

## **The Impact of E-Learning on Reading Comprehension in High School Students**



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**ABSTRACT:** The purpose of this study was to determine the effect of using e-learning on reading comprehension among high school students in learning English. The quantitative approach used in this study was developed using a quasi-experimental approach. The method used in this study is quasi-experimental. The data analysis technique used in this study is to compare the two groups which are calculated statistically. As a result of the analytical test, the effect of e-learning on reading comprehension of the control group and experimental high school students was recognized at the 5% significance level ( $0.000 < 0.05$ ). The data shows that reading comprehension increases in the experimental class that applies e-learning. This study concludes that reading comprehension in learning English is better in the experimental group than in the control group. The use of e-learning has a positive influence on reading comprehension for high school students.

**KEYWORDS:** E-learning, reading comprehension, evaluation, high school, foreign language

### **I. INTRODUCTION**

E-learning strategies (a term widely used) have been widely adopted by educators around the world (rohwer, 2017). E-learning can be defined as the delivery of training materials through information and communication technology (ict), including the internet, cd-rom, dvd, smartphone, and other media, inside and outside the classroom (kai ruggeri, 2013), (seble frehywot, 2013). online learning can support active learning without the barriers of space and time. with e-learning, content can be managed through various learning activities and the quality of teaching can be improved. for example, learning management systems (lms) can influence student engagement with the environment, change collaboration and communication, and facilitate access to learning materials.(esin ergün, 2020).E-learning has also introduced important innovations in 21st-century educational environments, benefiting from web-based communication, collaboration, multimedia, and information transfer (hediyeh motaghian, 2013). As a final point, it is clear, the usefulness of using e-learning mentioned above can be evaluated with the use of reading comprehension teaching and learning process. reading comprehension is a complex process for efl students (yakuta, an experimental study on the effects of the use of blogs on efl reading comprehension, 2015). Reading comprehension is also considered a very complex skill, involving lower-level processing involving "automatic" word recognition and higher-level processing than readers gathering clause-level information into one. Understand their text schemes and construct appropriate text interpretations. their goals, attitudes, and basic knowledge dan (maryam babapour, 2018) confirm that reading comprehension is a key skill that can influence learning outcomes and subsequent language development.

Reading comprehension is important to remember because paying attention to the meaning of a message is as important as paying attention to language forms (Labrozzi, 2014). Powered by (Calet, 2019), reading is one of the most important transverse skills for success in school and society. Reading comprehension is a process of simultaneous extraction and construction of meaning through interaction and engagement with written language (Rassaei, 2015). (Barbour, 2019) define reading comprehension as a complex cognitive process in which the reader's prior knowledge and experiences play a central role in the interpretation of the text. (Sofyan A. Gani, 2016), reading comprehension is a process of constructing complex, cognitive meaning, it implies the interaction of the reader, text, and context. Reading comprehension according to (Gough, 1986) involves the interpretation of lexical information (ie words), phrases, and idioms. A good understanding of the text requires consistent representation of the text in memory (Machida, 2011). Vocabulary knowledge plays an important role in EFL reading comprehension (Zhang, 2015)

People use various technological devices such as computers and mobile phones to communicate and interact with other people. The use of technology has made communication and collaboration more convenient and affordable than ever before. In this context, e-learning has been increasingly used in the educational environment, especially in the last two decades. From this perspective, it appears that Collaborative Learning Theory (CLT) supports e-learning to increase collaboration between students. In e-learning media, academic literacy theory supports the claim that learning literacy skills through the use of learning

## The Impact of E-Learning on Reading Comprehension in High School Students

management systems can lead to increased student achievement (Fageeh & Mekheimer, 2013). In short, students develop their academic writing skills by understanding and practicing socially placed academic knowledge in e-learning situations. In line with this, (Warschauer, 1997) explains that understanding the role of e-learning and networked education reveals the socio-cultural relationship between text, language, and learning. According to him, foreign language learners use language-related collaboration in an e-learning environment (a) to become competent members of a community or social group, (b) to acquire cultural knowledge or important content, or (c) to advance themselves. Reading or critical thinking skills. Warsaw notes: "Sociocultural perspectives, stemming in part from Vygotsky's concepts (Vygotsky, 1978), emphasize the role of social interaction in creating an environment for language learning and learning. Language and learning "through" language" (Warschauer, 1997, p. 471)

The rapid development of technology is inevitable. As consumers, people must be able to adapt to the speed of technological development. If not, what is certain is that the incoming information lags behind the complexity of the information. Not only is information lost, but technological sophistication affects the way we think. The world of education is one of the main fields that are influenced by technological developments. This is reflected in the shift in the use of learning media from traditional models to online learning media. For this reason, schools continue to strive to improve the quality of learning by using online media. The development of technology in the world of education is very useful for educators. The utilization of learning technology is intended to increase student motivation and achievement. As lesson planners, educators must be able to design lessons with different types of learners. The right means of communication and learning resources make the learning process effective and efficient.

The statement above emphasizes the need for e-learning-based learning. As a result of e-learning for high school English subjects, we aim to commercialize teaching materials, namely learning media, especially those related to understanding Basic English and understanding textbooks. There is evidence that e-learning-based learning has improved the quality of learning for both teachers and students. This is supported by Rapi (2016)'s research, which shows that students who use interactive media have better performance than students who use traditional learning methods. Technological innovations and data communication follow the development of the use of the internet and web technology. Many applications and information systems are based on Internet technology. This situation facilitates things like distance learning and e-learning. E-learning is a new way of learning that has emerged as a result of advances in technology, information, and communication. E-Learning is a web-based electronic media that applies to computers connected to local and global networks, such as computer laboratories. Using e-learning in learning.

Processes developed as improvements in technology and information. Purbo (2002) explains that e-learning is a form of information technology that is applied in the education system in cyber schools. E-learning is used in all educational activities that use computers and the internet. This is in line with Purbo's view that e-learning is a new learning paradigm that uses the internet. E-learning is not limited by space and time as stated by min-lin (2014). Plus, it also offers a variety of interactions so you can host a traditional class. This concept is also supported by the argument put forward by Rohendi (2012) which states that e-learning is a transformation from conventional to digital both in terms of content and system. Today, computer technology is not only used for computer science and word processing, but also as a medium used for multimedia that allows students to create projects and other concepts in engineering and science. Multimedia computer means technology that optimizes the role of the computer as an infrastructure for displaying and manipulating text, graphics, and audio in one integrated display. By displaying and combining many elements that convey information and messages, computers are designed to be used as an effective technology medium to be used as a learning tool and delivery of relevant learning materials such as graphic design and animation. Conceptual visualization is very useful for making abstract and theoretical concepts concrete. Many studies show the benefits of visualization in the form of images, animations, simulations, and videos in the learning process (Kirna, 2014), computer media can visualize learning materials to be more concrete.

As one of the language skills, understanding written texts or being able to read is a stepping stone in a student's education. The dictionary definition of "reading comprehension" is the ability to understand a written text and understand its content. The main concept of reading comprehension is "comprehension". It is highly appreciated by students and teachers as it enhances the language-learning process and helps students read for various purposes. The most successful readers are those who use cognitive strategies to better understand the text. According to (Poorahmadi, 2010) research on reading comprehension, teachers should focus on the types of tasks and activities that help students complete homework together. (Salimzadeh, 2009) conducted an empirical study of the usefulness of tasks and activities for reading comprehension and found that cooperative reading activities such as group paraphrasing were effective for intermediate-level text comprehension. In his study of the role of shared reading, (Behjat, 2011) stated that language learners can improve their understanding when they participate in activities that encourage shared reading. Modern technology is radically changing global communication and has a profound impact on all aspects of language use. Computers and internet technology allow hypertext and hypermedia to play a role in understanding foreign languages. Understanding hypertext can be difficult, but reading comprehension and strategies can help you overcome this problem. The advantage of reading hypertext on the internet is that students have access to authentic material. This is one of the main goals of many language learners. Being able to read what is commonly referred to as real text. In their research, (Wang, 2010) show how hypertext networks can be used to help language learners better understand texts.

## The Impact of E-Learning on Reading Comprehension in High School Students

Rahimi and Behjat (in press) conducted an empirical study of Iranian EFL students' online and offline reading comprehension when confronted with an online text with links to other websites that offer more reading material. They concluded that students' reading comprehension was promoted to a higher level. According to (Szymańska, 2011), to be able to read well in a foreign language, students need to access online texts that honestly respond to what they read.

So there is a sequence of related and interdependent developments. Students often carry skills and declarative knowledge from one skill to another to facilitate the growth of other skills (Strang, 1972). Previous research has also shown literacy skills. Listening comprehension in foreign language learners can be used for writing skills (eg Strickland, 1964; Loban, 1963; Ruddell, 1966; Thomas, 1974; Cayer and Sacks, 1979; Mekheimer, 2010).

The results of this study are also following the existing literature on the role of online learning media in promoting literacy. (Previous research emphasized the types of argumentative reading and writing tasks students expect in literacy development and other impact areas.) (Bridgeman, 1984);(Casanave, 1992);(Zhu, 2001, 2004). In summary, it can be stated that the integration of reading skills into discussion text processing from online learning media significantly improves student performance in the experimental group. The results of this study support the idea that teachers need to harness the potential of the classroom and develop appropriate teaching activities that practice reading and writing together, 2003" (Parodi, 2003). These results also bring up important strategies for cohesion and coherence. Produce coherent writing, so students should be taught to write parts of a text as a semantic unit rather than a lexical structure and to tackle writing assignments as a whole from the start. The results of the development of appropriate science and technology to support the subjects taught. The provision of classrooms and infrastructure is believed to be able to facilitate the teaching and learning process and encourage the achievement of educational goals. The purpose of this study was to identify and analyze the effect of e-learning on the reading comprehension of high school students. In addition, the purpose of this study is to provide guidelines and an instructional framework for the use of online learning and reading comprehension in research that can be used as a reference to guide the learning process.

## II. METHODS

This research is quasi-experimental design research with non-equivalent control groups, using class as a group and choosing a class that assesses the same conditions (homogeneous). The subjects of this study were students of high schools, totaling 136 students, which were divided into two groups, namely the experimental class and the control class. The experimental class consisted of two classes, each with 34 students, and the control class consisted of two classes, each with 34 students, using the cluster random sampling technique (Fraenkel, 2006). This choice is thought to be due to the inability to conduct this study using a random or haphazard approach and the class does not have uniform skills in carrying out learning (Louis Cohen, 2011).

Two categories of independent variables used in this study are e-learning and reading comprehension as the dependent variable in this study. Analysis of the data used in the study using a t-test to determine the difference between the two samples.

## III.RESULT AND DISCUSSIONS

The results of data analysis in table 1 show that the average reading comprehension of students taught by e-learning is 72.34 better than students who are taught by conventional learning. Table 2 shows that the significance (2 tails) on the t-test for Equivalence of Means shows 0.000 (<0.05) can be the key to the effect of e-learning on students' reading comprehension in high school.

**Table 1. Average reading comprehension**

	Reading_C	
	Group	
	E-learning	Conventional
N	68	68
Mean	72.43	55.22
Std. Deviation	8.034	11.178
Std. Error Mean	.974	1.356

**Table 2. Independent Samples E-Learning results on reading comprehension**

		Reading_C	
		Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F	17.822	
	Sig.	.000	
t-test for Equality of Means	t	10.307	10.307
	df	134	121.640

## The Impact of E-Learning on Reading Comprehension in High School Students

	Sig. (2-tailed)	.000	.000
	Mean Difference	17.206	17.206
	Std. Error Difference	1.669	1.669
	95% Confidence Interval of the Difference	Lower 13.904	13.901
		Upper 20.508	20.511

The results showed that the use of reading comprehension had a significant and positive effect on students' performance and reading comprehension. Regarding the first research question, research analysis shows that highly literate students achieve better learning outcomes than their highly literate classmates. You will find that each level of the Reading Framework supports a monitoring and control process where the Reading Support Framework suggests that students set learning goals and plan course activities based on those goals. In addition, this environment allows beginners to create their lesson plans, use their reading comprehension to monitor the learning process, assess their actual learning level, modify strategies if necessary, and study each lesson as they are ready. You can complete the lesson. We will provide an evaluation form for you to give your final evaluation. This activity helps to actively support the reading comprehension that is perceived and perceived by the learner as an information processor when he is involved in learning in his learning environment.

Our results suggest that an e-learning environment can have a positive effect on learning outcomes, and this effect is especially beneficial when structured to improve reading comprehension. Second, they show that e-learning can promote better metacognition and learning outcomes even without improving reading comprehension. To understand why this is so, we can rely on the results of further analysis. The research presented emphasizes that e-learning and reading comprehension tend to have a reciprocal relationship. Indeed, we have found research showing that e-learning can promote reading comprehension and therefore help explain why online activities affect learning outcomes (i.e. can stimulate reading comprehension). There are several explanations for why this could be. For example, they can promote greater motivation to learn, which in turn is linked to the importance of reading comprehension strategies (Klein et al., 2006). Motivation contributes to reading comprehension. Acquiring reading strategies and comprehension skills takes a lot of effort and motivation, and it is clear that good teachers spend a lot of time and energy motivating and supporting their students' reading comprehension skills. Therefore, the process of information that they read frequently for cognitive purposes motivates students to acquire reading comprehension (Guthrie, 2004). Motivation and reading skills go hand in hand, and students find that learning needs to be practiced and supported. With motivation in mind, students become independent learners who can learn independently inside and outside the classroom without teacher supervision. Language acquisition through e-learning has been observed to outperform traditional classrooms in the technological era (Farooq, 2012). Recent advances in the Internet and web-based technologies have redefined the boundaries of distance learning and pedagogy by broadening the reach and increasing the interconnectedness of distance learning. Bringing together experts and novices from around the world, and using global resources (Dabbagh, 2005). e-Learning, like all instructional technology delivery environments, must be rooted in an effective framework for teaching and learning. e-Learning has many advantages over traditional learning. One of the advantages is that the learning method is more adaptive than traditional learning (Budi Santoso, 2007). In the digital world, e-learning is increasingly popular among students. Because attention should be paid to the problem of learning in the e-Learning environment. In addition, e-Learning pays attention to the principles of instructional design and leverages the Internet and digital technologies to create an electronically mediated, well-designed, more streamlined, and interactive learning environment anytime, anywhere. This is an innovative approach that works for everyone. (Hedge, 2004) ; (Gabarre, 2014) ; (Thang, 2016).

Blended learning provides an integrated platform for online and traditional learning. An important part of blended learning is electronic support through eLearning. Teachers should prepare students for mixed learning styles and discuss new roles and responsibilities. (Teeley, 2007) and (Brunner, 2007) believe that blended learning can help institutions replace traditional classroom instruction with online learning by providing students with relevant and meaningful content while maintaining student-teacher relationships. You agree to provide flexibility for participation in your studies. The focus of blended learning is on improving student performance and retention.

It offers more flexibility in timing, availability of multiple learning modes, a deeper sense of community, and more interaction. In addition, (Senior, 2010) suggested that teachers should focus on broader educational outcomes, virtually augment classrooms through technology, and focus on students' interests, needs, experiences, and goals. I emphasize that (Alexander, 2001) shows that the use of e-learning by students produces seven positive learning outcomes: Solving problems while acquiring information technology literacy in the process. (2) Develop a better understanding of concepts that students know to have difficulty with in various disciplines through the use of interactive multimedia animations, simulations, and microscopic worlds; (3) developing information and technology literacy in the context of learning to solve real-world problems using databases and e-mails; (4) improved communication between part-time students and their instructors through the use of computer-based conferencing tools over the Internet; (5) Information acquisition such as language learning which requires high factual memory elements. (6) acquire skills and knowledge in certain areas of the culture used in workplace organizations; Through participation



## The Impact of E-Learning on Reading Comprehension in High School Students

in simulations via the Internet. (7) facilities for students to assess their conceptual learning through computer-based qualitative and quantitative assessment modules.

### IV. CONSLUSIONS

E-learning provides opportunities for students to learn and practice assignments. Initially, this teaching method also motivated him to improve his reading comprehension. Several studies have been conducted on motivation, showing a relationship between levels of motivation and performance. All researchers agree on the effect of motivation on language learning ((Dornyei, 2005), (Ehrman, 2003); (Graham, 2004); (Semmar, 2006); (Masgoret, 2003); (Yang, 2016); (Khaloufi, 2017). Therefore, this teaching approach allows students to achieve their learning goals and gain freedom in learning. They also learn on their own without the guidance of a teacher. This teaching method allows students to learn independently and promotes a student-centered attitude. This is following the research of (Hedge, 2004), (Nwokike, 2010). E-learning is an important factor for teachers to consider when designing courses. In addition, students are emphasized to create an online learning environment, making interaction with teachers much more important than usual.

Conventional learning is where the teacher is invisible. Studies by (Zhong, 2008) and (Tsai, 2008) show that learners become independent using the Internet or online learning, that several favorable factors influence this process, and that a more constructivist approach to education We also agree that we prefer online learning environment that employs law. Finally, students want technology to be used in teaching all subjects, including Language courses. online and e-learning. This is following the opinion of (Alu, 2011) that e-learning uses information and communication technology (ICT), including computer networks, communications, and cellular technology, to enhance and enhance learning. These technologies help make education and information available and accessible to all who need it.

In addition, this study can also recommend the following for further research: Studies should be carried out in other English skills such as writing, speaking, and listening. Similar research should be conducted involving students from other educational levels and disciplines. New teaching methods are needed. Comparative studies need to be conducted to compare teaching methods using e-learning with other teaching methods or approaches. Such as web-based learning and collaborative online learning. According to the students' suggestions from the interviews, they were satisfied with the e-learning learning method. This research will be conducted in other subjects, such as English for tour guides, mathematics, and general education subjects. This program allows us to practice teaching, motivate self-study and enhance learning. It provides an experience and atmosphere that promotes autonomous and student-centered learning.

The results of this study are also following the existing literature on the role of online learning media in literacy development. (Previous research has highlighted the types of argumentative reading and writing tasks students expect in literacy development and other impact areas.) (Braine, 1994; Bridgeman, 1984; Casanave, 1992; Zhu, 2001; 2004). In summary, it can be said that the integration of reading skills into discussion text processing from online learning media significantly improves student performance in the experimental group. The results of this study support the idea that teachers need to harness the potential of the classroom and develop appropriate educational activities that practice reading and writing together, 2003" (Parodi, 2003) . These results also provide important strategies for cohesion and coherence. To produce coherent sentences. , students write parts of the text as a semantic unit rather than a lexical structure and do the entire writing assignment from scratch.

Therefore, e-learning offers great added value in the learning process. Electronic learning is convenient for both teachers and students. Learning can happen anytime and anywhere. e-Learning is a learning tool designed to facilitate students' independent learning. Learners also have the opportunity to learn at their own pace and time. In addition, it helps students deepen their knowledge of the Internet. All this shows that e-learning can be beneficial for businesses, educational institutions, teachers, and students.

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## The Impact of E-Learning on Reading Comprehension in High School Students

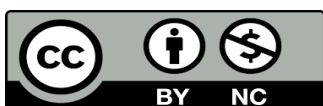
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## The Impact of E-Learning on Reading Comprehension in High School Students

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