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Improving EFL Reading Comprehension Skills andEngagement of Secondary Stage Students byUsing Glogster Technology

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Journal of The Faculty of Education- Mansoura University
No. 120 – Oct . 2022

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Abstract

This research aimed at studying the impact of the Glogster technology on improving EFL secondary stage students' reading comprehension skills. The participants of this research were (60) first year secondary stage students at Al-Zohoor school, Buraydah, Al Qassim, Saudi Arabia. The research adopted the quasi-experimental design using two groups: an experimental group (n= 30) and a control one (n= 30). To collect data, the researcher used two instruments: an EFL reading comprehension skills test and reading engagement scale. The researcher taught both groups: the experimental group was taught through the Glogster technology, while the control group was taught through the regular method of teaching. Research results revealed that there were statistically significant differences between the mean score of the experimental group and the control group in the EFL reading comprehension skills test in favor of the experimental group. Moreover, the effect size of the Glogster technology was found to be high. Thus, this research recommended using Glogster technology as a useful strategy in teaching the reading comprehension skills of the English language at different educational stages.

Key words: *Reading comprehension skills, reading engagement, Glogster technology, EFL*

Introduction

English is an important language and is considered the most commonly used language all over the world so it has an impact on every field of work. Because of that, English is taught in most Arab countries to provide educational opportunities that will allow each student access to any information in this speedy development in science and technology.

Reading is an important skill in understanding English. Reading comprehension can be broadly defined as the process of constructing meaning by coordinating a number of complex processes that include language, word reading, word knowledge and fluency (Cain, Oakhill, & Bryant, 2004; Paris, 2005; Perfetti, 2003). Reading comprehension involves

decoding, fluency, vocabulary knowledge, knowledge of the ways text are organized, and strategies for fostering and monitoring comprehension.

Liu (2010) stated that the reading skill can be described as a cognitive ability used by the readers when interacting with texts. He clarified that reading involves some sub-skills such as; scanning, skimming, making predictions, guessing the meaning of new words, inferring, understanding text structure and discourse markers, reading for gist, reading for details, making summaries, etc. It was also added that, especially secondary stage students, need to practice all these reading sub-skills to master English and achieve academic success.

There are several problems, challenges and difficulties that encounter students in reading comprehension such as; lack of familiarity with their vocabulary items, lack of speed reading, lack of cooperative learning in reading instruction, the learner's memorization of reading passages and their related questions due to the difficulty of these passages, many students skip the reading comprehension passage while other students write the questions without answering them or answer most of the questions incorrectly, lack of the necessary reading comprehension skills that can help them answer the questions appropriately and the in effectiveness of some teacher's teaching methods.

Fortunately, Web 2.0 or second generation World Wide Web has brought about changes in the use of Web sites. Unlike Web 1.0, which was mainly content-based, Web 2.0 allows for more interactive collaboration from Internet users, who can now generate, link, evaluate, transform and share online content through blogs, wikis, and social networking sites. In the field of teaching and learning Web 2.0 tools offer enormous potential for teachers and students, as they can make an impact on students' learning by transforming and enriching content. The key to such transformation is engagement (Ormiston 2010: 3), which goes alongside teachers' work to stimulate their students, together with technology used as a tool to "facilitate learning in new, active, engaging and collaborative ways" (2010: 39).

Review of Literature and Related Studies

Reading Comprehension

Reading Comprehension can be described as a process of making reasonable interpretation in apprehending a text which has four characteristics; purpose, selection, anticipation, and comprehension. Talking about comprehension is one of the characteristics of reading. Richards and Schmidt (2002) stated that comprehension is the identification of the intended meaning of written or spoken communication. They also added

that contemporary theories of comprehension emphasize that it is an active process drawing both on information contained in the message (bottom-up processing) as well as background knowledge, information from the context and from the listener's and speaker's purposes or intentions (top-down processing).

Mikulecky and Jeffries (2004) stated that comprehension is making sense of what someone reads and connecting the ideas in the text to what he already knows. According to Smith, comprehension may be regarded as relating aspects of the world around us— including what we read—to the knowledge, intentions, and expectations we already have in our head. It is clearly the purpose of reading and of learning to read. Hedgcock and Ferris (2009) added that reading is a complex interaction of cognitive processes and strategies (used by the reader) and various types of information (contained in the text). Some researchers view reading as a cognitive, developmental, and socially constructed task that goes beyond understanding the words on a page.

Reading stages

Grabe & Stoller(2002) outlined two levels of the reading process. The first process is Lower level which involves memory activation, lexical access, syntactic parsing and semantic formation. The second process is the higher level which includes background knowledge, inferencing, text model of comprehension, and a situation model of reader interpretation.

According to Nunan (2003), through the reading process, readers and writers interact via text. This reflects that readers extract meaning from the text and reconstruct it by combining information existed in the text and their prior knowledge.

Tompkins (2011) represented the process of reading through five stages. Pre-reading, reading, responding, exploring and applying. First, the pre-reading stage, in this phase students set purposes and make predictions and counsel the index to find information. The goal of this stage is to build connections and make text more comprehensible. Second, the reading stage, through the reading stage the learners are relied upon to make expectations, apply skills and methods, read all text, read for specific information and take notes. Third, the responding stage, the students are expected to write in a reading log and take part in instructional discussions. Fourth, the exploring stage, this stage includes more thinking about the content, making connections with individual experiences and learning new vocabularies and participating in mini lessons on reading. Finally, in the applying stage, students are able to construct projects, use information in thematic units,

connect with related books, reflect on their interpretation and value the reading experience.

Reading Comprehension skills

The aim of studies concerned in reading comprehension skill is to enhance and improve students' reading comprehension skills and to determine the reading sub skills and identify which of them to enhance more. According to Harmer (2001) identified some skills, which the reader uses to process a reading text. These skills differ from text to text and according to the types of questions. He mentioned the following reading comprehension skills, identifying the topic this skill depends on the reader's schemata about the topic. It allows the reader to understand the text quickly. Predicting and guessing when the reader identifies the topic, he/she tries to predict what is going to happen and guess the meaning of new words efficiently depending on his/her schemata.

Mikulecky (2008) asserted that reading skills are the cognitive processes which a student uses in making sense of a content. For fluent readers, most of the reading skills are employed unconsciously and consequently. Fluent readers apply these skills consciously and strategically in order to comprehend. Moreover, she listed a long list of reading comprehension skills. The most important among these skills are automatic decoding, previewing and predicting, stating the main idea, recognizing and using pronouns, identifying the meaning of difficult words from the context, paraphrasing, drawing conclusions, and summarizing.

Reading Comprehension Models

Reading comprehension is a dynamic and interactive process. Thus, Johnson (2008) contradicted the opinion saying that reading is a receptive (passive) skill. He believed that it was a "self-evident" one. He clarified that reading is a "highly active" process, and tried to understand what procedures readers follow while trying to understand a written text. Liu, Zhu and Nian (2010) divided the reading comprehension models into bottom-up model, top-down model and interactive model. **In the bottom-up processing,** the text is a group of words and sentences. The reader builds his/her interpretation of the whole text gradually from the words and the sentences in the text. Psychologists sometimes call this process as "data-driven processing". **Top-down processing** is known as concept-driven model. During the reading process, the reader integrates his/her previous knowledge and the language knowledge with the text information. In this model, comprehension proceeds from top to bottom (Gascoigne, 2005). **Interactive model** depending on the bottom-up alone or the top-down alone

does not explain completely the process of comprehension. Thus, there should be a sort of interaction between the two models. In this interactive model, all types of knowledge; orthographic, lexical, syntactic and semantic work simultaneously to improve word identification (Donoghue,2009).

Studies Related to Developing Reading Comprehension skills

Many studies investigated the use of technology to develop EFl students' Reading Comprehension skills. Some of these studies are illustrated as follows:

El-Marakby (2017) aimed at investigating the effectiveness of using some online peer-assisted learning strategies (OPALS) for developing prep stage students' EFL reading comprehension and their self-esteem. Forty four students from Future Language Schools, East Tanta Educational administration were selected as participants of the study. The tools of the study included OPALS checklist, a reading comprehension test (pre &post) and a self-esteem scale (pre &post). Results of the study concluded that online peer-assisted learning strategies were effective to develop the second year prep students' reading comprehension skills and enhanced students' self-esteem.

Basyouni (2018) investigated the impact of using online reading strategies to enhance efl secondary stage students' reading comprehension skills and their attitude towards reading. The study adopted the quasi-experimental design. The study sample consisted of sixty two participants from four classes at Kafr El-Sheikh Science, Technology, Engineering, and Mathematics (STEM) School. The participants were divided into two groups; an experimental group and a control group. Each group encompassed thirty one students. The study results proved to be a significant statistical difference between the mean score of the experimental group and that of the control group on the post administration of the test in favor of the experimental group.

Hassan (2019) investigated the impact of a proposed online self - regulation based vocabulary learning program on developing secondary stage students' EFl reading comprehension skills and reading speed. The sample of the study consisted of 60 EFL first grade secondary school students. Results of the study revealed that the proposed program led to significant improvement in the first grade secondary school students EFL online reading comprehension skills as well as their reading speed. A number of recommendations concerning the use self – regulation strategy training, vocabulary strategy training, online reading comprehension and online reading speed were presented.

Student Engagement and Reading Comprehension

Reading with comprehension involves significant levels of engagement that include the active processing and construction of meaning from text; thus, students are able to create a coherent representation of what they read (Kintsch, 1998). Educational research has increasingly focused on the construct of student engagement and its contribution to academic success (Fredricks, Blumenfeld, & Paris, 2004). This interest in engagement is driven by the desire to improve student learning since the more academically engaged students are, the higher their achievement tends to be (Reschly & Christenson, 2012).

Nature and Dimensions of Engagement

There are multiple definitions of engagement. In the most general sense, engagement is the involvement, participation, and commitment to a set of activities (Guthrie, Wigfield, & You, 2012). According to Reschly & Christenson,(2012) engagement is a multi-dimensional construct made up of three dimensions that include *cognitive, affective, and behavioral*. The dimension of behavioral engagement also includes a subtype of academic engagement.

Cognitive engagement:

Cognitive engagement is an investment in learning, the ability to self-regulate, and the ability to be strategic (Fredricks et al., 2004). A student who is cognitively engaged has an investment in his/her own learning, has a desire to go above and beyond what is asked of him or her, and is not opposed to taking on a challenge.

Affective engagement.

Affective or emotional engagement refers to one's reactions in the classroom, which includes their boredom, happiness, sadness, and/or anxiety (Connell & Wellborn, 1991). Students who are engaged emotionally have a sense of identification with school and a feeling of belonging (Willms, 2003). Students have various reactions to school, activities, teachers, and peers, which may be negative or positive (Lee, 2014). Students may like or dislike school or peers, or be interested or bored with tasks depending on their affective engagement.

Behavioral engagement.

Behavioral engagement is the involvement in learning that refers to the effort, persistence, and concentration toward academic tasks (Skinner & Belmont, 1993). Students who are behaviorally engaged follow rules, behave appropriately, and observe classroom norms (Finn, 1989; Finn & Rock, 1997). Additionally, students who have high levels of behavioral

engagement are effortful and persistent, and actively involved in their learning (Guthrie, Wigfield, & You, 2012).

Finally, engagement is a multi-dimensional construct made up of three dimensions that include cognitive, affective, and behavioral. Cognitive engagement is the ability to self-regulate, and the ability to be more strategic which make students' planning, monitoring, and evaluating their own learning. when students are cognitively engaged, they ask and answer questions to check their understanding, make predictions and inferences, and connect new information learned with what they already know.

Studies Related to engagement

Many studies investigated how to increase students engagement through new techniques. Some of these studies are illustrated as follows:

Guthri et al (2004) aimed at increasing reading comprehension and engagement through concept-oriented reading instruction. Based on an engagement perspective of reading development, they investigated the extent to which an instructional framework of combining motivation support and strategy instruction (—CORI) influenced reading outcomes for third-grade children. The class level analyses showed that students in Concept-Oriented Reading Instruction CORI classrooms were higher than Strategy Instruction and Traditional Instruction students on measures of reading comprehension, reading motivation, and reading strategies.

El-behairy (2019) aimed at developing EFL prospective teachers' reading comprehension skills (literal-inferential- critical- creative) via using some engagement strategies as well as exploring their satisfaction. Thirty two students enrolled in the third year, English Language Department, Faculty Education, Menoufia University, were the participants of this research. The researcher designed two equivalent versions of the EFL Reading Comprehension Test and an engagement strategies based model (the 6Cs model) was proposed to be used in an EFL reading comprehension class, and a questionnaire to explore the extent to which the participants were satisfied with using that proposed model. Findings revealed that using engagement strategies (the 6Cs model) was effective in developing EFL prospective teachers' reading comprehension skills. Participants showed high levels of satisfaction with using that model in their learning experience of reading**.**

Glogster Technology

While it is well understood that human interactions can promote motivation and deep learning, interacting with machines and digital artifacts can provide valuable outlets for learning as well. Researchers suggest that

learning rests in diversity of opinion and maintaining connections is needed to facilitate continual learning (Wang, Chen & Anderson, 2014). If students were encouraged to share ideas through online networks and research what other students have shared about a specific topic, optimal learning would take place.

Hillman, (2014) clarified that numerous studies have supported the idea that implementing technology into the classroom facilitates meaningful learning, greater use of prior knowledge, hierarchical cognitive structure, elaboration, greater depth of processing and innovative practice. The focus here is to create learning environment to be more student-centered and develop students' autonomy. It is important to consider how students will receive technology when implementing it into the classroom.

Today's students have access to a multitude of digital tools that enable them to be both consumers and producers of on-line content, including wikis, blogs, social networking sites, and social bookmarking tools. Collectively these tools are referred to as "Web 2.0" and can be defined as "digital tools [which] allow users to create, change, publish, and share in an open, collaborative, participatory environment" (Berger, 2007, p. 2).

Web 2.0 refers to the second generation of Web development and design that is more tailored to providing Web applications to next-generation internet users. It transforms static Hypertext Markup Language (HTML) Web pages into more dynamic Web pages which can be used to develop a collaborative virtual society for sharing information interactively and interoperable based on next-generation Internet access through cellular and handheld devices (O'Reilly, 2005).

Nature of Glogster

Glogster is a web 2.0 tool for creating online poster. It allows teachers to create online board consisting of pictures, audio and video through the website Glogster. Picardo (2012) stated that Glogster is an internet tool that allows users to create and share interactive posters composed of text, graphics, sound and videos. Glogster provides the opportunity for collaborative student centered learning and can be used in the classroom to create book reports, research projects, character analysis, historical timelines, and any other class or group projects. It is a creative way for students to present information beyond the typical written report (Martinez-Alba et.al, 2014). By using Glogster, teachers can present material in a creative way. It can help to attract the students attention and create innovative teaching performance.

Features & Characteristics of Glogster

Although digital posters may be initially time consuming to create, in terms of searching for online materials, uploading UGC, and creating links, or running into technical difficulties (Kim, 2007), paper-based poster projects may prove more time consuming and do not allow students to practice the development of ICT (information communication and technology) skills (Kim, 2007). Once complete though, digital posters and other web-based authentic materials can assist language educators in circumventing issues associated with rapidly outdated material (Kim,2007), with content easily refreshed and accessed anywhere anytime by all stakeholders (parents, students, instructors) (Peter, 2005). Further, compared to paper based projects, material costs can be alleviated by utilizing online digital poster publishing tools.

McCoy,(2014) and Cutter,(2015) stated many features of Glogster such as; Glogster encourages students to collect information and to present their findings. With Glogster students experience intrinsic motivation to pursue their project. The Glogster facilitates students-centered learning whereby the teacher employs minimal role to present the general topic and provide guidelines to help students carry out their investigations. The Glogster seems to be an appropriate teaching strategy to differentiate the content, process and product of the oral presentations of students who employ the model to conduct their projects as well. Glogster reinforces a great sense of collaboration among the small groups and in the whole class. Glogster strengths the students' inquiry skills, communication opportunities and curriculum awareness of academic tasks.

Studies Related Glogster Technology

Kent (2009) investigated the applicability of interactive digital poster publishing tools in the EFL classroom. It examined EFL student multimedia-based poster project completion using Glogster in South Korea, learners responded well to the publishing tool, viewing it favorably, as almost all felt they could practice and develop their English skills with it. The research also comes to highlight a means for utilizing Glogster poster projects diagnostically, and shows that analyzing learner output produced with the publishing tool can be fruitful.

Martinez, Guerrero &Pitcher (2014) investigated how undergraduate Latino English learner (EL) students were motivated to read using technology by their teachers throughout their education. To examine this, they were asked to perform a task that involved reading online required to make a Glogster *(*an online interactive poster about their reading, and were

videotaped in the process Researchers suggested that technology both motivates and accelerates learning for EL students, and this study sought to understand what role technology played in the learning experiences of these students.

Awada and Abdallah (2015) examined the relative effectiveness of the Glogster educational tool in improving the speaking proficiency of university students enrolled in Communication Skills class in Lebanon and on increasing their levels of motivation for delivering presentations. The study is based on the assumptions that glogging provides an excellent opportunity for teachers to enhance students' creativity while conducting and presenting their projects. Descriptive statistics were computed and a series of independent sample and paired samples t-tests and a content analysis of the qualitative data regarding the participants' perceptions of their glogging experience were carried out. The results of the study indicated that the use of Glogster proved the credibility of the study assumptions.

Pilot Study

In order to provide evidence for the problem of the study, the researcher conducted a pilot study to determine first year secondary school students' reading comprehension skills and engagement. The following tables show the result of this pilot study.

Table (1): Results of the EFL Reading comprehension Skills Test

Reading comprehension skills	Mean	SD	%
Skimming	4.90	1.31	49%
Scanning	3.55	1.51	35.50%
Guessing the meaning	4.80	1.67	48%
Making inferences	3.40	1.20	34%
Summarizing	3.0	1.27	36%
prediction	3.5	0.96	35%
total	23.75	2.30	52.97%

Results in table (1) show that the students' mean score in each reading comprehension sub-skill is low. This indicates that the students' EFL reading comprehension ability is low and needs improvement; as the mean (Mean= 23.75) and the total percentage of the skills (%= 52.97%).

Statement of the Problem

Based on the review of literature, the researcher's experience as an EFL teacher, and the results of the pilot study, the problem of the study can be stated as follows: EFL first year secondary stage students have a difficulty in understanding a reading comprehension passage due to their poor reading comprehension skills, as well they lack the higher level of

reading skills such inference and prediction which in turn demotivate them .Thus, the present study suggested that using Glogster technology model might improve reading comprehension skills and engagement of first year secondary stage students.

Research Questions

This research attempted to answer the following questions:

1. What are the features of the Glogster technology model?
2. What is the effectiveness of Glogster technology model in enhancing reading comprehension skills of first year secondary stage students?
3. What is the effectiveness of Glogster technology model in improving the reading engagement of first year secondary stage students?

Hypotheses

This research attempted to verify the following hypotheses**:**

1. There is a statistically significant difference at the ≤ .05 level between the mean score of the experimental group and that of the control group on the post administration of the reading comprehension skills test in favor of the experimental group.
2. There is a statistically significant difference at the ≤ .05 level between the mean score of experimental group on the pre and post administration of the reading comprehension test in favor of the post administration.
3. There is a statistically significant difference at the ≤ .05 level between the mean score of the experimental group and that of the control group on the post administration of the reading engagement scale in favor of the experimental group**.**
4. There is a statistically significant difference at the ≤ .05 level between the mean score of experimental group on the pre and post administration of the language engagement scale in favor of the post administration.

Purpose:

The present study aims at:

- Determining the effectiveness of Glogster technology in improving reading comprehension skills of first year secondary stage Al- Zohoor students.
- Determining the effectiveness of Glogster technology in enhancing reading engagement of first year secondary stage Al- Zohoor students.

Significance

It was hoped that the present research would contribute to:

- Enriching literature with this study concerning using Glogster technology in enhancing first year secondary stage students' reading skills and engagement.
- Providing EFL teachers with a teacher guide on how to teach reading skills through using Glogster technology.
- Paving the way for other researchers to do more studies on the effectiveness of using Glogster technology to improve the other English language skills.
- Drawing the EFL teachers' attention to the importance of creating active learning environment to increase their students' engagement.

Delimitations of the study:

This research was delimited to*:*

The participants of the study: first year secondary stage students (60 female students at Al –Zohoor School, Buraydah, Al Qassim, Saudi Arabia)

Some EFL reading copmprehension skills identified through the content of "New Hello! English for Secondary Schools". The six reading comprehension skills identified based on analyzing students' textbook and teacher's guide.

Five units of the Student's Book, New Hello! English for Secondary Schools, in the first term of the academic year 2021/2022.

Methodology:

Participants

The participants were 60 first year secondary stage students. Two classes were randomly selected from Al- Zohoor School in the academic year (2021-2022) at the first semester. The participants were divided into two groups: one is experimental and the other one is control. Each group consisted of 30 students.

Students' age in each group ranged from 14-15 years old. All the students have started learning English since KG level. The participants of the study were homogenous to great extent as they come from almost socio economic background. Follow up observation was conducted during the study for recording students" several trails in answering the exercises and their changing degrees to the best.

Design

The study adopted the quasi-experimental design including two groups: experimental and control groups. Two classes were selected to represent the experimental and the control groups. The experimental group was taught through the Glogster activities, while the control group received the regular teaching method inside the regular classroom.

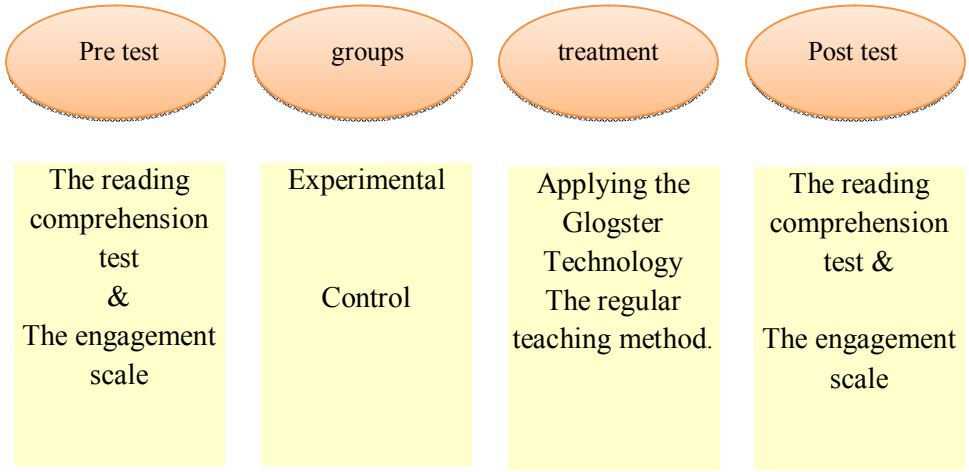


Figure (1)The quasi-experimental design of the study

Instruments:

The present research made use of the following instruments, which were developed by the researcher and validated by the jury members:

1. An EFL reading comprehension test to assess students' EFL reading skills.
2. An engagement scale to assess the students' engagement in reading activities.

Definition of Terms

Reading comprehension

For the purpose of this research, reading comprehension is comprehending information and ideas included in English written texts and that comprehension is represented in the ability to identify the main idea, identify supporting details, guess meaning, infer causes, and make justified choices.

Glogster

For the purpose of this research ,the operational definition of the digital poster is a collaborative communicative multimedia representation of the information students collected and analyzed about an assigned topic. It is designed and created online using the Glogster Edu website which allows students to integrate multiple modes, such as written text, photos, audios, videos, drawings, links, data attachments, and other media into a single attractive file.

Reading Engagement:

The researcher defined reading engagement is the extent to which students participate in practices related to high levels of learning including participation in collaborative learning experiences

Results and Discussion

The results of the research are statistically analyzed in terms of its hypotheses and they are discussed in the light of the theoretical background and related studies. Research results were reported as follows:

Verifying the first hypothesis:

The first hypothesis stated that "***There is a statistically significant difference at 0.05 level between the mean scores of the control group and that of the experimental group on the post administration of the reading comprehension test in favor of the experimental group"***. *t*-test was used to test The first hypothesis. Table (2) indicates the results.

Table (2): Comparison of the control and the experimental groups on the post administration of the reading comprehension skills Test

Skills	The group	N. of cases	Means	S.D	df	T. Value	Sig.
Skimming	Control	**30**	**2.70**	**0.794**	**58**	**-7.724**	**0.01 Sig.**
	Experimental	**30**	**3.90**	**0.305**			
Scanning	Control	**30**	**2.67**	**0.758**		**-8.679**	**0.01 Sig.**
	Experimental	**30**	**3.93**	**0.254**			
Guessing	Control	**30**	**2.60**	**0.724**		**-10.026**	**0.01 Sig.**
	Experimental	**30**	**3.97**	**0.183**			
Prediction	Control	**30**	**3.73**	**0.980**		**-33.769**	**0.01 Sig.**
	Experimental	**30**	**11.43**	**0.774**			
Making	Control	**30**	**3.37**	**0.928**		**-37.712**	**0.01 Sig.**
	Experimental	**30**	**11.50**	**0.731**			
Summarizing	Control	**30**	**4.47**	**0.819**		**-33.090**	**0.01 Sig.**
	Experimental	**30**	**11.47**	**0.819**			
Total score of Test	Control	**30**	**19.53**	**3.288**		**-40.723**	**0.01 Sig.**
	Experimental	**30**	**46.40**	**1.499**			

Results in Table (2) show that the level of the experimental group is higher than that of the control on the post-test. This indicates that there is statistically significant difference between the experimental and the control groups in the sub-skills and in the total score on the post-administration of the test in favor of the experimental group.

Verifying the second hypothesis:

The second hypothesis stated that "There ***is a statistically significant difference at the ≤ .05 level between the mean score of experimental group on the pre and post administration of the reading comprehension test in***

favor of the post administration. The researcher used the *t*-test in order to indicate the effect of the study intervention (Glogster Technology) on reading comprehension skills of the experimental group.

Table (3): Comparing the reading performance of the experiment group on the reading comprehension skills Test

Skills	The group	N.of cases	Means	S.D	df	T.Value	Sig.
Skimming	pre – test	**30**	**1.72**	**0.679**	**29**	**-15.056**	**0.01 Sig.**
	post – test	**30**	**3.90**	**0.305**			
Scanning	pre – test	**30**	**2.03**	**0.556**		**-19.000**	**0.01 Sig.**
	post – test	**30**	**3.93**	**0.254**			
Guessing	pre – test	**30**	**2.17**	**0.805**		**-12.504**	**0.01 Sig.**
	post – test	**30**	**3.97**	**0.183**			
Prediction	pre – test	**30**	**2.83**	**0.699**		**-42.755**	**0.01 Sig.**
	post – test	**30**	**11.43**	**0.774**			
Making	pre – test	**30**	**2.66**	**0.837**		**-44.000**	**0.01 Sig.**
	post – test	**30**	**11.50**	**0.731**			
Summarizing	pre – test	**30**	**3.69**	**0.535**		**-42.273**	**0.01 Sig.**
	post – test	**30**	**11.47**	**0.819**			
Total score of Test	pre – test	**30**	**15.10**	**2.542**		**-58.121**	**0.01 Sig.**
	post – test	**30**	**46.40**	**1.499**			

The total score of the experimental group on the pre-reading test was low (15.10) and it has been increased in the post-test to become (46.40).The difference between the mean score of the pre and post- reading comprehension test in the total level of the experimental group has statistically significant difference in the favor of the post-administration due to using Glogster Technology.

The effect size of using Glogster technology on improving the experiment group reading comprehension skills

In order to determine the effect size of the Glogster Technology the square of eta (η2) was estimated. , the researcher calculated the effect size value (η2*) as shown in Table (3). Fouad Abu Hatab and AmalSadiq (1991: 442) reported the following rules:

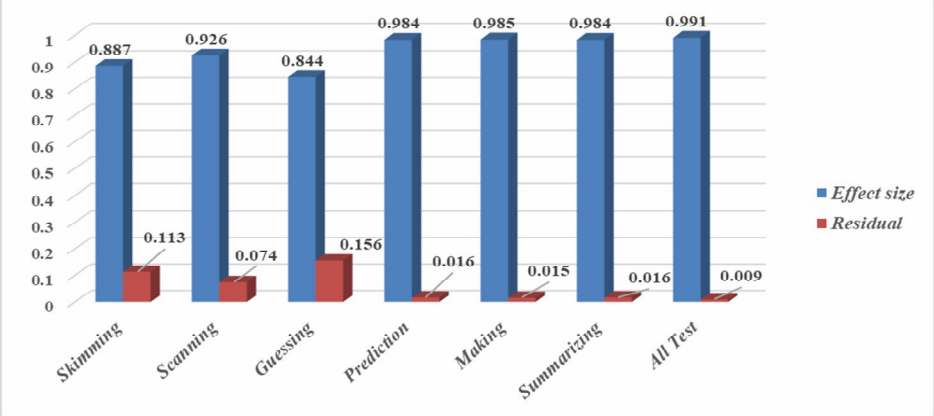
a) The effect that explains about 1% of the total variance indicates a small effect.
b) The effect that explains about 6% of the total variance indicates a medium effect.
c) C - The effect that explains about 15% of the total variance indicates a significant effect.

Table (4): The effect size of the on Glogster technology reading comprehension skills

Skills	η^2	Effect size
Skimming	88.7 %	High
Scanning	92.6 %	High
Guessing	84.4 %	High
Prediction	98.4 %	High
Making	98.5 %	High
Summarizing	98.4 %	High
Total score of Test	99.1 %	**High**

It is clear from the table (4) the strength of the effect of Glogster technology on the total score of the reading comprehension test and its sub-skills, where the values of (η^2) in each skill and in the total test score ranged between (0.844, 0.991). This means that the effect size of the Glogster technology on improving the individual reading comprehension sub-skills ranged between 80% and 99% and was responsible for 99.1% of the improvement of the total test score. . In addition, the size of this difference fosters the positive effect of Glogster technology on students' performance. It can also be illustrated through the following figure (2) as follows:

The effect the Glogster technology on the reading comprehension skills test (skills and the total score)



Verifying the third hypothesis

The third hypothesis stated that "*there is a statistically significant difference at the ≤ .05 level between the mean score of the experimental group and that of the control group on the post administration of the reading engagement scale in favor of the experimental group.*"

Table (5): Comparing the control and the experimental groups over post administration of the reading engagement scale.

	The group	N.of cases	Means	S.D	df	*t*.Value	Sig.
Total score of the Scale	Control	30	55.87	4.321	58	-34.731	0.01 Sig.
	Experimental	30	84.17	1.117			

The results in table (5) indicates that the experimental group outperformed the control group in their reading engagement scale. This means that the experimental group students are engaged learners more than students in the control group due to using Glogster technology.

Verifying the fourth hypothesis:

The fourth hypothesis stated that" ***There is a statistically significant difference at the ≤.05 level between the mean score of experimental group on the pre and post administration of the reading engagement scale in favor of the post administration."***

The reading engagement level of students before and after implementing Glogster technology was measured through using the *t*-test.

Table (6): Comparing the reading engagement level of the experiment group in the pre – post test of administration of the reading engagement scale

	The group	N. of cases	Means	S.D	df	*t*. Value	Sig.
Total score of the Scale	pre	30	55.33	3.818	29	-39.390	0.01 Sig.
	post	30	84.17	1.117			

According to table (6), it is clear that there is a difference in the students' mean score in the pre and post reading engagement scale in favor of the experimental group post administration.

The effect size of using Glogster technology on improving the experiment group reading engagement.

In order to calculate the effect size of the Glogster technology in terms of the difference between the experimental group pre and post administration of the reading comprehension skills test, the researcher calculated the effect size value (η2*) as shown in Table (7).

Fouad Abu Hatab and AmalSadiq (1991: 442) reported the following rules:

a) The effect that explains about 1% of the total variance indicates a small effect.
b) The effect that explains about 6% of the total variance indicates a medium effect.
c) C - The effect that explains about 15% of the total variance indicates a significant effect.

Table (7): The effect size of the Glogster technology on reading engagement scale of the experimental group

	η^2	Effect size
Total score of the Scale	98.2 %	**High**

It is clear from the table (7) the strength of the effect of Glogster technology on the total score of the reading engagement scale, where the values of (η^2) in the total score was (98.2). Results also show that the effect size of the Glogster technology on the students' performance in the reading engagement scale is high (98.2%). It can also be illustrated through this figure:

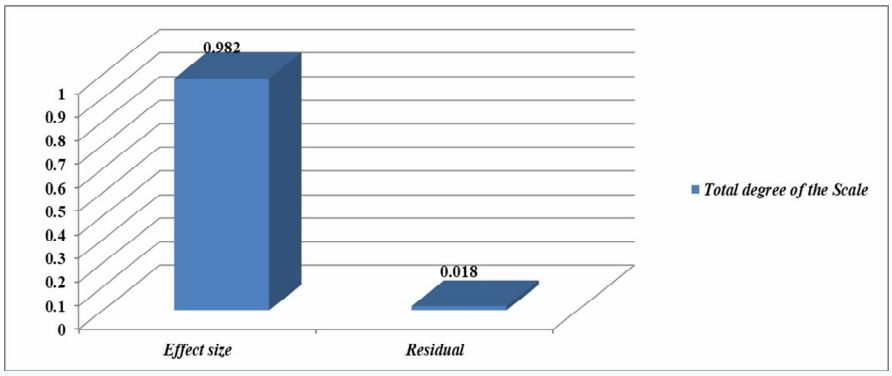


Figure (3) The effect size of Glogster Technology on the total score of the reading engagement scale.

Discussion of Results

The Glogster technology resulted in improving reading skills and the students' reading engagement. This could be for the following reasons:

- Students had to use resources such as online websites and videos in order to complete their learning in addition to using online dictionaries during the reading activities.
- They also used the mind-maps to organize thinking process.
- The Glogster technology gave the students opportunities to practice discussion, searching online, answering questions and making suggestions.

- The students got benefit through idea exchange with their partners and through searching for information themselves.
- The Glogster technology allowed both teachers and students to learn through a method that is more effective, engaging, meaningful, dynamic and interactive.
- The researcher's observations during the experiment revealed that students exhibited more confidence while searching for information about the topics collecting data, videos, uploading audio to create their own glogs as the days progressed.
- The advantages of using Glogster technology are creativity, collaborative spirit, peer learning and retention of reading comprehension concept.
- During such activities the students showed interest and responsibility in helping each other. All the students became more engaged.

Results reveled that there was a statistically significant difference between the two groups in the variables under investigation in favor of the experimental group. These results indicated the improvement in the experimental group students' reading comprehension skills in addition to their engagement into reading on the post administration of the reading comprehension test and reading engagement scale. Such improvement could be attributed to the effect of the experimental treatment using the Glogster technology.

More specifically, results might be attributed to the activities that were included in the Glogster technology which encouraged, motivated and engaged the participants to interact using the focused sub-skills. The results of the present study are compatible with the results concluded by Kent (2009) which investigated the applicability of interactive digital poster publishing tools in the EFL classroom which highlight a means for utilizing Glogster poster projects diagnostically, and shows that analyzing learner output produced with the publishing tool can be fruitful. Also, results of the present study go in line with the results of Awada and Abdallah (2015) which proved the relative effectiveness of the Glogster educational tool in improving the speaking proficiency of university students.

Similarly, results of the present study agreed with the results of Awda and Faour (2018) which investigated the impact of Glogster and cooperative learning as differentiation models of English as foreign language learning and science projects. The result revealed that introducing Glogster and cooperative learning can improve the comprehension level of the students to a greater level than the classroom teaching. Moreover, the results of the

current study were compatible with Ahmad (2019) which investigated the effect of digital posters on the reading comprehension and engagement of EFL students which concluded that digital posters significantly improved the reading comprehension and engagement of EFL students. Finally, results of the students' engagement towards reading in the current study are the same of some studies like Guthri et al (2004), El-behairy (2019) and Meki (2021).

In conclusion, this research revealed the high effect of using the Glogster technology in teaching reading comprehension skills and students' engagement in reading compared to the regular way. It was effective, because the students learned by themselves, without the burdens of pens and papers, the activities of Glogster technology matched their interests and the students felt glad, excited and motivated because of learning in a way that matched their needs.

Conclusion

With reference to the results of the study, the following points were concluded:

Extending the practice of EFL reading comprehension skills outside the regular classroom and using innovative ways made a great develop in students' level and increased reading engagement. One of the best ways for students to practice reading comprehension skills effectively is to virtually communicate with their colleagues and teacher. It is also significant for students to be responsible for their own learning. If students practice extra reading outside the regular classroom, they will gain more vocabularies and knowledge which enable them to comprehend any topic.

Moreover, when students search for information about a specific topic, take notes, and discuss it with their colleagues and the teacher, they develop their own independence and build their confidence. They became active, autonomous, and self-directed learners. All of the mentioned positives can be achieved through adopting Glogster technology as a mean of communication. Learning virtually can overcome students' lack of practice, difficulties in grasping ideas, and obstacles in expressing their thoughts correctly.

The study proved that Glogster technology is effective in attracting students' attention and activating their knowledge. It was proved that Glogster technology also supported involving students actively in practicing EFL reading comprehension skills and increase their engagement.

Reference

Abo- Hatab, F., and Sadek, A. (1991). *Research methods and statistical analysis methods in psychological, educational and social sciences*. The Egyptian Anglo Bookshop.

Ahmad, S. Z. (2019). Digital Posters to Engage EFL Students and Develop Their Reading Comprehension. *Journal of Education and Learning*, *8*(4), 169-184.

Awada, G. M., & Abdallah, A. M. (2015). Effect of Using the Glogster Technological Model on Enhancing the Perceptions and Speaking Proficiency of Communication Skills Students. *International Journal of Global Education*, *4*(2).

Awada, G. M., & Faour, K. H. (hed2018). EFFECT OF GLOGSTER AND COOPERATIVE LEARNING DIFFERENTIATED INSTRUCTION ON TEACHERS' PERCEPTIONS. *Teaching English with Technology*, *18*(2), 93-114.

Basyouni, N. (2018) *Using some online reading strategies to enhance efl secondary stage students 'reading comprehension skills and their attitude towards reading.*(master's thesis) Mansoura University, Mansoura, Egypt.

Berger, P. (2007). What is Web 2.0 and, most important, how does it support learning? *Information Searcher. 17*(2), 2.

between L2 reading comprehension and grammatical competence. *The Reading Matrix*, 5(2), 1-14.

Cain, K., Oakhill, J., & Bryant, P. (2004). Children's reading comprehension ability: Concurrent prediction by working memory, verbal ability, and component skills. *Journal of educational psychology*, *96*(1), 31.

Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In J.

Cutter, M. (2015). Using technology with English Language Learners in the classroom.

Davis, M. H., ... & Tonks, S. (2004). Increasing reading comprehension and engagement through concept-oriented reading instruction. *Journal of educational psychology*, *96*(3), 403.

Donoghue, M. (2009). *Language arts: Integrating skills for classroom teaching.* California: Sage Publication.

El-behairy, A.(2019). *The effectiveness of using engagement strategies in developing efl prospective teachers' reading comprehension skills and exploring their satisfaction.*(PhD thesis) Minoufiya University, Egypt.

El-Marakby, E., (2017) *Using some online peer-assisted learning strategies to develop prep stage students' efl reading comprehension skills and their self- esteem.*(master's thesis) Mansoura University, Mansoura, Egypt.

Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research, 59*(2), 117-142.

Finn, J. D., & Rock, D. A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology, 82*(2), 221-234.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(59), 59-108.

Gascoigne, C. (2005). Toward an understanding of the relationship

Grabe, W., & Stoller, F. (2002). Teaching and research reading. *Harlow, UK: Longman*.

Guthrie, J. T., Wigfield, A., & You, W. (2012). Instructional contexts for engagement and achievement in reading. In S. Christenson, A. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 601-634). New York, NY: Springer

Guthrie, J. T., Wigfield, A., Barbosa, P., Perencevich, K. C., Taboada, A.,

Harmer, J. (2001).*The practice of English language teaching*. (3re ed.). Essex: Pearson Education Limited.

Hassan, W. (2019) *The Impact of a Proposed Online Self -Regulation Based Vocabulary Learning Program on Developing Secondary Stage Students' EFl Reading Comprehension Skills and Reading Speed*. (PH.D thesis), Mansoura University, Mansoura, Egypt.

Hedgcock, J. S. & Ferris, D. R. (2009) *Teaching Readers of English – Students, Texts and Contexts*. London: Routledge.

Hillman, T. (2014). Finding space for student innovative practices with technology in the classroom. *Learning, Media and Technology*, *39*(2), 169-183 https://techandcurriculum.pressbooks.com/chapter/engagement-and-success/ 19/5/2021

Johnson, A. P, (2008) *Teaching Reading and Writing: a guide book for tutoring and remediating students*, Rowman and Littlefield Publishing Groups, Inc.: USA, p. 110.

Kent, D., (2009) Applicability of Interactive Digital Poster Publishing Tools in the EFL Classroom. Woosong University. Retrieved March 12, 2020 from URL: https://www.researchgate.net/publication/305638497.

Kim, I. O. (2000). Accommodating language learners' different learning styles with multimedia technology. *Multimedia Assisted Language Learning 3*(2), 36-52.

Kintsch, W. (1998). The role of knowledge in discourse comprehension: A construction-integration model. *Psychological Review, 95*, 163-183. doi:10.1037/0033-295X.95.2.163

Lee, J. (2014). The relationship between student engagement and academic performance: Is it a myth or reality? *The Journal of Educational Research, 107*(3), 177-185.

Liu, F. (2010). Reading abilities and strategies: A short introduction. *International Education Studies*, *3*(3), 153-157.

Liu, Y., Zhu, L. & Nian, Y. (2010). Application of schema theory in teaching college English reading. *Canadian Social Science, 6*(1), 59-65.

Martinez-Alba, G., Cruzado-Guerrero, J., & Pitcher, S. (2014). Glogsters and other motivating technology: A multiple case study of English Learners. *Reading*, *14*(2).

McCoy, L. P. (2014). Web 2.0 in the mathematics Classroom. *Mathematics teaching in the Middle School*, *20*(4), 237-242.

Mekki,O. (2021*) the effect of suggested SIT based strategy in teaching English on developing preparatory school students' oral communicative competence and engagement*. (MA thesis) Sohag University, Egypt.

Mickulecky, B. S., and Jeffries, L, (2004), *More Reading Power: Reading for Pleasure, Comprehension Skills, Thinking Skills, Reading Faster,* New York: Pearson Education, p. 74.

Mikulecky, B. S. (2008). Teaching reading in a second language. *Recuperado de http://longmanhomeusa. com*.

Nunan, D. G. (1999). Second language teaching & learning. *Computers& Education,* 55(4), 1721-1731.

O'Reilly, T. (2005). *What is Web 2.0: Design patterns and business models for the next generation of software* Retrieved July 5, 2020, from http://www.oreillynet.com/pub/a/oreilly/tim/ news/2005/09/30/what-isweb- 20.html

Ormiston, M. (2010). *creating a digitalrich classroom: teaching & learning in a web 2.0 world*. Solution Tree Press.

Paris, S. G. (2005). Reinterpreting the development of reading skills. *Reading research quarterly*, *40*(2), 184-202.

Perfetti, C. A. (2003). The universal grammar of reading. *Scientific studies of reading*, *7*(1), 3-24.

Peter, P. M. (2005, June). ePortfolios. In *EdMedia+ Innovate Learning* (pp. 1805-1808). Association for the Advancement of Computing in Education (AACE).

Picardo, Jose. (2012). Using Glogster as an Assessment Tool.*Box of Tricks:Education and Technology*. Retrieved fromhttp://www.boxoftricks .net/tag/Glogster.

Reschly, A. L., & Christenson, S. L. (2012). Jingle, jangle, and conceptual haziness: Evolution and future directions of the engagement construct. In S. Christenson, A. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 3-19). New York, NY: Springer

Richard, J. C and Schmidt, R, (2002), *Longman Dictionary of Language Teaching and Applied Linguistics,* England: Pearson Education Limited, p. 35.

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, *85*(4), 571-581.

Tompkins, G. E. (2011). Literacy in the early grades: A successful start for prek-4 readers. *Boston, Pearson. p*, *203*(5), 163-4.

Wang, Z., Chen, L., & Anderson, T. (2014). A framework for interaction and cognitive engagement in connectivist learning contexts. *The International Review of Research in Open and Distributed Learning*, *15*(2). *Technology, and Organizations*, *4*, 127-145.

Willms, J. D. (2003). Literacy proficiency of youth: Evidence of converging socioeconomic gradients. *International Journal of Educational Research, 39*(3), 247-252.