

Assessment apps to evaluate students' reading progress in English classroom

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ABSTRACT

The traditional way to assess students' reading progress hinders their motivation and engagement, which negatively affects their academic performance. Therefore, this study seeks to address the issue by analyzing the effectiveness of three interactive technological assessment tools: Kahoot, Quizizz, and Socrative, as alternatives for assessing English as foreign language (EFL) students' reading comprehension, as well as exploring the students' perceptions about the use of these technological tools. This quasi-experimental study involved mixed method approach and consider 60 senior high school students of Loja, South of Ecuador as a purposive sample. There were outlined advantages and drawbacks linked to three assessment technological tools applied; however, Socrative revealed to be the most effective. Effectiveness seemed contingent upon several variables, such as the educational goals, functionalities of the tools, and the students' settings. Additionally, the use of technological tools provided a range of resources to enhance dynamism and engagement of learning by facilitating interaction among students. In essence, this resulted in the consolidation of new knowledge, enabling students to retain information over an extended duration.

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1. INTRODUCTION

Strong English and reading skills are crucial building blocks for success in many areas of life. This skill allows access and processing information throughout life, that is essential for staying informed and engaged in the world. Reading exposes us to new ideas, perspectives, and cultures. It broadens knowledge base and fosters a deeper understanding of the world around. Considering reading skills in English as foreign language (EFL) contexts, it encounters new vocabulary and grammar which improves communication skills, both written and spoken [1].

Students are expected to cultivate critical thinking abilities that involve inference, analysis, and synthesis. Furthermore, they should gain global cultural insights and foster their communication skills that help them understand better the written texts across different genres. Consequently, the significance of reading skill is highlighted because it enhances vocabulary and also empowers learners to be engaged independently with various written materials and tasks.

Regarding the teaching-learning process oral communication, reading, writing, language through the arts, and communication and cultural awareness are the five key elements in EFL curriculum [2]. In this regard, reading is emphasized as a vital skill for developing critical thinking because through reading,

students can attain cultural insights, communication abilities, and independent learning. However, some Ecuadorian EFL students who struggle with reading skill face limitations and might not succeed in their personal and academic development. In this sense, learning English within a literacy-rich environment strengthens all four language skills in an authentic way, through the access to both print and digital media. With the teachers' support, students discover the benefits and advantages of becoming literate. Within the EFL teaching-learning process assessment plays a relevant role because it not only enables teachers to monitor students' output but also gives students the opportunities to know what they need to reinforce [3].

Nowadays, the use of technology is fundamental in the teaching-learning process for the benefits that it offers to all English language skills, especially reading. For this reason, it is crucial that instructors have the competence to deal with information and communication technology (ICT) and be familiarized with different platforms for teaching practice [4]. Notwithstanding, it is evident that some educators have not received the appropriate training, and at the same time, they do not possess the skills to use technological tools to assess their students' progress.

Assessment is an essential component in the teaching-learning process [5]. It provides educators with visions into students' progress, pinpointing areas that require improvement, and suggests instructional strategies. Furthermore, this author highlights that assessment activities are used by pedagogues to examine students' acquisition levels.

Besides, the digital generation has grown up with modern technology and youngsters have become accustomed to using it as a helping tool in all aspects of their lives, including studying. Indeed, students feel confident to employ any tools in their learning process [6]. Kahoot, Quizizz, and Socrative are technological tools that teachers can use to assess students' reading progress. These tools give teachers the opportunity to design a variety of questions and can be employed as formative and informative assessments [7]. Various researchers mention some of the benefits that include the increase of students' motivation, immediate results of the performed tasks and instant feedback [8]. Consequently, considering the advantages of these technological tools, this study attempts to confirm the effectiveness of applying them to evaluate students' reading progress by answering the following research questions:

- i) Which technological tool is the most effective to assess students' reading comprehension?
- ii) What are students' perceptions about the use of these technological tools to assess students' reading comprehension?

2. LITERATURE REVIEW

2.1. Importance of EFL reading

Reading plays a very important role in individuals' daily habits as it enhances comprehension of various types of texts and genres. In this vein, when students are exposed to diverse reading contexts and corresponding activities, they can develop vocabulary understanding and writing abilities through exposure to diverse content [9]. Besides, reading in English offers multiple benefits, fostering literacy acquisition and personal growth and development [10]. Additionally, a research [11] emphasizes the significance of English reading for national well-being, productivity, and prosperity, underscoring the importance of fostering reading and literacy skills across all demographics.

Reading is an essential skill for improving English proficiency, providing learners with access to valuable information and content [12]. Given the importance of EFL reading, educators should prioritize providing ample opportunities for practicing both in and out of the classroom, employing effective strategies to support learners in achieving this objective. One of the main purposes of reading is to grasp information from a text. However, it becomes a serious problem for EFL learners [13]. To comprehend a text, it is necessary to familiarize students with vocabulary, different strategies, techniques, and activities that help them activate prior knowledge in the mother tongue to transfer it to the target language [14]. Learners need to have the ability to infer the meaning from texts [15].

Some findings reflect that reading is the most challenging language skill to the EFL learners, which can be evidenced by very low students' scores in reading courses or activities. The reasons usually mentioned are the differences between the mother tongue and English and the lack of prerequisite linguistic knowledge or study materials. Even if students are provided with instructions in decoding at different levels, they frequently get stuck at the decoding level failing to make sense of what they read and this of course makes them feel disappointed and demotivated to reading more [16]. Similarly, a study [12] noted that second language (L2) learners often encounter difficulties in reading due to their limited grasp of grammar structures and vocabulary. This limitation leads learners to break down the message into individual words to comprehend the information, resulting in a fragmented understanding, hindered comprehension process, and misinterpretation of the message.

2.2. Assessment in EFL reading

Assessment, in general, is a process that comprises a cycle of activities that allows teachers to monitor students' progress. In addition, tests are part of assessment and that they can be applied as a device for this purpose [3]. Assessment plays a relevant function in the teaching-learning process because with the obtained results not only can teachers make some adjustments to their proposed tasks to enhance students' achievements but also students can be aware of their strengths and weaknesses. Indeed, the aim of assessment in classroom "is to help students learn and to improve instruction rather than being used only to rank students or to certify the end products of learning" [17]; for that reason, the teacher must devote a lot of time and effort preparing ways to assess students through creative tasks, activities and instruments that help them to succeed in the acquisition of the target language.

Within the educational context, reading plays an essential role because students can deep their knowledge through the revision of information. There is a variety of tasks to assess reading skills such as: reading aloud, multiple choice, picture-cued items, matching tasks, editing tasks, gap filling tasks, cloze tasks editing, scanning, ordering tasks, skimming and summarizing [3], [18]. Assessing reading is not an easy task, it can be challenging for teachers because they must look for the most appropriate techniques and strategies to meet the objectives of the planned activities. Before assessing reading, teachers should train their students with different kinds of exercises to help them understand different kinds of genres; thus, students can succeed when being assessed [18].

2.3. Technological tools for assessing EFL reading

Evaluation has become more entertaining thanks to the use of technological tools inside and outside the classroom. Nowadays, students do not receive printed tests with lots of exercises as it used to be before, but they are provided with funny and interesting evaluations through technological tools. These enable applying online quizzes and games to assess EFL learners and increase their motivation and engagement [19]. As the new generation has grown up surrounded by technology, nowadays EFL learners do not face any difficulties using it [6]. Thus, this fact represents an advantage for teachers when introducing the use of certain applications for assessing their students' progress. Therefore, EFL teachers must take advantage of the technological tools to implement them in the assessment process. Kahoot, Socrative, and Quizzes are alternatives to be integrated into the teaching-learning process to assess EFL reading progress for the benefits that each tool offers.

Kahoot is a free website that was launched in 2013 and has become popular in the teaching-learning process as it offers a game-like response platform and multimedia tool that promotes learners' participation. In addition, it provides a competitive learning format and leads to easy acceptance by nowadays generation [20]. Additionally, it is an effective tool that engages learners through problem learning, meta-cognitive support, critical thinking, meaningful, and fun activities. Furthermore, Kahoot is an assessment tool that enables teachers to design game-based assessments such as quizzes and surveys, and it also promotes ongoing learning processes, motivation, socialization, and interpersonal interaction [21].

Kahoot has proved to be effective and beneficial to be used for assessments [22]. Considering that reading is a skill that students do not really enjoy and is not developed easily, teachers must find an alternative to encourage students to do their best when practicing this skill, and especially when being assessed, that is why it is necessary to introduce Kahoot to promote reading in a different way. Kahoot aims to make learning enjoyable and effective. It can be designed to accommodate learners of all age groups. Kahoot has components capable of generating continuous interaction and addressing students' learning needs in general. Moreover, it awakes students' interest and inspires learning [23]. Hence, boredom can be discarded as the use of this tool does not require much time within the class setting. Nevertheless, the possibility of making students feel bored once they get accustomed to it, can be one of the drawbacks [24].

Another technological tool that can be used to assess reading skill is Socrative, which is a learning tool that enables teachers to create multiple-choice questions, true/false, or open-ended short questions for students' responses [25]. As Socrative is an online learning application, it can be easily accessed using any gadget such as laptop, computer and mobile phone which at the same time promotes user friendliness. Socrative motivates the students to improve their reading achievement as the set-up activities are based on interactive learning approach during reading sessions, which fosters their engagement with other peers; thus, immediate feedback is provided [26].

Furthermore, Socrative has been selected by teachers for its effectiveness when it comes to assessing reading in students because it facilitates them to monitor their students' progress [27]. The same has been affirmed by a study [26] who mentions that Socrative can be efficacious for assessing students' reading. Other arguments in favor of using this tool are students' engagement, which promotes critical thinking and collaboration. Therefore, Socrative has been considered an important assessment tool in EFL classroom for being attractive for students and most importantly for promoting students' autonomous learning. By using Socrative in reading classes, students can share the meaning of new and difficult words

with their classmates, and they can also learn texts. As there is a variety of the types of questions, the students are enabled to understand main ideas and supporting details in reading texts easily.

Regarding Quizizz, it is a game-based educational app that enables teachers to create quizzes in an interactive and enjoyable way [28]. It is also a helpful tool when assessing students' reading progress [29]. Thanks to the user-friendly interface that this tool offers, students can take the quiz and see their score immediately on the live leaderboard. In the same token, instructors can track the process and download the document to monitor students' performance. This app uses an accounting classroom to stimulate students' interest and engagement [30], it can also lead to student focus, commitment, satisfaction, and inspiration [31]. Quizizz allows students to switch from their traditional role as being just spectators being active agents during the learning process which positively impacts their academic performance reducing anxiety [32]. Quizizz is a game-based educational app that allows to design tests with different options like true or false, multiple-choice, survey and fill in the blanks; additionally, images that help students to choose right answers can be incorporated [30].

Considering the aforementioned information regarding the use of these technological tools to assess students' reading progress, it is crucial to mention their advantages. They provide instant feedback on comprehension, which allows teachers to quickly identify areas where students are struggling with understanding [33]. They also allow teachers to track class and individual student progress over time by reviewing quiz data, this helps inform future instruction [34]. Lastly, these tools make it easy to create and assign quizzes digitally [24] and this saves teachers time compared to handwritten quizzes. Finally, digital quizzes can include multimedia like videos and images to assess reading skills beyond just comprehension which provides a more well-rounded assessment [35].

3. METHOD

3.1. Settings and participants

The participants of this study were 60 students who belonged to the third senior high school level of a public educational institution located in Loja, South of Ecuador. This purposive sampling refers to a deliberate selection of subjects and locations by a researcher to discover or comprehend the key phenomenon [36]. Their English proficiency was A2 level according to the Ecuadorian curriculum. At this level, learners should understand sentences and frequently used expressions related to areas of most immediate relevance (e.g., very basic personal and family information, shopping, local geography, and employment). It is important to highlight that all participants were informed about the purpose of this study, they agreed to be part of it and gave their oral consent. Furthermore, their names and the name of the educational institution are anonymous to protect their identity.

3.2. Procedure

This quasi-experimental study applied a mixed approach to combine the quantitative and qualitative data that enabled triangulation of information to validate it [36]. This study was developed within three phases. During the first phase, the online pre-test was applied, which consisted of a reading comprehension test that included 10 multiple-choice questions, this test was based on A2 level contents. The second phase included training for students to become familiar with the technological tools (Kahoot, Socrative, and Quizizz). During the 6-week intervention, students' reading progress was assessed using each of the tools within 2 weeks. The six different reading topics taken from students' main textbooks were used; each topic was covered during three classes, each of the topics included 4 to 5 different reading comprehension tasks. The assessments included different types of questions such a multiple-choice question, true and false statements, unscramble, word list, drop and drag, matching; images also were included. For the first two reading topics, students were assessed using Kahoot, topics 3 and 4 were assessed by Socrative and the 2 last ones with Quizizz.

The last phase involved an online post-test based on the same questions considered for the pre-test to verify if the students showed any reading comprehension improvement. Furthermore, an online survey was applied to students for exploring the perception of using the tools to assess their reading progress. All instruments used were validated by experts in the field.

Finally, the data analysis was performed using the SPSS program, which was utilized to make a comparison between the pre- and post-test, using a paired simple t-test. Additionally, the repeated measures ANOVA test was conducted to determine which technological tool was the most effective for assessing reading comprehension in EFL students. Thus, to corroborate this result, the post hoc pairwise comparisons test was carried out.

4. RESULTS AND DISCUSSION

In this section, the main findings are presented and analyzed in relation to the two research questions compared with previous studies. This shows how this study adds new insights about using apps to track students' English reading progress.

4.1. Which technological tool is the most effective to assess students' reading comprehension?

Once the information was gathered from the pre- and post-tests, the t-test was applied to measure the impact of using technological tools on assessing reading comprehension in EFL students. Therefore, Table 1 shows that the result from the pre-test was 5.3, while in the post-test was 7.9 out of 10, showing a significant improvement of 2.5 points. This result is corroborated by the p-value of <.001. Similarly, the standard deviation value (1.84) indicated that the results were not dispersed around the mean, which demonstrated uniform performance among the participants. A significant increase in post-test scores was observed compared to pre-test scores, indicating the intervention's positive effect.

Table 1. Paired samples t-test results for pre-test and post-test

Measure	M (SD)	t	df	p-value
Pre-test	5.30 (1.84)			
Post-test	7.90 (1.84)	10.95	59	<.001

The participants in the pre-test pinpointed their deficiency in relation to knowing the meaning of words and phrases and making inferences; furthermore, they were not able to recognize the gist of the text. They also presented some difficulties when distinguishing relevant information from minor details, they did not comprehend what they read and therefore could not retain main information and summarize what had been read. The results gathered are corroborated by a study [13], who acknowledge the problems that EFL learners presented when reading. They assert that reading in EFL requires that learners know the meaning of words and phrases, they already possess in their mother tongue [14].

On the other hand, after the intervention, the results of the post-test demonstrated that students improved their reading comprehension, in terms of making inferences, predicting content, contrasting, organizing and synthesizing information; finally, they were able to increase their vocabulary. The incorporation of the technological tools to assess students was helpful to obtain higher results in the post test. In this vein, assessment has the role of benefiting students when learning, instead of rating students to certify their learning [17]. Furthermore, technology tools bring benefits when assessing EFL reading progress because it is possible to apply online quizzes and games, that allow the inclusion of pictures and videos; as a result, students retain information gathered from reading as well as the vocabulary and these tools help to increase students' motivation and engagement [19].

The students' grade average after using the assessment tools indicated that Socrative obtained the highest score 8.2 out of 10. This is because this tool is much easier to use and simpler to log into. Furthermore, learners received better results, since they were able to understand, retain and comprehend the reading texts, as the activities were focused on interactive learning, which leads to motivation and consequently to the improvement of reading achievement [26].

In terms of Quizizz, students' average was 7.8 out of 10, which can be attributed to motivating, engaging, and interacting features of this tool. It also reduces stress and provokes enthusiasm in students [37]. Through its use students can work at their own pace, have instant feedback for each question and boosts students' confidence in their reading abilities.

Regarding Kahoot, the average attained 7.5 out of 10 clearly indicates that this tool despite being popular among teachers, was less effective according to students' performance. Some of the reasons can be time constraints for students who are less proficient in reading and need more time to process the text, limited feedback which does not allow students to understand their mistakes, and background music distraction, that can lead to less concentration [24].

The results of Table 2 indicate which technological tool (Kahoot, Quizizz, and Socrative) outperformed during the intervention, the repeated measures ANOVA was applied based on the students' performance scores. Hence, results revealed a meaningful difference of technological tools on scores, $F(2, 118)=54.48, <.001$. Using technological tools for assessing reading in EFL students supports their reading comprehension. However, Socrative yielded better outcomes than the other tools.

Table 2. Repeated measures ANOVA results

Source	df	F	p-value
Technological tools	2	54.48	<.001
Error	118		

The data showed in Table 3 point out the post hoc pairwise comparisons with Bonferroni correction exposed the significance among the different technological tools. The students' performance scores revealed that Socrative, compared to Kahoot ($p<.001$) and Quizizz ($p<.001$), obtained the highest average results, demonstrating its superior effectiveness in assessing reading comprehension in EFL students. While the scores on Quizizz were higher than those on Kahoot ($p=.001$). In general, these findings verified that Socrative was the most effective technological tool.

Table 3. Post hoc pairwise comparisons of student performance across educational platforms

Comparison	Mean difference	t(59)	p-value
Kahoot vs Quizizz	-0.20	-3.48	.001
Kahoot vs Socrative	-0.78	-10.83	<.001
Quizizz vs Socrative	-0.58	-7.88	<.001

4.2. What are students' perceptions about the use of these technological tools to assess students' reading comprehension?

In terms of answering the second research question, it can be noticed in Table 4 the results of the survey applied to the students. Regarding the results in Table 4, participants feel confident using Kahoot, Quizizz, and Socrative when being assessed in reading skill. Most of the students (96%) were pleased with taking the online assessment. This result was corroborated by the general results of this study whereby students participated actively, and they showed their enthusiasm. Socrative is an effective engaging tool that contributes to enhance reading comprehension and all English language skills in many contexts [38]. Similarly, Kahoot is also a good technological tool to assess students' reading progress, but teachers are the ones who must consider the advantages that each tool provides [22].

The features offered by the different technological tools make students like them. The results revealed that 91% of students agreed that when using these tools, the assessments were more entertaining and attractive, awakening their intrinsic motivation that encouraged them to actively participate. Consequently, all these tools can be used as alternative assessments that can be enjoyable for students [39].

Similarly, students confirm in 87% that they felt motivated when teachers use these technological tools to be assessed in their reading skills. They claimed to find it more attractive since images included in the tests help them to recall learned content. To make assessment entertaining, teachers should incorporate images that promote students' engagement and deeper their reading comprehension [40].

Table 4. Students' survey

Questions	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Totally disagree (%)
I feel less stressed out when being evaluated using Socrative, Quizizz, and Kahoot.	56	40	2	2	0
I find this way of assessment more entertaining and attractive because it encourages me to do my best.	51	40	7	2	0
I feel motivated to participate in reading assessments when using Socrative, Quizizz, and Kahoot.	61	26	9	4	0
I receive immediate feedback on my reading performance when using Socrative, Quizizz, and Kahoot.	46	25	20	7	3
Pictures included in the test help me to recall learned vocabulary.	35	44	21	0	0
I can see my score immediately after finishing my test.	100	0	0	0	0
I like using Kahoot, Quizizz, and Socrative as alternative assessments to check my progress.	47	44	9	0	0
Constant assessments using Socrative, Quizizz, and Kahoot have helped me to improve my reading skills.	35	40	15	10	0
I would like to continue using these tools for making progress in my reading skills.	45	41	14	0	0
Using these ICT tools does not require teacher's support.	79	21	0	0	0
I feel satisfied with the overall experience of using these ICT tools.	68	23	0	9	0
Using these ICT tools presented a technical difficulty, which affected my final grade.	5	12	13	30	40

Most of the participants (71%) manifested that they obtained immediate feedback by using Socrative, Quizizz, and Kahoot. Receiving immediate feedback permitted students to recognize their misconceptions and therefore, they could improve their understanding and avoid making the same errors. One asset of using this application is the real-time assessment of a student that improves the effectiveness of the teaching-learning process [41]. In the same token, the results were very favorable concerning that

students were able to know the scores of their assessments immediately, which was aligned with the 100% obtained. Interactive features of Socrative, Quizizz, and Kahoot gave students real-time feedback and progress tracking which are key for self-directed learning. This allowed students to notice their strengths and weaknesses after being assessed. In the same token, instant feedback upon completing the assessments allows students to gauge their progress, make necessary adjustments, and reinforce their learning [42].

Most of the students (79%) believed that pictures included in the assessments helped them to increase and retain their vocabulary and consequently comprehend the texts included in the in-reading activities. Kahoot, Socrative, and Quizizz can be an effective way to motivate EFL learners, therefore enhancing their ability to comprehend various reading materials. Using Kahoot, a game-based learning platform, can be a successful way to boost motivation among students learning EFL [43].

With regards to the statement if students like the idea to use these tools as alternative assessments to check their progress, half of the participants strongly agreed and another half agreed which means 91% them, confirmed that the variety of question types, such as: multiple choice, true or false, short answer, and matching, among others, ensures that students are assessed on different cognitive skills, including recall, comprehension, analysis, and problem-solving. This diversity allows students to demonstrate their understanding and knowledge in various ways.

In the same vein, 75% of the participants declared that these tools helped them improve their reading skills and infer new vocabulary in context; thus, students can learn the meanings through the questions and answer options. This can be confirmed by a study [28] who state that when constantly practicing reading carefully, students are able to analyze the information to identify key details, supporting evidence, or specific examples. Kahoot, Socrative, and Quizizz often involve time-limited assessments which require students to read fast and efficiently allowing them to improve their reading speed, make inferences or draw conclusions based on the information presented in the reading passages. All this encourage students to think critically, analyze the text, and find logical connections between different pieces of information. Regular practice with these types of questions enhances students' inferential and analytical reading skills; it also promotes active reading, as students are constantly reading, processing, and responding to questions.

All mentioned benefits are also supported by 86% of participants who agreed that they would like to continue using these tools for making progress in their reading skills. The use of previously mentioned platforms could have supported theoretically the function without extensive teacher support. This has also been evidenced with 100% agreement among surveyed students as they were provided with opportunities to engage in self-directed learning. Students could independently complete assessments, review immediate feedback, and reflect on their own progress, which promoted their autonomous learning. Furthermore, these interactive-nature platforms allow learners to take ownership of their learning process, reducing the need for constant teacher support [44].

Regarding the statement "I feel satisfied with the overall experience of using these ICT tools", students claimed with 68% and 23% that they strongly agreed and agreed respectively that using the tools make them have a nice experience to be assessed. The utilization of these assessment tools in education has positive effects on students' motivation, satisfaction, outcomes, attitudes, and skills [45]. In this way, their success relies on how effectively teachers incorporate them.

Considering the results of the last statement whether Socrative, Kahoot, and Quizizz presented a technical difficulty that affected students' final grade, 5% of respondents strongly agreed with the statement, 12% agreed, 13% were neutral, 30% disagreed, and 40% strongly disagreed. This means that the majority (70%) of those surveyed did not have any technical problem using these tools. In other words, participants showed an upbeat disposition by using these tools since they could do their assessments without any inconvenience. It is important to mention that the teacher can track the students' progress to verify how well they have performed [46].

5. CONCLUSION

While the study identified certain benefits and limitations of the three technological tools used for assessing reading, Socrative proved to be the most effective one. Its efficiency appeared to depend on various factors, including real-time feedback, interactive engagement and effectual assessment. Additionally, Kahoot, Quizizz, and Socrative were valuable technological tools that contributed to EFL students' reading progress, particularly with regards to making inferences, predicting content, contrasting, organizing, and synthesizing information; lastly, they expanded their vocabulary. This confirms that incorporating technology in an appropriate and well-designed manner can enhance the assessment experience for EFL learners, as it offers multiple tools to make learning more dynamic and exciting.

The novelty contribution of this study demonstrates that the use of assessment apps involved in this research does not only engage students but also supports the development of reading skills. Furthermore, this research emphasizes how these applications function by taking into consideration learning objectives and

students' profiles that lead to significant reading assessment improvements. Additionally, it sheds new light on students' favorable perceptions of using these assessment apps due to their real-time feedback, reliability, and engaging nature.

Another important finding reveals a general positive students' perception towards using technological tools for assessing reading. Students appreciated the interactive, engaging, and efficient nature of using Kahoot, Quizizz, and Socrative which is reflected in their academic performance. Besides, learners feel enthusiastic and willing to continue using them when assessed since they can receive immediate results. It is suggested to continue with further research with the aim of exploring the long-term impact of using technological assessment tools on students' reading development in EFL classrooms. Moreover, research for optimizing the educational potential of such tools could offer valuable insights.

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C : **C**onceptualization

M : **M**ethodology

So : **S**oftware

Va : **V**alidation

Fo : **F**ormal analysis

I : **I**nvestigation

R : **R**esources

D : **D**ata Curation

O : **O** Writing - **O**riginal Draft

E : **E** Writing - **R**eview & **E**ding

Vi : **V**isualization

Su : **S**upervision

P : **P**roject administration

Fu : **F**unding acquisition

CONFLICT OF INTEREST STATEMENT

Authors state no conflict of interest.

INFORMED CONSENT

All participants were informed about the study's purpose and procedures and gave their voluntary consent. They were assured of confidentiality, anonymity, and the right to withdraw at any time without academic consequences.

ETHICAL APPROVAL

This study complied with national and institutional ethical standards and adhered to the principals of the Helsinki Declaration for research involving human participants. Since it focused solely on regular educational practices and involved no intervention beyond normal academic activities, formal ethics committee approval was not required. Nevertheless, all ethical guidelines were strictly observed to ensure integrity, confidentiality, and respect for participants' rights and dignity.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author [GKC-M], upon reasonable request.




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