

ONLINE ANNOTATIONS IMPACT ON EFL LEARNERS' READING COMPREHENSION

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Published: 31/03/2025

Accepted: 07/05/2024

Received: 03/06/2023

ABSTRACT

In order to succeed in acquiring a foreign language, it is essential to develop effective reading skills. Reading is fundamental to instruction in all aspects of language learning and can aid learners in developing various language features. Therefore, it is crucial for EFL educators to recognize and implement effective strategies and tools to enhance their learners' reading abilities and overall language proficiency. With the influence of technology in our daily lives, it is important to identify the impact of online annotations on developing EFL learners' reading comprehension. To this end, a questionnaire, classroom observation, and interviews are used as research instruments with 30 second-year EFL students and 5 teachers from the University of Badji Mokhtar Annaba, selected through simple random sampling. The findings suggest that online annotations can improve EFL learners' reading comprehension and positively impact both teachers' and students' attitudes towards employing online annotations for reading comprehension tasks.

Keywords: Digital tools; EFL students; EFL teachers; On-line annotations; Reading comprehension.

1. Introduction

Developing effective reading skills is crucial for succeeding in acquiring a second language. Reading serves as the foundation for instruction in all aspects of language learning. By reading, learners can develop various language features, such as grammar and vocabulary. Therefore, developing reading skills is essential to language teaching to ensure meaningful learning processes (Mikulecky, 2008). Therefore, it is crucial for EFL educators to recognize and use effective strategies and tools to improve their EFL learners' reading abilities, ultimately enhancing their overall language proficiency. As technology has greatly influenced and impacted our daily lives, education has not been left behind. In fact, in today's academic landscape, online resources have become a crucial source of knowledge for students. From blogs and Online Discussion Forums (ODF) to Wikis and Learning Management Systems (LMS), digital educational spaces are rapidly expanding. Thus, it is important for teachers to guide and provide their students with the necessary skills to navigate these online resources effectively. This

will enable them to access a wealth of knowledge and make the most of the digital learning experience (Gilbert, 2017). Therefore, it is crucial to identify the impact of digital tools on developing EFL learners' reading comprehension. Then, the present research focuses on integrating technology into reading comprehension tasks. For example, incorporating a range of online annotation styles can be advantageous, supporting the reading process (Thoms & Poole, 2017). Therefore, the goal is to determine the extent to which online annotations can enhance this process. The present study seeks to answer the following questions:

1. How can online annotations facilitate the reading process?
2. Do EFL learners appreciate online annotations to facilitate reading tasks?
3. Do EFL teachers appreciate online annotations to facilitate reading tasks?

This study aims to explore how online annotations can improve the reading proficiency of EFL learners using a mixed-method design. The research instruments used include a questionnaire, classroom observation, and interview. The participants are 30 second-year EFL students and 5 teachers, selected from the University of Badji Mokhtar Annaba through a simple random sampling method. The study began with an introductory phase where the participants were informed about the research nature. Then, they engaged in reading comprehension courses using digital tools with online annotations for a period of 5 weeks. A classroom observation was conducted during the courses, and at the end, the participants filled in questionnaire forms. Finally, EFL teachers were interviewed.

2. Literature Review

2.1 Reading Comprehension

Many studies have been conducted on reading comprehension, but a definitive conclusion on its nature has not been reached. Reading is seen as a complex, cognitive, internal, and invisible activity that occurs within the reader's mind (Wolf, 1993). In fact, reading serves as the foundation for all language learning activities such as using textbooks for language courses, writing, revising, editing, developing vocabulary, and acquiring grammar skills (Mikulecky, 2008). As a matter of fact, reading proficiency had a positive impact on other language skills such as writing, speaking, and syntax control (Elley, 1991).

Reading comprehension is a difficult skill to develop in students, and "... is a lifelong skill that students need to acquire at an early age" so, teachers need to use the necessary strategies (Helmerts, 2017, p. 3). Moreover, reading goes beyond simply reciting the information found on a single page. It involves critical thinking and the ability to delve deeper than the surface level. In fact, reading requires going beyond literal comprehension (Norris & Phillips, 1987). Developing strong reading skills is

crucial for accessing information and knowledge. It is widely regarded as a healthy habit contributing to intellectual growth and civic engagement. Therefore, comprehending what you read is essential in ensuring that students acquire meaningful learning and become discerning readers who analyze information rather than simply absorbing it (Tovar et al., 2018). Therefore, reading holds immense value as it greatly impacts EFL learners' language proficiency and contributes to individuals' overall personal development.

2.2 Educational Technology

Different researchers have provided their own interpretation of what educational technology entails. For example, it is defined as the systematic use of scientific knowledge to enhance the efficacy of teaching and learning (Leith, 1966). It is also viewed as the utilisation of scientific and technological advancements, alongside legal principles, for the betterment of the educational process (Kulkarni, 1969). Moreover, educational technology can be defined as utilising contemporary skills and techniques to cater to the pedagogical needs of education and training. In addition, educational technology is defined as the promotion of learning achieved through the manipulation of educational media and methodologies and the management of the surrounding environment in so far as it influences the learning process (Unwin, 1969).

The use of technology has impacted various areas of education, including language learning. Since language learning involves different skills, technology has had an effect on listening, speaking, reading, and writing skills. For example, regarding reading skill, various studies have been conducted to compare the impact of reading digital texts versus printed texts on reading speed, accuracy, and comprehension. However, the results have been inconsistent. While some early studies showed that printed text reading tasks were better in terms of speed, accuracy, and comprehension, other studies reported insignificant differences (Pardede, 2019). Dillon's study found that reading performance on a computer screen was around 20% to 30% slower than on paper (Dillon, 1994).

2.3 Online Annotations and Reading Comprehension

As technology advances, people increasingly turn to non-traditional forms of reading, such as online documents that include videos, pictures, sounds, animations, and hyperlinks. This type of reading, called hypertextual, involves following nodes and hyperlinks in a specific order. Despite the non-linear nature of hypertexts, many people still read them in a linear way, simply transferring their offline reading habits to online reading (Sung et al., 2015). As more and more documents are digitized, it has become increasingly important to have mechanisms that allow for online annotations. These

mechanisms have the potential to significantly enhance the online reading experience (Chiu-Jung & Pei-Lin, 2012). Examples of such mechanisms include EDUCOSM (Nokelainen et al., 2003) and PAMS (Su et al., 2010), which enable students to annotate the same documents and share feedback on annotations (Tseng et al., 2015). This collaboration can help improve students' reading comprehension.

There are various digital tools available that allow readers to annotate texts. These tools enable users to highlight and comment on a text, with standard options such as bolding, underlining, changing text colour, highlighting, and commenting available on most platforms. Some tools, such as Hypothesis and NowComment, allow students to annotate texts from the open web, including news sites, PDFs, and open-source books. These tools facilitate threaded annotations and enable reader conversations, resulting in deeper engagement with digital texts. Additionally, using touchscreen devices or styluses, students can write directly on the screen and leave voice or video comments using a mic or webcam. Overall, these digital annotation tools provide a range of options for students to interact with texts and enhance their learning experience (Hawley Turner & Zucker, 2020).

Some researchers say marking unfamiliar words, highlighting key ideas, and adding notes can enhance reading comprehension (Marshall, 1997). For example, Huang conducted a study to compare the effectiveness of online and paper-based reading strategy instruction on the reading comprehension of 57 EFL learners. The findings showed that the online annotation tool's highlighting function received the second most positive feedback. This feature facilitated incidental vocabulary learning as students could easily track the parts that required attention due to the colour-coded highlight function. Additionally, they could re-read for better understanding using the highlighting feature (Huang, 2014). Moreover, annotation methods have been found to reduce the cognitive load during the reading process (Chun & Payne, 2004), aid in comprehension by linking information within text (Abuseileek, 2012), and enhance critical reading skills (Johnson, Archibald & Tenenbaum, 2010). Moreover, such methods offer interactive reading experiences that enable readers to identify crucial aspects of paragraphs (Lo et al., 2013).

3. Research Design

This study looks at how online annotations affect the reading skills of EFL learners. For this purpose, three research instruments are used: a questionnaire with ten closed-ended questions, classroom observation, and a face-to-face interview with six structured questions. The participants in the present research are 30 second-year EFL students and five teachers selected from the University of Badji Mokhtar Annaba

through a simple random sampling method. This study aims to answer these research questions:

1. How can online annotations facilitate the reading process?
2. Do EFL learners appreciate online annotations to facilitate reading tasks?
3. Do EFL teachers appreciate online annotations to facilitate reading tasks?

The research started by informing the participants about its nature. Afterwards, they participated in five-week digital reading comprehension courses with online annotations. Classroom observations were done during the courses, and the participants filled out questionnaires at the end. Finally, EFL teachers were interviewed. The students' questionnaire provides numerical results that are analysed quantitatively, and both the classroom observation and the teachers' interview provide qualitative results that are analysed quantitatively.

4. Findings and Discussion

The students received a ten-question questionnaire as a starting point for the research. Table n°1 displays the results of this questionnaire. The first question examined whether the students found the reading process to be simple. The findings showed that 18 students (60%) found the reading process easy, and only seven students (23.33%) enjoyed reading comprehension tasks, while 23 students (76.66%) did not appreciate them. Additionally, the results revealed that 21 students (70%) felt anxious when dealing with reading comprehension tasks. The first three questions aimed to identify the participants' attitudes towards reading comprehension. Based on the table, 22 students (73.33%) believed that reading comprehension tasks needed innovation, and 19 (63.33%) thought incorporating technology would benefit. Therefore, the participants were open to using digital tools in their reading tasks. When asked about on-screen reading, 22 students (73.33%) found it easier than on-paper reading. Of course, 25 students (83.33%) were familiar with online annotations since they had used them in the classroom. Moreover, 18 students (60%) found online annotations to be effective, and 16 students (53.33%) enjoyed using them. Finally, 25 students (83.33%) believed that online annotations facilitated their reading comprehension tasks

Table 1
Students' Questionnaire Results

Question	Answers			
	YES	Percentage	No	Percentage
1. Is reading easy?	18	60%	12	40%
2. Do you enjoy reading comprehension tasks?	7	23.33%	23	76.66%
3. Do you feel anxious when dealing with reading comprehension tasks?	21	70%	09	30%

4. Do you think that reading comprehension tasks need innovation?	22	73.33%	08	26.66%
5. Do you think integrating technology would be advantageous?	19	63.33%	11	36.66%
6. On-screen reading is easier than on-paper reading?	22	73.33%	08	26.66%
7. Are you familiar with online annotations?	25	83.33%	05	16.66%
8. Are online annotations effective?	18	60%	12	40%
9. Do you like using online annotations?	16	53.33%	14	46.66%
10. Do online annotations facilitate the reading comprehension tasks?	25	83.33%	05	16.66%

During the study, an observation was conducted in the classroom where online annotations were used for reading comprehension sessions. The results are presented in figure n°1. The observation results showed that the students became more actively engaged in the reading comprehension tasks when using online annotations. This was because they could focus on understanding the digital text and completing the assignments. The use of online annotations also seemed to increase the participants' motivation as they could use innovative tools and technology. Overall, online annotations improved the students' active engagement, concentration, and motivation in their learning process. Additionally, the students could add remarks, highlight key ideas, add pictures, and link concepts and ideas while using online annotations, which helped reinforce their understanding. This also allowed the students to rely on themselves rather than their teacher, promoting self-reliance and autonomy. The students could interact with their teacher, share their understanding and thoughts, and create a positive atmosphere in the classroom.

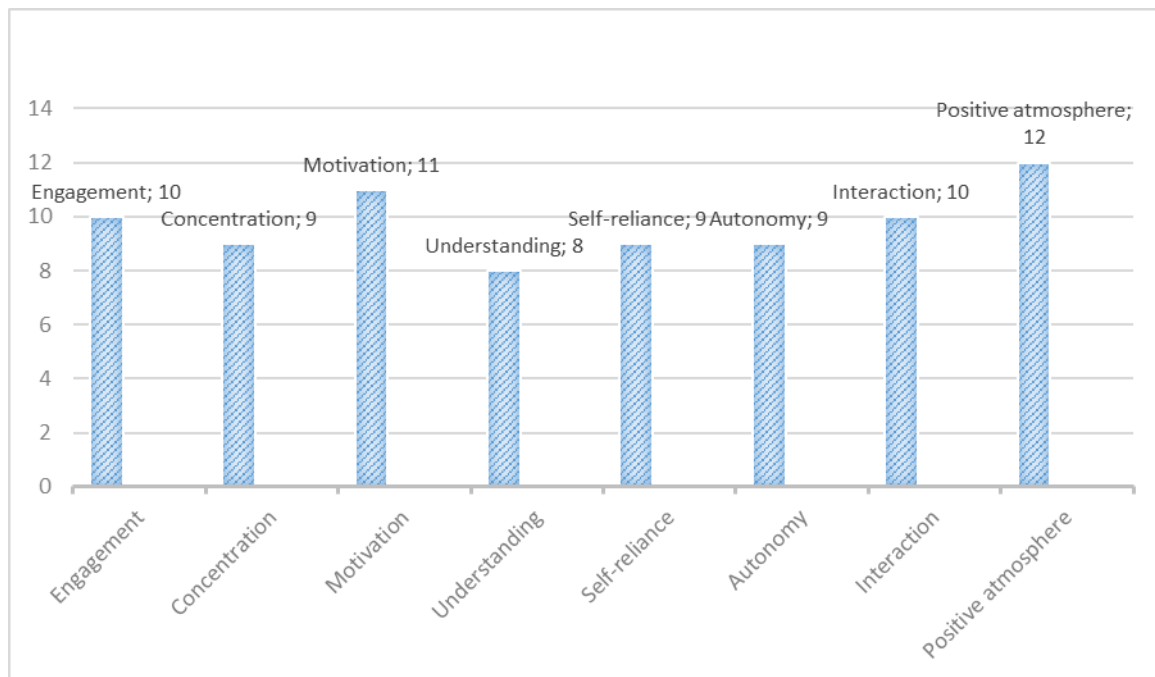


Figure1. Classroom Observation Results

Finally, as part of the study, five teachers were interviewed to gather their opinions on using online annotations to improve reading comprehension for EFL learners. The findings in Table 2 indicate that teachers feel reading comprehension needs adequate attention regarding strategies and tools and that reading pedagogy needs to be reconsidered. While teachers agree that incorporating technology can be motivating and effective for learners with different styles, they also believe that on-screen reading cannot replace traditional paper reading. The most straightforward reading style depends on the reader's circumstances, level, and purpose of the assignment. Nonetheless, teachers find online annotations to be popular, motivating, and innovative, as they engage learners through multimodal devices and make the reading process more interactive and engaging.

Table 2

Teachers' Interview Results

Question 1	Do you believe that the prevailing pedagogy of reading comprehension is flawless?
Teacher 1	Teachers do not follow a particular teaching method for reading comprehension.
Teacher 2	Reading comprehension is neglected and needs reconsidered in terms of methods, strategies, tasks, and tools.
Teacher 3	This needs to be reviewed.
Teacher 4	Reading comprehension is given less important than deserved in terms of pedagogy and strategies.
Teacher 5	It necessitates re-examination.

Question 2	Can the integration of digital tools enhance EFL learners' reading comprehension?
Teacher 1	Many students find reading a complex task they do not enjoy. Therefore, technology can motivate them.
Teacher 2	Absolutely! Technology effectively addresses many teaching challenges, particularly those involving intricate assignments.
Teacher 3	There are different apps available that may help with improving reading comprehension.
Teacher 4	Yes, technology can enhance students' different skills including reading comprehension.
Teacher 5	Of course!
Question 3	Is on-screen reading easier than on-paper reading?
Teacher 1	It depends on the circumstances, level, and purpose.
Teacher 2	Reading on paper may not be tiring, but reading on a screen can offer helpful tools for the reader.
Teacher 3	Depending on the readers' styles and preferences.
Teacher 4	I do not possess any discernible predilections; however, it is worth noting that perusing written materials does not pose a threat to one's visual faculties.
Teacher 5	On-screen reading is easier and motivating.
Question 4	Have you come across the concept of online annotations?
Teacher 1	Yes, of course!
Teacher 2	Yes!
Teacher 3	Certainly!
Teacher 4	Yes!
Teacher 5	Of course!
Question 5	Do online annotations facilitate the reading process?
Teacher 1	Definitely!
Teacher 2	Yes, online annotations are really helpful.
Teacher 3	To some extent!

Teacher 4	It is true that online annotations are helpful.
Teacher 5	I encourage online annotation use because they facilitate reading comprehension tasks.
Question 6	If yes, in what way do online annotations contribute to the development of students' reading comprehension?
Teacher 1	Making notes, emphasizing essential concepts, and utilizing additional materials can significantly aid understanding.
Teacher 2	Online annotations are a unique and inspiring way to learn. As a result, students are eager and willing to use them, leading to increased engagement in the learning process.
Teacher 3	Online annotation represents multimodal tools for enhancing reading comprehension. Therefore, such multimodal tools will activate the learners' different learning styles and engage them in the learning process.
Teacher 4	You can add text, pictures, videos, and audio. Therefore, such tools can enhance understanding.
Teacher 5	Online annotations are tech tools; thus, the students are glad to use them. Moreover, online annotations engage the reader in the reading task.

According to the findings from the student questionnaire, classroom observation, and teacher interviews, online annotations have proven to be effective in facilitating the reading comprehension process. These multimodal tools enable adding comments and pictures to clarify meaning, link ideas, and explain concepts, ultimately reinforcing understanding. By integrating students within the digital text, online annotations eliminate detachment from the text and provide motivation while breaking the routine. Additionally, teachers and students have shown a positive attitude towards integrating online annotations to enhance their reading comprehension.

5. Conclusion

Reading is a crucial foundation for language learning, as it helps learners develop their grammar and vocabulary skills. To improve reading abilities and overall language proficiency, EFL educators should use effective strategies and tools. In this regard, it is essential to explore the impact of digital tools on EFL learners' reading comprehension. The current study focused on integrating technology into reading tasks, for instance, by incorporating various online annotation styles to support reading. It sought to determine how much these online annotations can enhance the reading comprehension process. To conduct this research, we utilized various tools, including

a questionnaire, classroom observation, and interviews. Our study involved 30 second-year EFL students and 5 teachers as participants. Based on the results of the student questionnaire, classroom observation, and teacher interviews, we found that online annotations are effective in facilitating the reading comprehension process. These multimodal tools allow adding comments and pictures to clarify meaning, link ideas, and explain concepts, ultimately reinforcing understanding. In summary, using online annotations in the classroom can integrate students, boost their motivation, and enhance their reading comprehension skills.

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7. Appendices

Appendix A Students' Questionnaire

Dear students,

This questionnaire is an integral part of a research article that focuses on analyzing the impact of online annotation on students' reading comprehension in EFL learning settings at the University of Badji Mokhtar Annaba. We kindly ask your collaboration in filling out these questionnaire forms to aid in our research. Your cooperation is greatly appreciated.

Question	Answers	
	YES	No
1. Is reading easy?		
2. Do you enjoy reading comprehension tasks?		
3. Do you feel anxious when dealing with reading comprehension tasks?		
4. Do you think that reading comprehension tasks need innovation?		
5. Do you think integrating technology would be advantageous?		
6. On-screen reading is easier than on-paper reading?		

7. Are you familiar with online annotations?		
8. Are online annotations effective?		
9. Do you like using online annotations?		
10. Do online annotations facilitate the reading comprehension tasks?		

Appendix B

Classroom Observation Checklist

Observation		
	✓	x
1. Students' engagement		
2. Students' concentration		
3. Students' motivation		
4. Students' understanding		
5. Students' self-reliance		
6. Students' autonomy		
7. Students' interaction		
8. Classroom atmosphere		

Appendix C

Teachers' Interview

1. Do you believe that the prevailing pedagogy of reading comprehension is flawless?
2. Can the integration of digital tools enhance EFL learners' reading comprehension?
3. Is on-screen reading easier than on-paper reading?
4. Have you come across the concept of online annotations?
5. Do online annotations facilitate the reading process?
6. If yes, in what way do online annotations contribute to the development of students' reading comprehension?