtual Environment,» *European Journal of Education*, vol. 3, n° 2, 2020.
- [5] E. Acikgul y S. Firat, «Web 3.0 in learning environments: A systematic review,» *Turkish Journal of Distance Education-TOJDE*, vol. 22, n° 1, 2021.
- [6] A. Fakhurrazi y S. Hanna, «EFL Students' Preferences on Digital Platforms during Emergency Remote Teaching: Video Conference, LMS, or Messenger Application?,» *Studies in English Language Education*, vol. 7, n° 2, 2020.
- [7] T. Gonugal, «The use of instagram as a mobile-assisted language learning tool,» *Contemporary Educational Technology*, vol. 10, pp. 309-323, 2019.
- [8] A. Abdul, «Effectiveness of the use of electronic educational blogs in teaching computers on the achievement of students,» *Indonesian Journal of Electrical Engineering and Computer Science*, vol. 17, n° 1, pp. 489-499, 2020.
- [9] D. Fadhilawati, D. L. Rachmawati y M. Mansur, «Using Padlet to increase the students' procedure text writing achievement,» *Exposure Journal*, vol. 9, 2020.
- [10] N. Dandashly, A. Barbar y A. Munther, «The effects of using blogs and webquests in teaching,» *Global Journal of Information: Emerging Technologies*, vol. 9, n° 1, pp. 12-19.
- [11] A. Fatimah, D. Kardijan y F. Sulastri, «Blogging in Extensive Reading: Students' Voice in Blended Learning Classroom,» *Vision: Journal for Language and Foreign Language Learning*, vol. 9, p. 81, 2020.
- [12] M. Altin, A. Seda y M. Boylan, «Effect of reading comprehension instruction enriched with cultural materials on English learning,» *Taylor & Francis Online*, vol. 5, 2018.
- [13] F. Escobar, L. Muñoz y A. Silva, «Motivation and E-Learning English as a foreign language: A qualitative study,» *ScienceDirect*, vol. 5, 2019.
- [14] A. Sewbihon, «Factors affecting the attitudes of students towards learning English as a foreign language,» *Taylor & Francis Group*, vol. 7, 2020.
- [15] S. Spanou y M.-N. Zafiri, «Teaching Reading and Writing Skills to Young Learners in English as a Foreign Language Using Blogs: A Case Study,» *Journal of Language and Cultural Education*, vol. 7, pp. 1-20, 2019.
- [16] S. Abd, R. Azis y Sukarsih, «Developing Reading Learning Model to Increase Reading Skill for Animal Husbandry Students in Higher Education,» *Britain International of Linguistics Arts and Education (BioLAE) Journal*, vol. 2, pp. 484-493, 2020.
- [17] D. Brown, *Principles of language learning and Teaching*, United States of America: Pearson Education, 2006.
- [18] J. Harmer, *How to teach English*, 2 ed., Pearson Education Limited, 2010.
- [19] L. Neisi, M. Hajjilili y E. Namaziandost, «The impact of using inverted classrooms on promoting extensive versus intensive reading comprehension among iranian upper-intermediate efl learners,» *Theory and Practice in Language Studies*, vol. 9, pp. 1513-1523, 2019.
- [20] E. Nurul y S. Herwiana, «Implementation of online creative pedagogical models in intensive reading subject,» *Journal Basis UPB*, vol. 8, 2021.
- [21] N. Alsheikh, M. O. Alhabbash, X. Liu, S. A. O. Al y N. O. Al Mohammedi, «Exploring the interplay of free extensive voluntary ESL reading with intensive reading of arabic native speakers,» *International Journal of Instruction*, vol. 13, pp. 295-314, 2020.
- [22] H. Shamir, C. Miner, A. Izzo, K. Feehan, E. Yoder y D. Pocklington, «Improving Early Literacy Skills Using Technology at Home,» *International Journal of Learning and Teaching*, vol. 5, 2019.
- [23] F. A. Yamchi, H. D. Asl y N. Assadi, «The Effectiveness of Using Multimedia in Smart Classes on Improving Reading Disorders , Word Chain , and Word Comprehension in Late Learning Students,» *Research in English Language Pedagogy*, vol. 9, pp. 469-488, 2021.
- [24] T. Akhmad y I. Shchukina, «Modern English blogs as a helpful tool to enhance students' reading skills,» *Focus on Language Education and Research*, pp. 31-40, 3 12 2021.
- [25] B. Hamuddin, I. Muzdalifah y Dahler, «Blogs as Powerful Learning Tools: The Perception from EFL Students in Indonesia,» *INA-Rxiv Papers*, 2018.
- [26] S. Bal, «An investigation of the integration of blogs into EFL classes: Learners' views toward blogs and preferences for writing class,» *Journal of Educational Technology & Online Learning*, pp. 594-604, 2021.