The Effect of Digital Storytelling as an Instructional Technique in Improving Fifth Grade Students' English Reading Comprehension Skills

Dr. Demaa Hasan[1]

[1]PhD researcher- Damascus University- faculty of education- Department of Curricula and methods of Instruction .
E-Mail: dimahasan7@gmail.com

Abstract:

This study aimed at investigating the effect of digital storytelling in developing fifth grade students' achievement in reading comprehension skills. The target skills were prediction, skimming, scanning, guessing the meaning through context and Inference. A quasi- experimental approach was used in this study. The total number of participants was 60 in a Private school in Damascus city in the first semester of the academic year 2021-2022. The sample consisted of two groups: the control group (30) students, and the experimental group (30) students. The instruments of the study were an achievement reading comprehension test of five scopes with (15) items and a digital story. The SPSS statistical program was used to analyze the study data and the hypotheses were tested at the level of significance ($\alpha=$ 0.05). The results indicated that there were statistically significant differences between both groups in favour of the experimental one, in prediction, skimming, scanning, guessing the meaning of words through context and inference skills due to the digital storytelling technique. Effect size technique indicated a large effect of this technique in improving reading comprehension skills collectively and in guessing the meaning of word through context skill. Whereas, it indicated a medium effect in improving prediction, skimming and scanning skills and had a low effect in improving the inference skill for the experimental group.

Based on those findings, the study recommended the necessity of implementing the digital storytelling technique in teaching English to bring better outcomes in students' achievements. It was also suggested that further research should be conducted on the effect of digital storytelling in learning different skills of English language and other school subjects.

Key Words: Digital Storytelling, Reading Comprehension Skills

أثر السرد القصصي الرقمي كأسلوب تعليمي في تحسين مهارات القراءة الاستيعابية باللغة الإنجليزية لدى تلاميذ الصف الخامس الأساسي

د. ديما حسن[1]

[1] باحثة حاصلة على شهادة الدكتوراه –جامعة دمشق–كلية التربية–قسم المناهج وطرائق التدريس.

E-mail:dimahasan7@gmail.com

الملخص:

هدفت الدراسة الحالية إلى تعرف أثر تقنية سرد القصص الرقمية في تحسين تحصيل تلاميذ الصف الخامس في مهارات القراءة الاستيعابية في اللغة الإنكليزية، حيث كانت المهارات المستهدفة هي: التنبؤ، القراءة الشاملة للتعرف على الخلاصة، البحث عن معلومات محددة، تخمين معاني الكلمات في السياق، قراءة ما بين السطور. لتحقيق أهداف البحث اعتمدت الباحثة المنهج شبه التجريبي حيث قامت الباحثة باختيار عينة مقصودة من تلاميذ الصف الخامس في مدرسة خاصة في مدينة دمشق(نجوم المستقبل) مؤلفة من (60) طالباً وطالبة مقسمين إلى مجموعتين: مجموعة تجريبية (30) طالباً و طالبة تم تدريسهم باستخدام تقنية سرد القصص الرقمية حيث استخدمت الباحثة قصص رقمية تفاعلية مطبقة عبر السبورة الذكية ومجموعة أخرى ضابطة مؤلفة من (30) طالباً وطالبة درسوا بالطريقة الاعتيادية ، قامت الباحثة بتطبيق اختبار تحصيلي على العينة وعولجت البيانات باستخدام برنامج SPSS حيث اختبرت الفرضيات الصفرية باستخدام اختبار t-test عند مستوى الدلالة (0.05). أظهرت نتائج الدراسة أن تحصيل طلبة المجموعة التجريبية في اختبار مهارات القراءة الاستيعابية البعدي أعلى من تحصيل طلبة المجموعة الضابطة في جميع مهارات القراءة الاستيعابية المستهدفة. وباستخدام مربع "ايتا" من اجل معرفة مدى حجم تأثير تقنية سرد القصص الرقمية تبين أن حجم التأثير كبير في المهارات ككل ومهارة تخمين معاني الكلمات في السياق بشكل منفرد بينما كان حجم التأثير متوسطا" في كل من المهارات التالية: التنبؤ، القراءة الشاملة للتعرف على الخلاصة، البحث عن معلومات محددة ولكن حجم الأثر كان صغيرا" في مهارة قراءة ما بين السطور.

هذا وقد أوصت الدراسة بضرورة توظيف طريقة سرد القصص الرقمية في تدريس مهارات اللغة الانكليزية لتحقيق أفضل النتائج في تحصيل الطلبة، واقترحت الباحثة إجراء المزيد من الدراسات للتعرف على أثر هذه التقنية في مواد ومهارات لغوية أخرى.

الكلمات المفتاحية: السرد القصصي الرقمي – مهارات القراءة الاستيعابية.

Introduction:

Technology keeps developing and changing. The rapid developments in technology have led to a number of opportunities to be used in language classrooms by changing the traditional nature of classroom. Multimedia CD ROMs, video conferencing, email groups, electronic libraries and on-line testing are just some examples of the applications that could be used in order to teach and learn languages (Ishtaiwa & Shana, 2011). The place of new media in children's everyday lives and the variety of technologies make it difficult for traditional books to maintain their attraction for young learners. Students have less interest in reading books because of the rising interest in new media and technologies such as computers, tablets PCs and smartphones.

Since children love to listen to stories and are accustomed to hearing stories told and read, the use of storytelling for foreign language acquisition presents opportunities to employ something that is familiar and also brings the world into the classroom and offer a safe environment for children to gain intercultural experiences.

The educational value of using stories and the technique of storytelling has always been accepted throughout the world. Now more and more English as a foreign language (EFL) teachers of young learners are using carefully selected stories from the world of children's literature.

Kress claims that 'literacy has shifted from being paper based to being screen based' (cited in Cox,2011, p.79), and for Cox(2011, p79) , it is no longer ' sufficient to think of reading entirely in terms of words on the page, that processed from the top left to the bottom right; neither can we think of text without acknowledging the power of visual images to shape the way we receive information'.

Furthermore, reading affects all aspects of people's lives: academically, socially, economically, and psychologically. A person may read in order to gain information or verify existing knowledge, or in order to critique a writer's ideas or writing style. A person may also read for enjoyment, or to enhance knowledge of the language being read. Haboush (2010) states that "nothing is called pure reading, listening, speaking or writing. Such language skills to some extent interweave. When a lesson or an activity is not a reading one, students still need to read certain things, with full comprehension" (p.13). It is an essential skill for students who are learning English as a foreign language and the development of good reading abilities will greatly help them progress in other academic areas. Mikulecky (1986) stated, "Reading helps you learn to think in the new language. Reading helps you build a better vocabulary. Reading makes you more comfortable with written English." (p. 1). One solution is offered by digital storytelling, which adds new technological features to a traditional learning resource.

According to Signes (2008), the main difference between digital stories and traditional stories is the nature of medium and tools that are used in contrast with those of the traditional stories. Holtzman (1997) affirms the main differences are "nonlinearity, discontinuity and autonomy" In the same context, Handler Miller (2008) added digital stories encourage the use of various media, all tied together to serve the core story".

In light of what has been mentioned, the researcher suggests the possibility of adopting digital storytelling technique in teaching reading comprehension skills. This study aims at investigating the effect of digital storytelling technique in the reading comprehension skills of fifth grade students.

1- Research problem:

The researcher conducted a pilot study on 14/ 10/ 2021 on 20 fifth grade teachers who teach English in Damascus schools to find out the methods they use in teaching reading comprehension skills and investigate their attitudes towards modern teaching methods, which may contribute to increasing students' achievement and developing their reading comprehension skills. The results of the study were as follows:

- 90% of teachers use traditional reading exercises, such as specifying main ideas, supporting details, topic sentences, etc. In addition, they teach their students by underlining or highlighting words in contexts.
- 93% of teachers treat their students as adult learners, so they apply silent reading and ask them to study the required vocabulary lists.

- Only 10% of teachers use effective instructional means in order to meet the reading needs of students within the 21st century.
- 70% of teachers are not interested in searching for modern teaching methods.
- Only 7% of teachers have prior knowledge of the digital storytelling technique.

Out of this reality, the researcher believes that teachers actually do not devote any of the classroom time for teaching students how to comprehend what they read. Teaching reading comprehension skills is limited to the assignment of a reading passage accompanied by a number of short or multiple- choice questions relating to the passage. However, in order to have good readers, students should recognize words, predict the meaning, activate prior knowledge, recall the prior knowledge, understand the reading passage, infer the meaning, critique and evaluate. Using digital storytelling technique encourages using new ways of teaching reading in which students learn cooperatively within their own group.

In addition, Different procedures and abilities are targeted in the international literature concerning the use of digital storytelling in improving learners, (Alshrari, 2015; Apriltya, Régina and Arifin, 2016; Anggeraini and Afifah, 2017) on reading comprehension. However, how to use digital storytelling to teach EFL students' literacy and most of all to teach reading, and measure its effect on students' achievement in each reading comprehension skill is still a burning problem. The researcher believes that it is very important to explore the effect of this technique in improving students' reading comprehension skills. So the problem of the study can be summarized by addressing the weakness of fifth-grade students in possessing reading skills through measuring the effect of digital storytelling.

2 –Significance of the Research:
The research importance emerges from the following points:

1- Positive results of the study could help teachers to use digital stories for developing EFL students' reading comprehension skills.

2- The findings of the study might pave the way for researchers to investigate the application of digital storytelling technique in other EFL students' language skills and sub-skills, such as, listening, speaking, writing, grammar and vocabulary.

3- This study is expected to provide valuable information about how to create digital materials for those who teach English as a foreign language at elementary schools.

4- It can be considered as one of the first studies in Syria, within the researcher knowledge, which deals with using digital storytelling in developing students' reading comprehension skills.

3-Research Aim:
The research aims at achieving the following:
- Exploring the effect of digital storytelling technique in developing fifth grade students' reading comprehension skills collectively and in each skill.

4-Research Question:
The research tries to answer the following questions:
- What is the effect of digital storytelling technique in improving students' achievements in reading comprehension skills collectively?
- What is the effect of digital storytelling technique in improving students' achievements in prediction, skimming, scanning, guessing the meaning through context and Inference?

5-Research Hypotheses:
According to the research aims and research questions, the research hypotheses which will be tested at the ($\alpha = 0.05$) level of significance are as follows:
The main hypotheses:
1- There is no statistically significant difference in both the experimental group students (who learned reading comprehension through using story telling technique) and control group students (who learned

reading comprehension according to the used method) between the mean scores of the pre and post reading comprehension skills – test.

2- There is no statistically significant difference in the post reading comprehension skills - test between the mean scores of experimental group students (who learned reading comprehension through using story telling technique) and control group students (who learned reading comprehension according to the used method).

  This hypothesis is categorized into five sub- hypotheses:

2-1- There is no statistically significant mean scores difference between students in the experimental and control groups in "prediction" skill in the post- test.

2-2- There is no statistically significant mean scores difference between students in the experimental and control groups in "skimming" skill in the post- test.

2-3- There is no statistically significant mean scores difference between students in the experimental and control groups in "scanning" skill in the post- test.

2-4- There is no statistically significant mean scores difference between students in the experimental and control groups in "guessing the meaning through context" skill in the post- test.

2-5- There is no statistically significant mean scores difference between students in the experimental and control groups in "inference" skill in the post- test.

6- Research Limitations

- **Sample limitations**

  The research was restricted to fifth grade students.

- **Spatial limitations**

   The research was applied in a private school in Damascus: Future Stars. The researcher selected this school, in particular, because it was equipped with IWB, which aided the delivery of this study.

- **Time Limitations**

The study was carried out during the first semester of the academic   year 2021- 2022.

- **Educational Limitations**

The research was restricted to unit four of the English language textbook "Emar English series- Grade five".

- **Topical Limitations**

    The research was restricted to study reading comprehension skills (prediction, skimming, scanning, guessing the meaning through context and inference)

7- Research Methodology:

  A quasi-experimental approach was undertaken to investigate the effect of digital storytelling technique in improving the achievement of fifth grade students in reading comprehension skills.

7-1-setting and participants

A total of 60 fifth grade students form the purposeful sample. Two sections from the school were selected randomly: the control group (30) and the experimental group (30) students. The experimental group was taught reading via digital storytelling technique; and the control group was taught in the used method using their textbooks.

Setting: (the physical, social, or experimental context within which research is conducted)

7-2-Research Instruments

The researcher used the following instruments:

1. Digital stories. In this study, these stories will be presented in the classroom by the means of interactive white board (IWB).

2. A pre- post reading comprehension test.

7-3- Variables of the research

- One independent variable was tested: The digital storytelling technique.

- One dependent variable was tested: students' achievement in the reading comprehension skills test.

8-Operational Definitions of Terms:

8-1-Effect:
It is defined according to the American Heritage Dictionary as "The power to produce an outcome or achieve a result; influence". "It is the result or consequence which is produced by a cause or an action "or "The ability to bring about results" (2011, p.11).

The researcher defines the effect in this study as a form of reactivity whereby students improve their reading comprehension skills being experimentally measured simply in response to learning by using the digital storytelling technique. This means the change in the students' achievement in the reading comprehension skills test that may result from using the digital storytelling technique.

8-2- Digital Storytelling:
Snow (2002) defined the digital story as "a short (usually between 3 to 5 minutes) clip, which consisted of a series of still images, combined with oral and/or written text" (p.31).

According to the Digital Storytelling Association (2002), digital storytelling is the modern version of the traditional art of storytelling which uses digital media.

The researcher defines it as multimedia presentations arranged via the IWB that combine a variety of digital elements within a narrative structure

8-3- Reading Comprehension:
Snow (2002) defined it as "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language". Snow, also, proposed reading comprehension included three elements: "the reader who is doing the comprehending, the text that is to be comprehended, and the activity in which comprehension is embedded" (p.11).

The researcher defined reading comprehension as a process in which the student passes the level of merely identifying letters and words to interaction between text and meaning.

8-4- Reading Comprehension skills of the research:
They are specific abilities which enable a reader to read anything written with independence, comprehension and fluency. They are represented in cognitive and metacognitive processes including prediction, skimming, scanning, guessing meaning of words from context and inference.

8-4-1- Prediction:
It refers to" the faculty of predicting or guessing what is to come next, making use of grammatical, logical and cultural clues" (Grellet, 1995, p. 17).

8-4-2- Skimming:
This skill means "reading material quickly in order to get the gist of it, to know how it is organized, or to get an idea of the tone or the intention of the write" (Grellet's, 1981, p.4).

8-4-3- Scanning:
It means "teaching pupils how to find a specific detail quickly such as a name, a date or place in the texts" (Kiddey, 2001, p.10) .

8-4-4- Guessing meaning of words from context:
This skill refers to "reader's attempt to predict or to assume meaning of an unfamiliar word taking help of clues from the context" (Bader El Deen, 2009, p. 9).

8-4-5- Inference:
This skill refers to "reading behind the literal meaning and the superficial information of the text. It is based on primary reading processes" (Jouini, 2006, p. 82).

8-5- Achievement:
It refers to the amount of knowledge acquired by a student after learning a course, depending on the scores that he gets in the achievement tests (Al- Masree, 2009).

The researcher defines it as the mean of scores that the experimental group students achieve in the post - reading comprehension skills.

9- Literature Review:

The researcher reviewed most of the published articles, theses, dissertations and conference proceedings relating to using digital storytelling in teaching reading comprehension skills for students. The researcher reviewed literature in a chronological order starting with the oldest studies and ending with the up-to date ones.

1. Alshrari (2015)

The Effect of Digital Storytelling on EFL Second Intermediate Students' Reading Skills in Saudi-Arabia.

The study examined the effect of digital storytelling on EFL second intermediate students' reading skills in Saudi-Arabia. His study targeted fifty Saudi intermediate students who are divided into two groups: experimental and control group. A pre-test and post-test served as measuring instruments.

The findings indicated that students of experimental group who received instruction by digital storytelling achieved more progress in reading comprehension tests than the control group who received instruction by traditional method.

2. Apriltya, Régina and Arifin (2016)

The Use of Digital Story in Teaching Reading Narrative Text for SMP Students

The aim of the study was to measure the effectiveness of the using digital story strategy on developing reading narrative text of the eighth grade students of SMP Negeri 2 Pontianak in Malaysia. Thirty- five eighth students were the participants of the study. A pre-test and post-test were used as instruments.

The results showed that using digital story has an effective impact on teaching reading narrative text.

3. **Qoura (2016)**

Digital Storytelling: A Powerful Technology Tool for the 21st Century Classroom

This study examined the effect of digital stories in improving reading comprehension skills of the preparatory school students in Egypt. The participants of the study were classified into three groups and each group included thirty-five students: the first experimental group was taught by utilizing digital stories designed by the researcher. The second experimental group was taught by using digital stories downloaded from some educational sites on the internet. The control group was taught by using the traditional method of teaching reading skills. Instruments entailed a reading pre-post tests and a questionnaire.

The results showed that utilizing digital stories enhanced preparatory school students' reading skills.

4. Anggeraini and Afifah (2017)

Digital Storytelling as a Teaching Medium in Reading Classroom

The aim of this study was to investigate the effect of digital storytelling as a teaching medium on reading classroom for English students at university of Baturaja. The participants of the study are the second semester students and English lecturer as English teaching experts. The researcher used research and development (R &D) design that was developed by Borg and Gall in 1983. Data were collected by the means of questionnaire, observation, interviews and pre-post-tests.

The results of the study showed that students' achievements was improved significantly and their interest was increased noticeably after applying digital storytelling for teaching reading of short stories.

5. Choo, Li, Redzuan and Shamsuddin (2017)

Using Digital Story to Improve Primary School Pupils' Understanding of Poem

The aim of this study was to investigate the effect of digital story on enhancing the students' comprehending of poem in Malaysian primary school. Twenty students who aged ten years old were selected as participants of the study. A pre-test, post-test, observation and interview served as measuring instruments.

The findings indicated that students' performance and understanding of learning the poem were improved and their motivation was increased through using digital storytelling.

6. Dewi (2017)

Designing Supplementary Reading Material using Integrated Digital Storytelling for the Tenth Grade Students of SMA Negeri 1Cangkringan

The researcher in this study looked into designing supplementary reading material utilizing integrated digital storytelling for the tenth grade students of SMA Negeri 1Cangkringan in Indonesia. Tenth grade students of SMA Negeri 1Cangkringan were the participants of the study. A questionnaire, interviews and observation served as measuring instruments.

The findings showed that digital storytelling is appropriate and interesting strategy in teaching reading skills for tenth grade students of SMA Negeri 1Cangkringan.

7. Hamdy (2017)

The Effect of Using Digital Storytelling on Students' Reading Comprehension and Listening Comprehension

The purpose of this study was to find out the effect of using digital storytelling strategy on students' reading comprehension and listening comprehension. The design of this study was Quasi-Experimental with pretest and post-test. Thus, two classrooms containing the total of 60 students of level II at Language Development Center of UIN Suska Riau were selected as the sample based on their similar characteristics and were assigned into an experimental and a control group. In collecting the data, reading and listening tests as well as observations were utilized to assess participants' comprehension abilities prior to and after the treatment.

The results showed that the students of the experimental group outperformed the control group after the treatment. In addition, the values of the effect size obtained, reading (0.5), and listening (0.5), were categorized into the moderate effect size. Thus it was inferred that the use of digital storytelling had a significant effect on students' reading and listening comprehension at Language Development Center of UIN Suska Riau.

8. Alkhlili (2018)

Using Digital Stories for Developing Reading Skills of EFL Preparatory School Pupils

The aim of this study is to investigate the effectiveness of digital stories in developing some reading comprehension skills of the preparatory school pupils. To achieve the study purpose, research instruments were developed after adjusting their validity and reliability. Researcher prepared two instruments. First, the researcher prepared a questionnaire to determine the appropriate reading comprehension skills for the preparatory school pupils. Second, the researcher prepared a pre-post reading comprehension test. This test was used for measuring the pupils' reading comprehension skills. This study adopts the descriptive method. The participants were divided into two groups. The researcher presented digital stories for first group. The researcher also presented traditional method of teaching for second group. Each group consisted of 40 pupils. The results revealed effectiveness of adopting digital stories in developing pupils' reading skills among first year preparatory school pupils.

9. Radaideh, Al-Jamal and Sa'di (2020)

Digital Storytelling: Time to be Considered in Reading Comprehension

This quasi-experimental study investigated the potential effect of digital storytelling of basic fifth grade students' reading comprehension skills. Thirty-four male and female fifth-grade students were randomly selected from a conveniently-selected school, namely; Al Rusol Educational School for excellence, a private school in Irbid Directorate of Education, Jordan. The participants were distributed randomly into two intact sections and thereby forming two groups: an experimental and a control. To achieve the aim of the study, a reading comprehension pre-test and post-test was developed.

The finding indicated that the experimental group outperformed the control group in the overall reading comprehension post-test and in each part of the test: applied and analytic comprehension. The study recommended using digital storytelling in teaching English language reading comprehension skills.

10- The relation between the present study and the previous ones

All of the above-mentioned studies emphasized the importance of using digital storytelling technique in teaching reading comprehension as in the studies of Alshrari (2015), Apriltya, Régina and Arifin (2016), Qoura (2016), Dewi (2017). Most of the previous studies indicate that there is a strong relationship between digital storytelling and their positive effect on students' reading performance. The researcher benefited a lot from the above- mentioned studies in developing the instruments and providing the theoretical background. Furthermore, all the previous studies investigated digital storytelling technique's effect on in improving learners' reading comprehension performance in general. Whereas, the researcher in the present study felt that it would be beneficial to focus on reading for detailed comprehension. She compared results between groups in each selected skill.

11- Research Procedures

In order to examine the effect of digital storytelling technique in improving fifth grade students' achievement in reading comprehension skills, the researcher constructed the following tools: an achievement test and digital stories.

11-1- The achievement test:

To measure students' achievement in reading comprehension skills, the researcher constructed an achievement test (appendix 1).

11-1-1- Choice of the Reading Skills Checklist:

English reading comprehension skills were collected by the researcher through reviewing related literature, previous studies, teacher's guide of grade five, students' book and consulting experts in the field of English language. Then, the researcher put them in a list for the specialists to read in order to tick (/) for the five most important ones that they think fifth graders really need and didn't have. Table (1) shows these skills.

Table (1): The selected English Language Reading Comprehension Skills

The selected English Language Reading Comprehension Skills	
1	Prediction
2	Skimming
3	Scanning
4	Guessing the meaning of words in context
5	Inference

11-1-2-The pilot study of the achievement test

The pilot study was conducted to test the validity and measure reliability of the achievement test, other than the research sample. The pilot study consisted of (20) students from Future Stars school.

- Validity of the achievement test:

First, the test was evaluated by a number of referees in the field of education and teaching English who reviewed the test and most of them found that the items were suitable for fifth grade students. Thus the content validity was achieved. Second, the test was carried out on 7 /11/2021. The researcher tested the difficulty, the easiness (appendix 2) and the discrimination indexes (appendix 3) of the test.

- Reliability of the achievement test:

The same test was applied on 21/ 11 /2021 to calculate reliability of the test on the same students. The correlation coefficient of the two applications according to (Person) was (0.82). Also, the reliability by Alpha (α) was (0.92) which indicates that this tool was ready for application. The number of the achievement test questions is (14) and the final mark of the test is (20).

- **Self validity of the achievement test:**

It was calculated according to the following equation:

Self Validity $= \sqrt{\text{Reliability Coefficent}}$

Test-retest reliability coefficient was (0.82) so the self validity of the achievement test $was \sqrt{0.82} = 0.9$. It is a high validity coefficient, which indicates a good validity indicator.

11-2- Digital stories:

The researcher adapted Ellis and Brewster's (2002) model for planning and implementing story- based work to meet young learners' needs and preferences, support their understanding, and maximize their interaction (Appendix 4). Then, the researcher used SMART's Notebook software to digitize the story and design IWB-based activities: The researcher scanned in all the pictures and pasted them into presentation, adding sound effects, music, videos and hyperlinks.

The researcher designed and illustrated story that served as the basis for a storytelling unit implemented in a fifth-grade class. The story, My five senses go on a walk, involved Tommy and his mother decided to go for a walk to the park (Appendix 5). Three 45-minute lessons were taught during one week.

11-2 -1- Validity of the reading materials:

A number of referees reviewed the digital.materials. The received feedback showed that they were appropriate, clear and detailed enough to achieve the purpose of the study. One of their comments was the appropriateness of pictures with the purpose of the study.

11-2-2- Reliability of the activities:

The researcher applied the reading materials on (20) fifth grade students other than the sample. The researcher noticed that most students liked the digital materials and enjoyed completing tasks.

11-3-The experimental study

Prior to beginning the experiment on 28/11 /2021, students in the experimental and control groups were tested at the same time to examine the equality of groups. An independent t-test was used to determine if there was a difference between students' means scores in the pre-test.

Table (**2**): **The difference between the mean scores of the experimental and control groups in the pre-test**

Group	N	Mean	Std. Deviation	t	df	Sig	Decision
Experimental	30	6.43	1.257	0.487	58	0.628	Difference is not significant
Control	30	6.23	1.494				

The results in table (2) show that there is no statistical mean score difference between the experimental and control group in the pre-test. This indicates that the two chosen groups were equivalent and any difference between the students' results in the post-test can be contributed to using digital storytelling technique. After examining the equality of reading comprehension skills level of the chosen groups and the validity and reliability of the research tool, the researcher carried out the experiment. The control group was taught by the use of traditional methods for teaching reading. First, the new words were taught and practiced by writing them on a whiteboard and putting them in some new sentences, and then the students got into the text. When the text was read by the students, the teacher asked comprehension questions and each group answered them. On the other hand, the experimental group was taught by the use of digital storytelling technique where the whole reading comprehension text was displayed by the IWB and students were actively involved in the storytelling process through the use of IWB technology. Music was included to make storytelling experience more authentic, to accommodate all learning styles, and to expose students to as much variety of multimedia as possible in order to enhance the modelling of information and communication skills. In the experimental group, the researchers considered process model of reading which is the combination of bottom up model

and interactive model of reading where students brought their background knowledge to the process of reading, and motivated to take apart in this process. So, while reading the story, the students can choose a character they would like to follow throughout the story in a more intense way. The students would then pay closer attention to this character's features when reading the texts and take notes on essential information. They were also asked to work in groups to create a reading image with the help of the IWB software and resources which can be found on the internet. These reading images can include pictures, drawings, and graphs. At the end of the research, a post-test was administered to participants in both groups.

12- Analysis of Results

12-1-Answering questions and testing hypotheses of the study

▶ What is the effect of digital storytelling technique in improving students' achievement in reading comprehension skills collectively?

To answer this question the researcher tested the following main hypotheses

1- There is no statistically significant difference in both the experimental group students (who learned reading comprehension through using story telling technique) and control group students (who learned reading comprehension according to the used method) between the mean scores of the pre and post reading comprehension skills – test.

Table (3): The difference between the mean scores of students in both the experimental and control groups in the pre and post-test

Group		Number	Mean	Std. Deviation	t	df	Sig	Decision	Effect size
Experimental Group	pre-test	30	6.43	1.257	17.500	29	0.00	Difference is significant	0.91
	post-test	30	16.90	2.339					
Control group	pre-test	30	6.23	1.494	7.14	29	0.00	Difference is significant	0.63
	post-test	30	9.33	1.202					

Table (3) shows the following:

• There is a statistically significant mean scores difference between students in the experimental and control groups in in English reading comprehension skills in the pre and post-test in favour of the post-test.

• The effect size of the experimental group in learning reading comprehension skills was large (0.91) and it was higher than the effect size of the control group which was small (0.63).

• These findings indicates the effectiveness of digital storytelling technique in improving students' achievement in reading comprehension skills compared to the traditional method.

The researcher calculated the effect size in both groups using Eta Squared (η^2) according to the following formula: ($\eta2 = \frac{t^2}{t^2+df}$) where,

η^2 = eta squared value

t^2 = value of (t-test)

df = degree of freedom (Hasan,2011,p.293).

The following criterion was used to interpret the relationship strength between the dependent and independent variable:

Table 5: Effect Size Criterion

Effect Size	η^2
small effect size	0.20- 0.49
medium effect size	0.50- 0.79
large effect size	above 0.80

(Abu Jarad, 2013,p.362)

It can be addressed that students of experimental group who received instruction by digital storytelling achieved more progress in reading comprehension tests than the control group who received instruction by

traditional method. The use of digital stories enhanced pupils' reading comprehension skills, enhanced their classroom engagement and promoted seriousness in reading.

2- There is no statistically significant difference in the post reading comprehension skills - test between the mean scores of experimental group students (who learned reading comprehension through using story telling technique) and control group students (who learned reading comprehension according to the used method).

Table (4): The difference between the mean scores of students in the experimental and control groups in the post test

Group	Number	Mean	Std. Deviation	t	df	Sig	Decision	Effect size
Experimental	30	16.90	2.339	15.510	58	0.00	Difference is significant	0.80
Control	30	9.33	1.202					
Null Hypothesis				Rejected				

Table (4) shows that the mean scores of the experimental and control groups are (16.90) and (9.33) respectively, and the calculated (t) value is (15.510) at (0. 00 < 0.05) level of significance. This means that there is a statistically mean score difference at (α = 0.05) in the post-test between the experimental and control group in favour of the experimental group with a high effect size (d= 0.80). This result reflects that the experimental group students performed better in the post test as compared to the control group. This means that digital storytelling technique proved to be more effective in instructing the selected English reading comprehension skills compared to the traditional method. The fundamental distinction between these two instruction methods was found in the effective features of this technique as the tasks are authentic that motivate students to be actively engaged in the instructional process. In addition, stories allowed students the opportunity to become personally involved and presented language in a context that was easy to understand. It is in line with Alkhlili (2018) who claims the effectiveness of adopting digital stories in developing pupils' reading skills among first year preparatory school pupils.

► What is the effect of digital storytelling technique in students' achievement in prediction, skimming, scanning, guessing the meaning through context and Inference?

To answer this question the researcher tested the following sub- hypotheses:

1-1- There is no statistical significant mean scores difference between students in the experimental and control groups in "prediction" skill in the post- test.

Table (6): Mean scores difference between students in the experimental and control groups in "prediction" skill in the post- test.

Reading Comprehension Skill	Groups	N	Mean	Std. Deviation	t	df	Sig	Decision	Effect size
Prediction	Experimental	30	3.25	0.740	6.647	29	0.00	Difference is significant	0.6
	Control	30	1.93	0.556					

Table(6) shows that the mean scores of the experimental group and the control one are (3.25) and (1.93) respectively, and the calculated (t) value is (6.647) at (0. 00 < 0.05) level of significance. This means that there is a statistically mean score difference in the post- test at (α = 0.05) in the achievement of the experimental and control groups in the "Prediction" skill in favour of the experimental group with a medium effect size (0.6). This means that digital storytelling technique succeeded in promoting students' abilities in the "prediction" skill better than the traditional method.

Digital storytelling technique enabled pupils to make relevant, logical predictions by combining clues provided by different multimedia resources with personal experience or knowledge.

1-2- There is no statistical significant mean scores difference between students in the experimental and control groups in "skimming" skill in the post- test.

Table (7): Mean scores difference between students in the experimental and control groups in "skimming" skill in the post- test.

Reading Comprehension Skill	Groups	Number	Mean	Std. Deviation	t	df	Sig	Decision	Effect size
Skimming	Experimental	30	3.27	0.679	8.103	29	0.00	Difference is significant	0.6
	Control	30	1.90	0.481					

Table (7) shows that the mean scores of the experimental group and the control one are (3.27) and (1.90) respectively, and the calculated (t) value is (8.103) at (0. 00 < 0.05) level of significance. This means that there is a statistically mean score difference in the post- test at (α = 0.05) in the achievement of the experimental and control groups in the "skimming" skill in favour of the experimental group with a medium effect size (0.6). This indicates that the digital storytelling technique helped in improving students' level in the "skimming" skill in comparison with the traditional method. Digital storytelling technique was effective in extracting the most critical information from a page without reading every word.

1-3- There is no statistical significant mean scores difference between students in the experimental and control groups in "scanning" skill in the post- test.

Table (8): Mean scores difference between students in the experimental and control groups in "scanning" skill in the post- test.

Reading Comprehension Skill	Groups	N	Mean	Std. Deviation	t	df	Sig	Decision	Effect size
Scanning	Experimental	30	2.10	0.662	8.517	29	0.00	Difference is significant	0.7
	Control	30	1.00	0.695					

Table (8) shows that the mean scores of the experimental group and the control one are (2.10) and (1.00) respectively, and the calculated (t) value is (8.517) at (0. 00 < 0.05) level of significance. This means that there is a statistically mean score difference in the post- test at (α = 0.05) in the achievement of the experimental and control groups in the "scanning" skill in favour of the experimental group with a medium effect size (0.7). This indicates that the digital storytelling technique helped in improving students' level in the "scanning" skill in comparison with the traditional method.

1-4- There is no statistical significant mean scores difference between students in the experimental and control groups in "guessing the meaning through context" skill in the post- test.

Table (9): Mean scores difference between students in the experimental and control groups in "guessing the meaning through context " skill in the post- test.

Reading Comprehension Skill	Groups	N	Mean	Std. Deviation	t	df	Sig	Decision	Effect size
Guessing the meaning through context	Experimental	30	3.26	0.714	11.406	29	0.00	Difference is significant	0.8
	Control	30	1.98	0.740					

Table (9) shows that the mean scores of the experimental group and the control one are (3.26) and (1.98) respectively, and the calculated (t) value is (11.406) at (0. 00 < 0.05) level of significance. This means that there is a statistically mean score difference in the post- test at (α = 0.05) in the achievement of the experimental and control groups in the " Guessing the meaning through context " skill in favour of the experimental group with a high effect size (0.8). This means that the digital storytelling technique succeeded in promoting students' abilities in the "Guessing the meaning through context" skill in comparison with the traditional method. The students could predict the meaning of the unknown words without looking at the dictionaries or asking teachers. This technique gives the students the chance to discover the techniques for guessing word meaning from context. Then they used this ability to comprehend the text easily.

1-5- There is no statistical significant mean scores difference between students in the experimental and control groups in " inference" skill in the post- test.

Table (10): Mean scores difference between students in the experimental and control groups in "inference" skill in the post- test.

Reading Comprehension Skill	Groups	N.	Mean	Std. Deviation	t	df	Sig	Decision	Effect size
Inference	Experimental	30	3.20	0.607	5.136	29	0.00	Difference is significant	0.4
	Control	30	2.15	0.730					

Table (10) shows that the mean scores of the experimental group and the control one are (3.20) and (2.15) respectively, and the calculated (t) value is (5.136) at (0. 00 < 0.05) level of significance. This means that there is a statistically mean score difference in the post- test at (α = 0.05) in the achievement of the experimental and control groups in the "Inference" skill in favour of the experimental group with a small effect size (0.4). This indicates that the digital storytelling technique helped in improving students' level in the "Inference" skill in comparison with the traditional method. Digital storytelling technique enabled pupils more than the traditional method to read between the lines, make critical judgments, and form interpretations of the story. The researcher believes that this small effect size is because that reading between the lines is not an easy thing to do by the students. and more exercises regarding inference making should be given to the students as we know that practice makes perfect. This skill is increasing according to the age stage.

13- Discussion of the results:

The finding indicated that the experimental group outperformed the control group in the overall reading comprehension post-test and in each part of the test. It is obvious from the previous results that digital storytelling technique is more effective than the traditional method of teaching in promoting students' reading comprehension skills; students in the experimental group improved their reading comprehension skills better than the control group. This finding of the study supports results from the studies of (Radaideh, Al-Jamal and Sa'di, 2020;Hamdy, 2017; Alshrari, 2015). In digital stories instruction, students could freely and individually watch, listen, analyze, and practice some pre- reading activities such as questioning and explaining new words which enhance their reading comprehension ability. Students were encouraged to think more deeply about the meaning of the story. Digital storytelling empowered students to be confident communicators and reach deeper understanding in all skills. Rather than mere recipients of the story being told, students become active participants and may help co-construct the narrative story. These advantages of multimedia provoked students' interests and motivation to persist on reading for comprehension. Both motivation and the different resources of information incite students' imagination and expectation which means that students were capable of wider and more accurate prediction and supported their ability to realize the relation between what is written and what is meant. So, they could come to the best form of inferred information. Digital storytelling technique took learning to a whole new dimension, beyond teacher-centered lectures to teacher facilitated explorations, utilizing sight, sound, and touch. Digital storytelling could help students to have a distinct background and point of view about what has gone in each paragraph, making a story map out of a text by putting the pictures in right order as provided by the IWB and use the process model of reading. Students comprehend better when watching and listening, than when listening alone. Readers who have other sources of information read more comprehensively than readers using only the printed text. The integration of text with sound and images eventually paved the way for greater comprehension of the reading text, as well as better pronunciation and contextual use of lexical items in a way that instructional paper-based texts could not achieve.

Conclusion:

The use of digital storytelling has a positive effect on EFL students' reading comprehension skills, so it is worth to use this technique to teach reading as a language skill. Based on the finding of this study the researcher emphasizes that further investigation is needed to ensure the possible effect of digital storytelling on EFL students' language skills and sub-skills, such as, listening, speaking, writing, grammar and vocabulary.

References:

1. Alkhlili, M. (2018). Using Digital Stories for Developing Reading Skills of EFL Preparatory School Pupils. Multi-Knowledge Electronic Comprehensive Journal for Education and Science Publications, 4, 129-138.

2. Alshrari, A. (2015). The Effect of Digital Storytelling on EFL Second Intermediate Students' Reading Skills in Saudi-Arabia. (Unpublished master Thesis). Yarmouk University.

3. Anggeraini, Y., & Afifah, N. (2017). Digital Storytelling as a Teaching Medium in Reading Classroom. Journal of Language and Literature12(1), 145-160.

4. Apriltya, R., & Arifin, Z. (2016). The Use of Digital Story in Teaching Reading Narrative Text for SMP Students. Computer Science 5(4).

5. Badr El-Deen, Z. (2009). The Effectiveness of Assisted Extensive on Developing Reading Comprehension Strategies for Ninth Graders in Gaza Governorate. (Unpublished M.A. Dissertation). Gaza: Islamic University.

6. Choo, Y., Li, K., Redzuan, N., & Shamsuddin, S. (2017). Using Digital Story to Improve Primary School Pupils' Understanding of Poem. UNY Press, 228-239.

7. Cox, R. (2011), Primary English teaching. An introduction to language, Literacy and Learning, London: Sage

8. Dewi, A. (2017). Designing Supplementary Reading Material using Integrated Digital Storytelling for the Tenth Grade Students of SMA Negeri 1Cangkringan. (Master Thesis). Sanata Dharma University, Yogyakarta, Indonesia.

9. Effect. (n.d.). In American Heritage Dictionary. Retrieved from http://www. American Heritage.com/dictionary/effect

10. Ellis,G.,& Brewster,J.(2002). Tell it Again!: The New Storytelling Handbook for Primary Teachers. Harlow: Penguin English.

11. Grellet, F. (1981). Developing Reading Skills. Cambridge: Cambridge University Press.

12. Grellet, F. (1995). Developing reading skills, CUP, UK: Cambridge.

13. Haboush, Z.(2010). The Effectiveness of Using a Programme Based on Multiple Intelligences Theory on Eighth Graders' English Reading Comprehension Skills, (MA thesis). The Islamic University of Gaza, Gaza.

14. Hamdy, M. (2017). The Effect of Using Digital Storytelling on Students' Reading Comprehension and Listening Comprehension. Journal of English and Arabic Language Teaching, 8(2), 112-123.

15. Handler Miller, C. (2008).Tales from the Digital Frontier: Breakthroughs in Storytelling. Writers Store .

16. Holtzman, S. (1997).Digital mosaics: The aesthetics of cyberspace. Touchtone: NY.

17. Ishtaiwa, F. F., & Shana, Z. (2011). The use of interactive whiteboard (IWB) pre-service teachers to enhance Arabic language teaching and learning. Learning and Teaching in Higher Education: Gulf Perspectives, 8(2), 1- 18.

18. Jouini, K. (2006). Strategies Inference in Reading Comprehension. Journal of King Saud University. Languages and Translation, 18(1), 123-134.

19. Kiddey, P. (2001). Reading strategies for success. Heinemann: Heinemann Education.

20. Radaideh,E., Al-Jamal,S., & Sa'di,D. (2020). Digital Storytelling: Time to be Considered in Reading Comprehension, Universal Journal of Educational Research 8(6): 2621-2633.

21. Signes, C. (2008). Integrating the old and the new: Digital storytelling in the EFL language classroom. GRETA Journal, 16(1&2), 43-49.

22. Snow, C. (2002). Reading for Understanding.Toward an R&D Program in Reading Comprehension. Santa Monica, CA : RAND,7.

23. أبو جراد، حمدي. (2013). قوة الاختبارات الإحصائية وحجم الأثر في البحوث التربوية المنشورة في جامعة القدس المفتوحة للأبحاث والدراسات. مجلة العلوم التربوية والنفسية، 14(2)، 349−368.

24. المصري، محمد .(2009). العلاقة بين استراتيجيات التحصيل الأكاديمي لدى طلاب وطالبات كلية العلوم التربوية بجامعة الإسراء الخاصة. مجلة جامعة دمشق للعلوم التربوية، 25(4+3)233−245 .

25. حسن، عزت عبد الحميد محمد. (2011). الإحصاء النفسي والتربوي: تطبيقات باستخدام برنامج spss18. القاهرة: دار الفكر العربي.