
RESEARCH ARTICLE

Digital Stories for Enhancing Palestinian Refugee School Children's English Reading Micro-skills: Action Research Study

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ABSTRACT

This action-research-based study aims to investigate the effect of digital stories on students' English micro-skills of reading by designing a series of seven digitized stories based on the seven themes covered in *English for Palestine*, fourth grade. A digital story is a newly recognized technique in teaching that is believed to improve students' learning and make it more real and meaningful. It is a technological facility that allows storytellers to accompany their scratch stories with different sorts of multimedia such as video clips, recorded audio, computer generated text and music so that they can be played on learners' computers and mobiles. The specific objectives of this research are to identify students' English micro-skills of reading, to illustrate how reading micro-skills-based digital stories can be designed, to illustrate how these stories can be used as a medium to develop English micro-skills of reading and to evaluate the outcome of this technique on these skills. This research study adopted a descriptive analytical approach using a mixed-methods design. The study employed two primary data collection instruments: pre/posttests and reading assessment sessions, and three secondary ones: field notes, comprehension worksheets, and parental reports. The sample consisted of 84 children from UNRWA Biet Lahia Elementary School in North Gaza. The researcher examined the effect of digital stories on students' English reading micro-skills in the experimental group while maintaining the traditional teaching techniques with the control one. The findings revealed that digital stories can largely enhance students' English micro-skills of English. Additionally, it promotes students' motivation, critical thinking skills, self-confidence and enthusiasm. The researcher recommended further studies in this area with adequate preparation and planning during the whole process of action research.

KEYWORDS

Digital story, Reading micro-skills, Storytelling, Action research, Palestinian Refugee children, fourth grade

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1. Introduction

1.1 Digital Story

It is noticeable that employing computer technologies would bring practical and authentic opportunities to teaching and learning. Cope and Kalantzis (2010) suggested that the insertion of technological tools and facilities can achieve higher levels of performance and motivation which leads to better learning. Salkhord et al. (2013) also emphasized the role of CALL, Computer-Assisted Language Learning, in enhancing the educational environments and teaching and learning processes. It provides teachers with a wide range of options that facilitate their tasks and promote positive interactions. In the same respect, Barth (1990) argued that the use of multimedia-based instruction grants students 80% retention rate, while using visuals only allows them a 20% retention rate, as mentioned in Salkhord et al. (2013).

Since stories are broadly common in educational literature (Zaytoun, 1988; Kaderavek & Justice, 2002; Isbell et al., 2004; Al-Mansour & Al-Shorman, 2011; Abdolmanafi-Rokni & Qarajeh, 2014), the researcher believes in the significance of enhancing students'

reading micro skills through attempting new methods such as digital stories. Basically, digital story warrants teachers to become innovative storytellers by initially selecting a theme, writing a script, and developing a stimulating story. This material is then joint with several types of multimedia, including visuals, recorded audio, computer-generated text, video recorder, and music so that it can be played on a computer (Robin, 2008). One of the most popular stories that have been digitized is *The Very Hungry Caterpillar* by Eric Carle (Carle, 2000).

During their learning, students might feel trapped in the artificial atmosphere of language classes. They may show low levels of interaction as little involvement and poor participation may negatively influence their learning. Digital stories can foster a student-centered environment which allows learners to express themselves authentically and genuinely (Rance-Roney, 2008). It is worth mentioning that the researcher expects this recent technique to suit *the Authentic Assessment*¹, the newly established assessment system at United Nations Relief and Works Agency for Palestine Refugees (UNRWA) schools.

1.2 The Research Problem

The idea of this research emerges from the researcher's teaching experience during the past four years. As a teacher of English as a foreign language, she has observed a general weakness in students' reading skills in general and their micro-skills of reading in particular. She built on students' results during the first semester to ensure the existence of the problem. To do so, she compared students' marks and performances in reading skills and other language skills and found that most students got the lowest mark for reading skills, as illustrated in Figure (1.1). It compares the mean marks of all four language skills and indicates the nasty drop in reading marks in comparison with other language skills. Students are penetratingly in great demand for developing these reading skills so that they can advance other academic aspects during their lives. Reading is the mother of all skills as it paves the way towards deeper knowledge and continuous learning. During their learning, students might feel stuck in the artificial atmosphere of language classes. As a result, they may show low levels of interaction. Little involvement and poor participation may negatively influence students' learning. The research experiment will provide students with authentic learning contexts and digital stories, which are expected to arouse their motivation and remedy their weakness in reading English micro-skills.

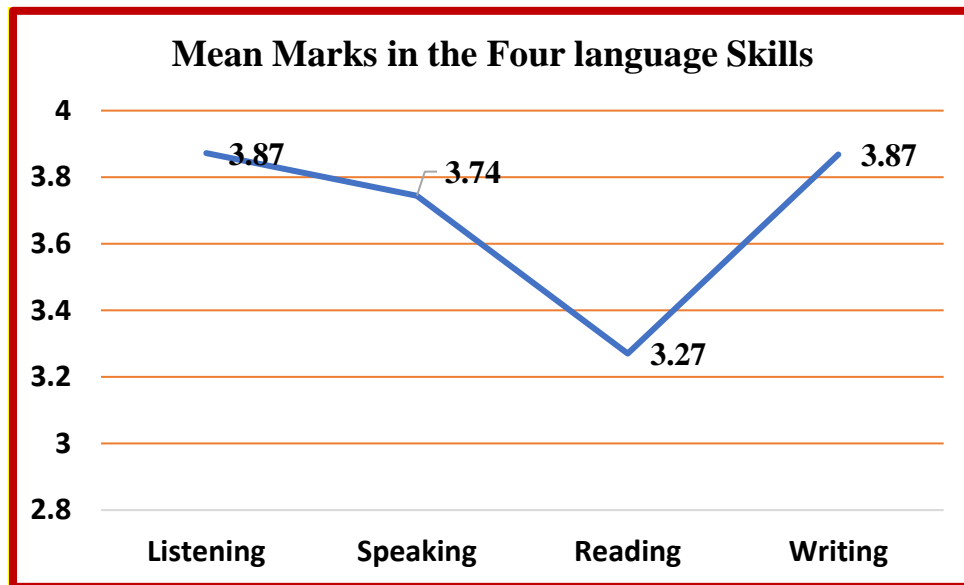


Figure (1. 1): Mean Marks in the Four Language Skills

1.3 The Purpose of the Study

The purpose of this research is to design and use digital stories to attempt to enhance Palestinian fourth graders' English micro-skills of reading identified in the *English Language Curriculum for Public Schools grades 1-12* (2015, p32) and also defined in *English for Palestine Grade 4* (Teacher Book) (Ministry of Education and Higher Education, 2011). These micro-skills are recognition of English script or handwriting, answering factual questions about reading material, recognition of pronoun referents and reading and understanding new and familiar material. The researcher attempted to fulfill this by identifying students' English micro-skills

¹ Authentic Assessment: Wiggins (1990) stressed the issue of contextualized assessment and its relation with making the learning process more authentic. He focused on the importance of creating learning environments that drive students to think at the same high levels of complexity they usually work when confronting real life problems and obstacles. This, according to him, is the real meaning of authenticity.

of reading, illustrating how they can be improved by enriching the Palestinian fourth grade English textbook with digital stories and evaluating the impact of this action on these skills.

1.4 The Objectives of the Study

1. To identify the EFL reading micro-skills Palestinian fourth graders are expected to develop.
2. To design reading micro-skills-based digital stories using quality criteria and steps.
3. To use micro-skills-based digital stories as a medium in EFL classrooms to develop children's English micro-skills of reading.²
4. To identify the impact of digital stories on the development of Palestinian children's English reading micro-skills.

1.5 Research Questions

This action research aims to answer this main question and the more specific questions:

1. To what extent can digital stories develop Palestinian children's reading micro-skills of English?
 - a) What are the English reading micro-skills the Palestinian fourth grade English textbook intends to develop?
 - b) How can digital stories be designed using quality criteria and steps?
 - c) How can digital stories be used to develop Palestinian fourth graders' reading micro-skills of English?
 - d) What is the impact of using digital stories on the development of Palestinian children's English reading micro-skills?

2. Literature Review

This action-research-based study aims to investigate the effect of digital stories on Palestinian fourth graders' English micro-skills of reading by designing a series of seven digitized stories based on seven themes covered in *English for Palestine*. This part briefly reviews the literature on reading micro-skills, summarizes the educational value of stories in EFL classes and tackles digital stories as a tool for teaching language in general and reading comprehension in particular.

2.1 Micro-skills of Reading

As a skill, reading has been viewed differently by researchers and experts: reading is a unified skill that cannot be split into minor sub-skills (Alderson, 1990), reading consists of many sub-skills (Stephenson & Harold, 2009) and reading comprehension is a collection of several micro-skills combined together (Zarei & Pedram, 2018). This last view considers students' level of comprehension an indicator of their capability of the micro-skills of reading they acquired.

Along a similar line, Hughes (1989) highlighted the difference between micro-skills and macro-skills of reading comprehension. As the name suggests, macro refers to understanding general ideas in the text, like information, proof, and basis. On the contrary, micro implies analyzing and interpreting the linguistic features of the text, e.g. word meanings and discourse indicators.

Hughes embraces the belief that micro-skills must be taught as means to reach and fulfill macro-skills.

2.2 Stories in EFL Classes

Hamilton and Weiss (2005) and Pederson (1992) consider storytelling as the original form of education. Everyone has a story to tell, as we are instinctively born with the ability to tell stories. Since stories can touch students' hearts before their minds, they are recognized as deeply appealing and motivating. Wells (1986) suggested that the process of building stories in the mind is a meaning-making process. Consequently, children can more easily link their pieces of knowledge together when they come in a story form.

Using stories in EFL classes is a privileged practice that can create motivating and productive learning environments (Harrasi, 2012; Ebrahimnejad et al., 2014 & Hamilton & Weiss, 2005). These findings are consistent with Elley (1991), who argued that providing students with interesting contexts for learning would reinforce subconscious and positive learning. Similarly, Ghasemi & Hajizadeh (2011) confirmed the tight relationship between literature and entertaining reading. They clarified that reading with literary input like stories, students have to read between the lines, which can facilitate the readers' top-down process.

Despite the reliable educational value of stories that have been widely proved by scholars (Zaytoun, 1988; Kaderavek & Justice, 2002; Isbell et al., 2004; Al-Mansour & Al-Shorman, 2011; Abdolmanafi-Rokni & Qarajeh, 2014), stories are still not being used in classes which could be due to lack well trained or motivated teachers (Fojkar et al., 2013)

² ESL (English as a second language) refers to a kind of English classrooms where English is the dominant language in the country and students are visitors. They do not usually share a native language or culture, but they need to learn and use English practically. EFL (English as a foreign language) is another kind of English classrooms where English is not the dominant language and students usually have the same language and culture (Oxford University Press, 2011).

An additional advantage of stories is stated by Bence (2017), who pointed out that the use of stories can make the learning process more authentic. Gregori-Signes (2014) equally believed that digital story allows students to perceive and assess their world authentically. Similar advantages are mentioned by Glassner (2004) and Mello (2000), who argued that stories help learners appreciate their own culture as well as other cultures and thus better recognize the world around them. Bence (2017) added that stories could provide an excellent context for practicing all four learning skills with young learners (reading, speaking, listening and writing). Yet, the objective of the EFL lesson directs which language skill to focus on more.

The findings of Marsh (1986) also revealed that the art of storytelling can drag the listeners' attention into new areas, which leads to reforming their knowledge and insights. He correspondingly presented the relation between storytelling and developing imaginative skills, as this art can stimulate students' imagination and encourage them to leap to higher cognitive levels.

2.3 Digital story and language skills

A digital story is a beneficial teaching tool that facilitates language learning and develops language skills. Similarly, Christiansen & Koelzer (2016) found that digital stories can enhance students' literacy and language skills. These findings had previously been declared by Clarke & Adam (2011), who considered digital stories a sophisticated tool for communication, teaching, research and personal reflection. According to them, it allows students to advance a wide range of learning skills, literacies and academic abilities. Dong (2015) harmoniously stated that digital stories had a positive impact on students' language and learning skills. This can be related to what Isbell et al. (2004) observed concerning the effect of storytelling on students' linguistic skills and comprehension. They concluded that digital stories can support students' understanding and develop their language.

It is safe to predict that employing computer technologies would smooth students' understanding generally and their reading comprehension skills mainly. This concept has been deeply investigated by a group of studies. Moran et al. (2008) and Salkhord et al. (2013) specified that the implementation of digital technologies (e.g. CALL and digital story) would foster students' reading comprehension skills. This is consistent with Ghasemi & Hajzadeh's (2011) findings about digital story effectiveness in increasing students' comprehension rate. Moreover, Cope & Kalantzis (2010) detailed that the insertion of technological tools and facilities can achieve higher levels of performance and motivation which leads to better learning.

3. Methodology

3.1 Research Design

This research study adopted a descriptive analytical approach using a mixed-methods design. The researcher adopted this design in order to meet the nature of the research, which aimed at finding the effects of using digital stories on improving Palestinian children's English reading micro-skills. To achieve this aim, two groups were selected, an experimental one and a control one. The experimental group was taught reading through the use of digital storytelling (with treatment), and the control group was taught reading through the traditional method (without treatment), as demonstrated in Figure (3.1).

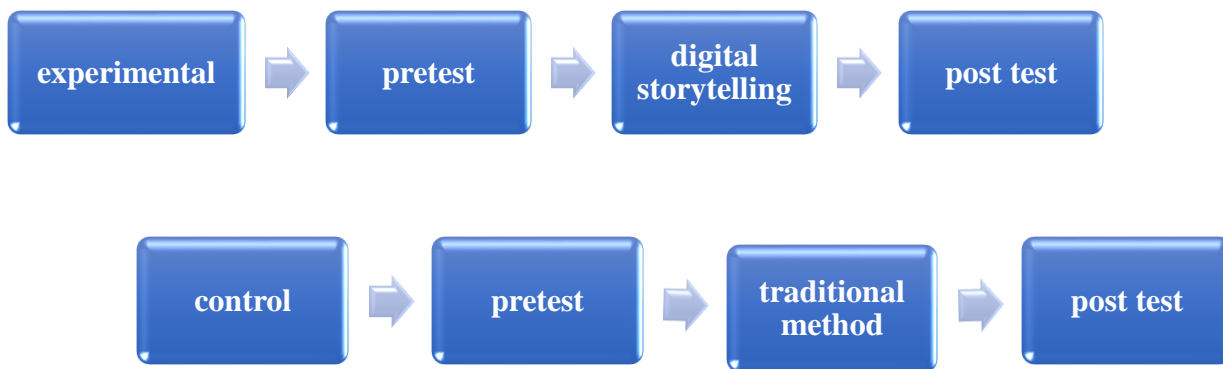


Figure (3. 1): Research Design

3.2 Data collection instruments

This research project aimed to investigate the extent to which digital stories can develop reading micro-skills of English by answering these sub questions (a) What are the English reading micro-skills the Palestinian fourth grade English textbook intends to develop, (b) How can digital stories be designed using quality criteria and steps, (c) How can the digital story be used to develop

Palestinian fourth graders' reading micro-skills of English, and (d) What is the effectiveness of using digital story on the development of Palestinian children's English reading micro-skills? To this end, five data collection instruments were used: pre-/posttests, field notes, parental reports, reading assessment sessions and comprehension worksheets. To answer the question a, a table of English reading micro-skills a fourth grader needs to develop was produced early in chapter 3, table (3.5). To answer questions b and c, field notes and comprehension worksheets were used. And to answer question d, parental reports, reading assessment sessions and pre-/posttests were administered.

3.2.1 Pre-/Posttests

Before the experiment, pretests were administered to the three groups to choose the study groups building on their exam results. The two groups that showed similar performances were chosen as a control group and an experimental group, whereas the third one was considered as a piloting group. During the experiment, a series of seven tests were carried out after each of the seven educational units to measure and compare students' progress after implementing each digital story.

A pre-/post reading micro-skills test was prepared by the researcher to measure the students' reading skills in both the control and experimental groups. Being used as a pre-test, it aimed at proving that both groups were equal in terms of reading skills. Then being used as a post test, it aimed at identifying any possible difference in the achievement of both groups.

After the first trialing of the digital story on the experimental group, it was noted that students showed high levels of creativity in answering the teacher's questions that demanded higher order thinking skills (HOTs). As a result, the researcher decided to add a question in the coming posttests to examine students' HOTs. The question was meant to measure students' capability of transferring the knowledge they got out of reading in several creative forms, e.g. tables, diagrams, and drawings.

3.2.2 Field Notes

A workshop was held to inform the English team at Beit Lahia School about the purpose of this research as well as the themes they need to observe while attending the digital story lessons. They similarly were familiarized with certain kinds of behaviors to list, e.g. fidgeting, smiling, uttering words, questioning their peers or any possible changes in their facial expressions or body movements. The teacher observation sheets were completed either by the researcher or by her colleagues. While playing the digital story, the teacher took notes of students' reactions, state of mood, questions, and difficulties. She took these notes first on the piloting group so that she could make some modifications before undergoing this with the experimental group. Equipped with these observations every time, the teacher was able to assess the delivery of the digital story and to document students' interaction with the digitized material. Some EFL teachers who shared the digital stories with their students said that:

I shared these brilliant stories with my students. Students in the fourth grade were extremely engaged and motivated as this kind of storytelling provides them with an opportunity to explain and illustrate abstract ideas and concepts in a way that makes them more approachable and accessible. The stories offer a vehicle to bring facts to life and to make the abstract concrete. Your efforts were extremely clear, and your aim was successfully achieved.

Another teacher considered herself privileged for having the digital series. She showed enthusiasm about presenting the digital stories to her students, and she explained their reactions as follows:

I showed some videos to my students, and they reacted very positively. I feel lucky because I got these valuable videos and stories, and I will definitely show my learners the rest of the videos later. The stories are really attractive and useful. Using stories in teaching a second language is very exciting. It motivates learners and increases their desire to learn. The most beautiful thing is that the stories in these videos are short, and their language is simple, which makes them suitable for fourth grade students.

A third EFL teacher emphasized the importance of digital stories for improving students' language and thinking skills by offering them a relaxed atmosphere of learning.

Analyzing the comments later helped the researcher to know whether she was still on the right track. Corwin and Clemens's (2012) model of analysis was followed during the process of collecting and analyzing the field notes. Other sheets were filled in by some colleagues in the same school, who observed students' reactions while watching the digital story. As this data collection instrument was applied several times by different people (including the researcher, her colleagues at the same school, and her colleagues and friends at other schools), this can be seen as *investigator triangulation*, which means using multiple observers to reach the same findings (Mackey & Gass, 2005).

3.2.3 Comprehension Worksheets

After the first implementation of the digital story on the piloting group, the researcher figured out the urgent need to prepare some guiding questions for directing students' comprehension of the story. She found that the children needed the questions to guide their understanding, and she wanted them to assess their comprehension. So, for each digital story, a written worksheet was prepared to be completed by the students while watching the video. The worksheet consisted of two main parts. The first was for checking students' comprehension of the story events, and it included objective questions (e. g., true/ false, choose, and complete) for evaluating students' mastery of reading micro-skills through the story context. The second part was for eliciting students' attitudes or opinions concerning the story.

During the implementation of the experiment, the teacher asked the students to write about their feelings towards the digital stories. As fourth graders and non-native speakers of English, unfortunately, students were not able to express themselves properly in English. Their attempts were a mixture of poor English and Arabic. The teacher found this procedure not rather sufficient for research purposes, yet very valuable for the students. As a result, she demanded the students to keep the diaries for themselves and write them the way they liked.

To replace the students' diaries, the teacher specified the second part of the worksheet for eliciting students' feelings or attitudes concerning the digital story. Inserting one controlled question to elicit students' attitudes was much easier than a prolonged diary. Besides, she planned to request parental help with this concern.

3.2.4 Parental reports

After completing the whole series of digital stories in parallel with the end of the scholastic year, the teacher made some contact with the student's parents and sent them a report form to fill in. At the top of the report appears an introductory sentence where a space was provided for writing the parent's name, followed by a request to complete the report. The report consisted of three questions that sought the parent's observations, attitudes, and comments on their kids' performances after being exposed to the digital stories. The parental reports were sent with the kids of the experimental group to 42 of their parents. Only 40 reports were received and analyzed. These parents were contacted via Facebook to further explain the purpose of the reports, answer any questions concerning digital stories, and discuss suggestions and comments. It is worth mentioning that the teacher had also made a YouTube channel and shared the digital stories with the students' parents so that they could provide adequate feedback.

3.2.5 Reading Assessment Sessions

To make sure that students in the experimental group really had better reading performances, help was requested from colleagues in the school. Two of the researcher's colleagues assessed students' reading performances by taking random students of the same level from both groups. To elaborate, students were classified according to their levels of English language skills in general. Then, a comparison of students' performance was held between two students within the same level from both the experimental and the control groups. One excellent student from the experimental group was picked to be compared with another excellent student from the control group in terms of reading. This procedure was repeated with students from other different levels.

3.3 Material

The researcher designed a series of seven digital stories drawing on the themes of the units in the student's book of *English for Palestine Grade 4* (Ministry of Education and Higher Education, 2011). These digitized stories were assessed by a panel of expert referees before being used during English classes as a medium to improve students' reading micro-skills. Most of the stories were written by the researcher herself to suit the content of the Palestinian curriculum and the students' linguistic needs and levels, values, and culture. The digitized material came in seven short videos. One story only was picked from YouTube and modified to suit the students' needs. The story name is *Spot Bakes a Cake* by Eric Hill, and it was modified to suit the theme of making a cake in unit 11 in the student's book. The process of developing the digitized material will be further explained in (3.7) section below.

3. 4 Procedures

This research followed the cycle of action research, as illustrated by Mertler (2009). The process was organized into nine procedures: problem identification, gathering information, reviewing the related literature, developing a research plan, implementing the plan and collecting the data, analyzing the data, developing an action plan, communicating the results, and reflecting on the research process. Although they are clearly arranged, it is not necessary to stick to this cycle in the same order all the time. In other words, one of the most distinguishing features of action research is its flexibility and out of this cycle, an unlimited number of cycles might emerge (McNiff, 2010).

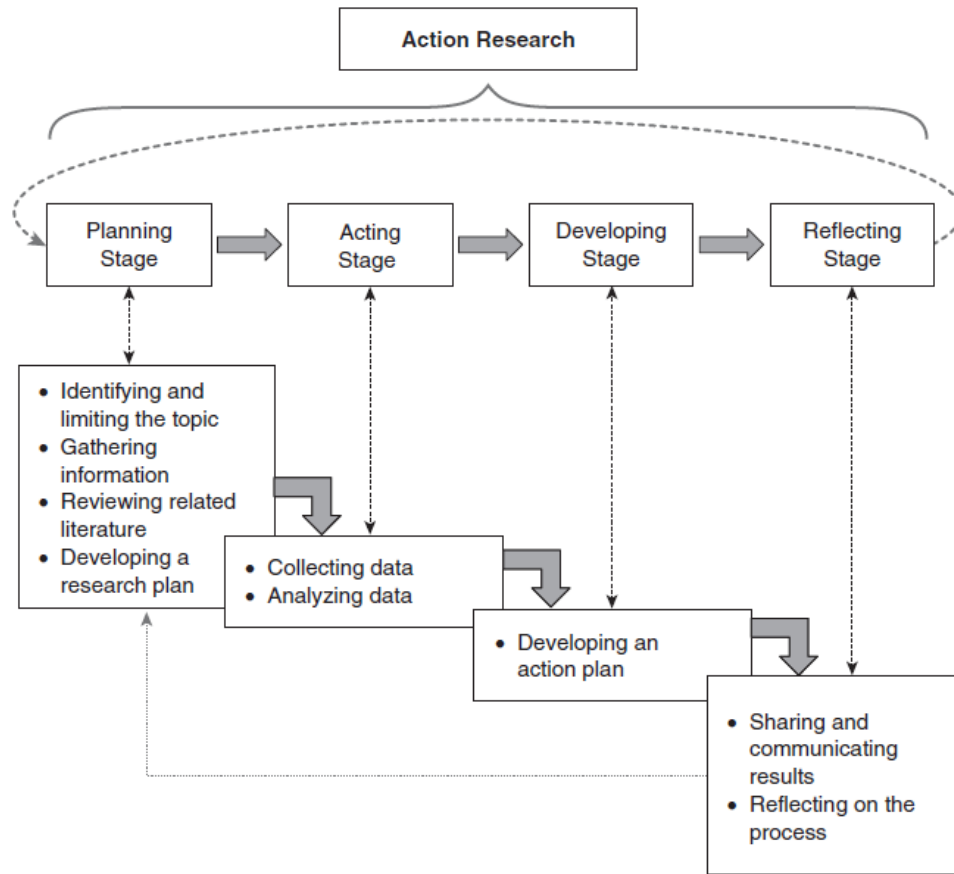


Figure (2. 1): Action Research (Mertler, 2009)

- a) Problem identification: The researcher observed a clear weakness in students' reading skills in general and their micro-skills of reading in particular. She built on students' results during the first semester of the scholastic year (2018-2019) to ensure the existence of the problem. To do so, she compared students' marks and performances in reading skills and other language skills and found that most students got the lowest mark for reading skills, as illustrated in Figure (3.2) below. The researcher decided to plan for a change (action) in the process of teaching reading micro-skills. At this early stage, she knew that she was going to make use of technology, yet she did not realize which technological facility to pick for achieving the desired change.

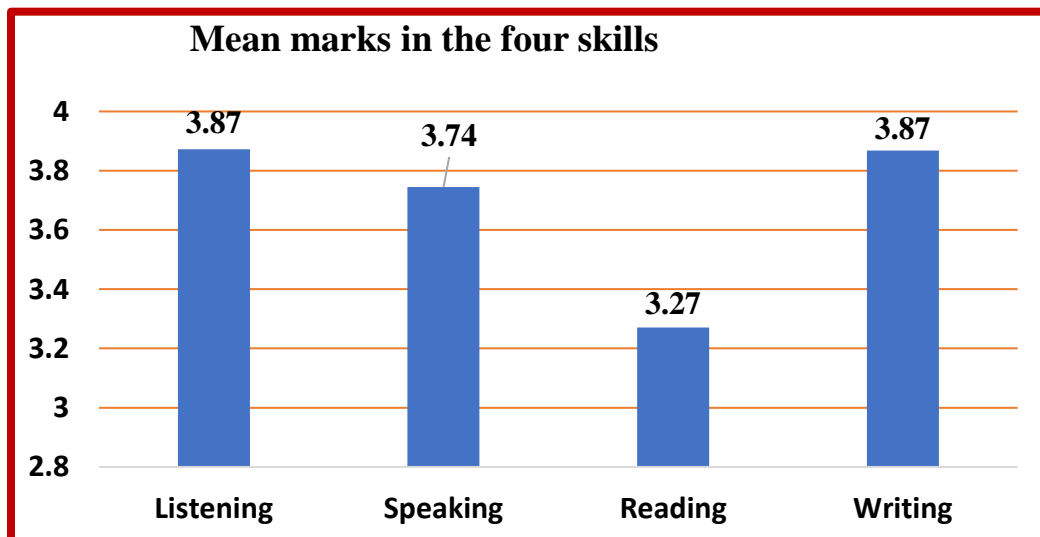


Figure (3. 2): Students' marks in the four language skills

- b) Gathering information: As soon as realizing the problem, the researcher started talking to her thesis supervisor and her school colleagues about the problem and the possible solutions. The existence of the problem and the urgent need for a change was confirmed. Data about students were collected by administering a pre-test to determine their levels and to ensure no statistically significant divergence in their performances. Reflecting on her own ideas, the researcher started to organize them more neatly and sufficiently to fulfill the wanted change. After this stage, the researcher was able to express the research problem, context, and some clear headlines on her research plan.
- c) Reviewing the literature: Since she identified the problem and the method of change, the researcher started doing some research on three main areas, action research, the most recent methods for teaching reading, and the best technologies for education. The supervisor approved the implementation of digital stories as a medium to enhance students' micro-skills of reading. It was found that little research was conducted on digital stories in general and no research in the problem context. Therefore, the researcher submitted her proposal to conduct her study in this area. As a result, the research direction was specified to digital stories as a new technology for developing language skills. At this phase of the study, the researcher decided on the most relevant programs for her action and started learning them. Two programs were chosen for building the digital stories, story board and movie-maker. A set of data collection instruments has been proposed for later use.
- d) Designing the research plan: First, the research question/questions were decided to draw on how to determine the rest of the methodology (Mertler, 2009). Four main questions were established, as shown in section (3.1) above. Inevitably, two study variables were included in the statement of the research questions, the independent variable, digital story/traditional teaching method and the dependent one, English micro-skills of reading. The data collection instruments and the research ethics were more accurately decided at this point. The researcher made use of several data collection instruments before, during and after the action, as clarified in the data collection instrument and population and sample sections above. Designing the material was particularly done at this time of the research in order to be ready for later use on students. These steps were followed while designing the series of digital stories:
 1. For each unit, a list of the reading micro-skills was made to build the story content according to them. This procedure was repeated for all 1st semester units in the student's book. According to *English Language Curriculum for Public Schools grades 1-12* (2015), fourth graders are expected to recognize English scripts and handwriting, answer factual questions about reading materials, read and understand new and familiar material, and recognize pronoun referents. A list of reading micro skills is made and organized in the table (3.5) (Ministry of Education, 2015).

Table (3. 1): Reading Micro skills

Unit	Reading Micro skills (objectives)	Cognitive level
A new friend	Recognize the language pattern (I have + family members)	Comprehension
Our house	1. Recognize new vocabulary. 2 .Choose correct answers	Recall Application
Lost!	1. Recognize new vocabulary 2. Choose correct answers	Recall Application
Revision	Reading comprehension	Hots
On Sundays I	Recognize the new words.	Recall
At the restaurant	Word square	Hots
Visiting Palestine	1. Recognize the names of Palestinian cities and famous places. 2. Answer factual questions on reading material about famous places in Palestine.	Comprehension Comprehension
Let's make a cake.	Recognize and use cake vocabulary.	Application
It's 7.30	Read and Understand the structure (time)	Application
Good habits	Create sentences	Application

Revision	1. Match questions and answers Read instructions 2. Read a puzzle 3.	Application Comprehension Hots
I can do it!	Form collocations	Hots
In my street	Read aloud 1. 2. Understand directions	Recall Application
On the farm	1. Match pictures and sentences 2. Find vocabulary in word square 3. Choose correct words	Application Hots Hots

- +Building on the themes of the units, the scripts of the stories were written. Appropriate simple language was used to match the needs of fourth graders. This issue was further discussed with EFL teachers at Beit Lahia School. Consequently, the scripts of the story were largely simplified with the help of the school teachers.
- After surfing the web for the best and most feasible video-making programs, the researcher decided to use a story board for drawing the scenes of the story and a *moviemaker* to add texts, music, and sounds. *Storyboard* is an attractive platform for developing narratives as it allows the designer to pick his/her characters and make all the possible changes, e.g. skin color, hair color, eye color, clothing and poses, as indicated in Figure (3.3). *Storyboard* likewise offers a variety of scenes with an unlimited number of options and adaptations, as described in Figure (3.4). After developing the storyboard, the researcher saved the images in alphabetical order on a separate file so that she could upload them to the moviemaker in the same order. On the moviemaker, the researcher added the story scripts either in the bottom banner or as a conversation between the characters of the story, as displayed in Figures (3.5) & (3.6). Then, she added background music.

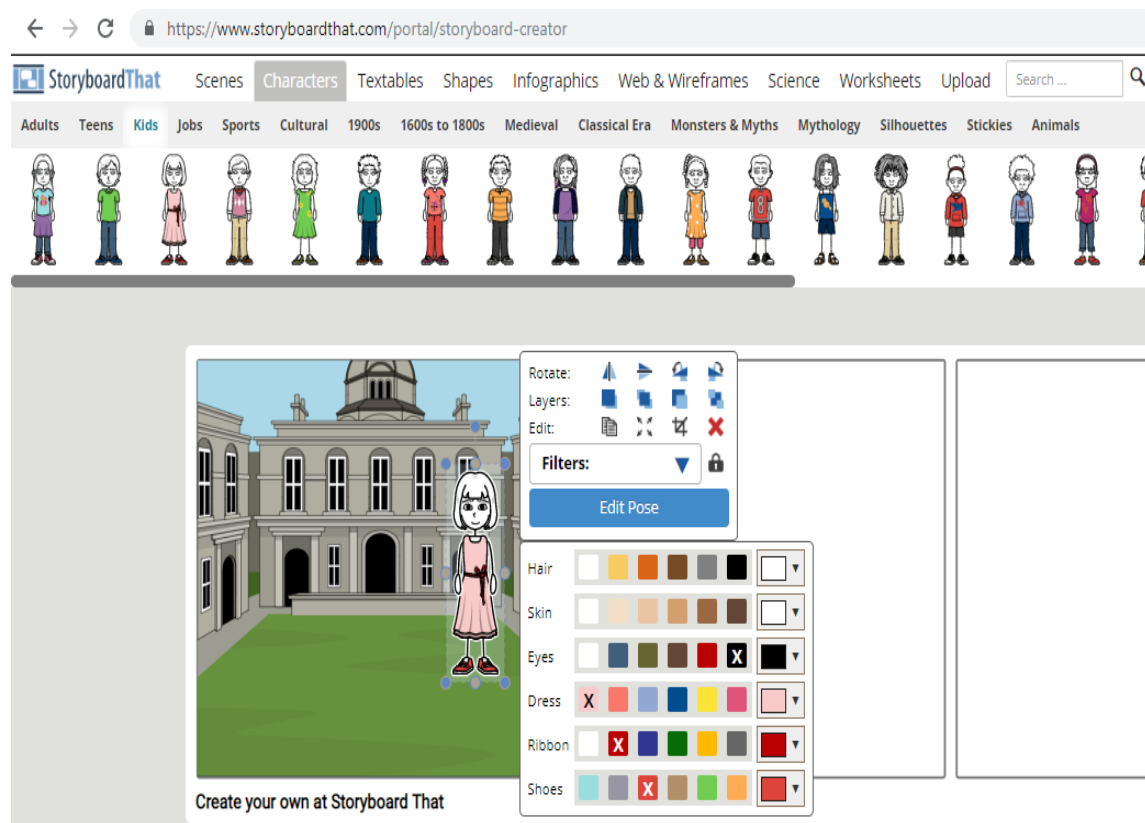


Figure (3. 3): Characters

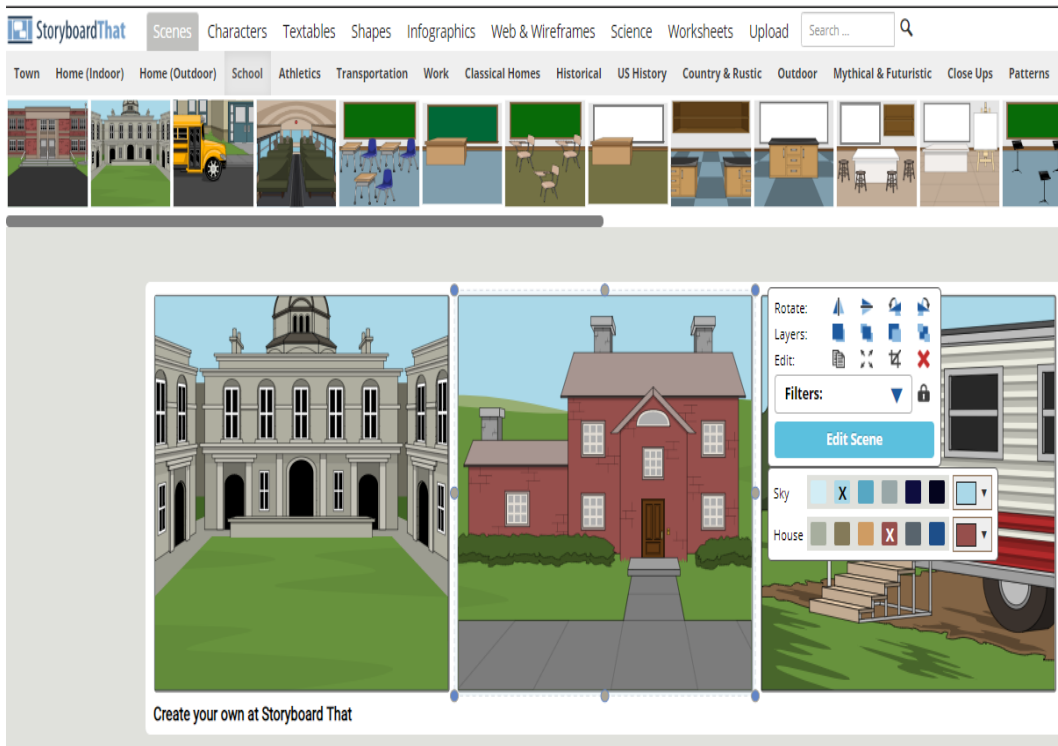


Figure (3. 4): Scenes



Figure (3. 5): The bottom banner



Figure (3. 6): Conversation

- e) Publishing the video: After making all the desired changes and modifications to the digital story, the researcher saved the project as a movie. The first part of the movie contains the previously learned vocabulary and structures with the researcher's voice. The second displays the story events with a written description in the bottom banner or a conversation form. As an example of this, a digital story titled *On the farm* is uploaded here <https://www.youtube.com/watch?v=0ARZ7Pq1nlo&t=67s>

The link to the full series

https://www.youtube.com/channel/UCsmDdFTzXSiEJ8hPAL2otew?view_as=subscriber

The digital stories were refereed by a panel of judges.

- f) Implementing the plan and collecting the data: By the beginning of the second semester of the scholastic year 2018-2019, the digital stories were displayed using a lab top and LCD regularly after the completion of each unit. The first trialing was done on the piloting group. This procedure was designed to assess the quality of the study implementation, e.g. the video clarity, voice, speed, number of repetitions needed, or any other editions. Along with each experimentation, a worksheet was distributed to assess students' comprehension and elicit their attitudes toward the digital story. Observation sheets were simultaneously filled in by the researcher and one of her colleagues to evaluate the delivery of the videos and to reflect on students' levels of involvement. After watching the digital story, students of the experimental group were set for a test in that unit. Students in the control group were similarly set for the same test after each unit. Parental reports were also filled in at that segment of the study. Furthermore, the digital stories were uploaded to a YouTube channel to allow learners to watch them several times with their parents. https://www.youtube.com/channel/UCsmDdFTzXSiEJ8hPAL2otew?view_as=subscriber.
- g) Analyzing the data: As action research is a continuous process of assessment by tracking the change/action and regularly checking if it fits the desired improvements (McNiff, 2010), data were always interpreted qualitatively and quantitatively during

the process of implementation. The first round of data collection was accomplished early when the researcher compared students' reading skills to other language skills. She built on this stark difference in the means of their marks to show weakness in their reading skills and justify the need for a change in the process of teaching reading. The data elicited from the worksheet was constantly and qualitatively analyzed to evaluate students' comprehension and made the demanded modifications. Regular exams were also graded and analyzed quantitatively to assess students' development and highlight common themes among the experimental group students. The means of these exams were calculated immediately to record any improvements, as clarified in the statistical analysis section (3.7) below. Parental reports were analyzed qualitatively, and some of their recommendations were reconsidered by the researcher, e.g. some parents asked the researcher to enable them to watch the digital stories, which made the researcher publish them on a YouTube channel.

- h) Developing an action plan: At this point of research, the researcher was able to arrange her plan together in paper form. It is a documentary step where the researcher starts organizing her thesis to enable other researchers to benefit from her research criteria. Here, the researcher provided her model of action research and presented enough details about each step in order to produce a comprehensive representation of her action and encourage future research. She did her plan in light of the literature review and the analyzed data.
- i) Sharing and communicating the results: Interpreting the data, the researcher was able, to sum up the results of her action research. She hopes to publish a paper in an academic journal and or/ participate in a local or international conference to share and disseminate the results. As the researcher shared her digital stories with colleagues and friends, she received positive and encouraging comments. EFL teachers at UNRWA and governmental schools provided the researcher with valuable feedback, as illustrated below:

-It is really great work and had lots of effort from the researcher to appear in this attractive and motivating way for the students. I recommend the researcher share these enjoyable stories with the Palestinian teachers in ELT Palestinian groups on Face Book to be used in teaching after the thesis defense.

- The stories are amazingly fruitful as well as amusing. Revising some core words is very helpful for children to be ready to read more confidently. Also, the pictures are very catching and interesting. Besides, the voice is very clear, and the music is very relaxing and so suitable for the atmosphere of reading.

-No one can deny the impact of digital storytelling in engaging and motivating students. Creating digital stories in the classroom is a powerful instructional technique that has the potential to transform learning for students.

- j) Reflecting on the process: Summarizing the results, the researcher was ready to arrange them as conclusions and recommendations as précised in chapter 5. At this level of achievement, the researcher can relate the results to the research context and circumstances. This warranted her opportunity to express the results eloquently in order to match the local needs of the study population. On the other hand, she can make more connections and links to a larger slice of the population by generalizing the results.

3.5 Statistical Analysis

The data from the reading test were collected, computed, and analyzed by using Statistical Package for Social Sciences program (SPSS). The significance level used was (0.05). The following statistical techniques were utilized:

- Percentages, relative mean ranks, Mann Whitney-test and frequencies were used to determine the level of achievement of the control and the experimental groups.
- Pearson correlation was used to compute the validity of the achievement (pre and post) test by computing its internal consistency.
- Kuder- Richardson 20 and Split-Half technique were used to measure the reliability of the test.
- Effect size level by using Eta square to ensure the effect size of the apparent significant differences between the two groups.

4. Results and Discussion

4.1 The Reading Tests

The findings of the research were tackled with regard to the research questions. Therefore, the researcher used different statistic formulas such as means of frequencies, percentages and Mann Whitney-test to show the final results of the collected data. Tables were used to present and clarify the data. In addition, effect size through (η^2) was used to measure the extent to which the independent variable, the digital story, had an effect on the dependent variable, the experimental group's reading micro-skills.

To answer the main research question, *i.e. to what extent can digital stories develop reading micro-skills of English*, the researcher sought to answer the following question:

Are there statistically significant differences $\alpha \leq 0.05$ between the mean scores of the experimental group on the posttest application of the reading skills and that of the control group?

To answer this question, the researcher tested the following null hypothesis: *There are no statistically significant differences at $\alpha \leq 0.05$ a level between the mean scores of the experimental group on the posttest application of the reading skills and that of the control group.*

To examine this hypothesis, the mean rank and sum of the ranks of the experimental and the control groups' results were computed. Mann Whitney test was used to measure the significance of differences. Table (4.1) shows the results.

Table (4. 1): Mann Whitney test result between the control and the experimental groups in relation to the "total posttest marks"Scope									
	Unit	Group	N	Mean Rank	Sum of Ranks	Mann Whitney U	Z	Sig. value	Sig. Level
Reading micro-skills	11	Experimental	42	45.08	1893.5	857.5	0.577	0.564	Not sig.
		Control	44	41.99	1847.5				
	12	Experimental	42	44.61	1873.5	793.5	0.794	0.427	Not sig.
		Control	42	40.39	1696.5				
	13	Experimental	44	51.00	2244.0	682.0	2.395	0.017	sig. at 0.05
		Control	44	38.00	1672.0				
	15	Experimental	42	50.75	2131.5	535.5	3.114	0.002	sig. at 0.01
		Control	42	34.25	1438.5				
	16	Experimental	43	41.17	1770.5	809.5	0.071	0.943	Not sig.
		Control	38	40.80	1550.5				
	Total test marks	Experimental	44	51.18	2252.0	674.0	2.454	0.014	sig. at 0.05
		Control	44	37.82	1664.0				

"Z" table value at (0.05) sig. level equal 1.96

"Z" table value at (0.01) sig. level equal 2.58

The results in Table (4.1) indicate that the computed value is greater than the (z) table value for units 13, 15, and total test marks. This means that there are statistically significant differences at $\alpha \leq 0.05$ levels between the experimental group and the control one in relation to the 'total posttest marks' favoring the experimental group. Thus, the null hypothesis was rejected. Moreover, there is a significant difference between the mean ranks of both groups in favor of the experimental group. Whereas the mean rank of the control group is 37.82, the mean of the experimental group is 51.18.

To measure the effect size of the digital story on the experimental group's achievement in micro-skills of reading, the study applies the "effect size" technique as a complement dimension of the statistical significance, depending on the following criterion of Mackey and Gass (2005, p.349).

Table (4. 2): The critical values for effect size levels

Test	Effect Size		
	Small	Medium	Large
η^2	0.01	0.06	0.14
D	0.2	0.5	0.8

To calculate the size effect, the researcher used "η" and "d" size effects by using the following formula:

$$\eta^2 = \frac{Z^2}{Z^2 + 4}$$

Table (4.3) shows the effect size of applying digital stories on the students' achievement in reading skills.

Table (4. 3): The effect size of digital story on the experimental group's achievement in reading in the post-test

Scope	Z	Z ²	Z ² + 4	η ²	Effect Size
Total test marks	2.454	6.022	10.022	0.600	Large

According to η^2 value shown in Table (4.3), the effect size of digital stories is *large* on students' achievement in reading skills. This significant effect may be due to the several types of multimedia that digital story emphasizes, which helped students apply the principle of *visualization* that was raised by several scholars such as Zimmerman (1997), Chastain (1988) and Harvey & Goudvis, 2013. Drawing on this principle, the digital story can help students create a visual image of the word, which facilitates remembering it later.

After the first trialing of the digital story on the experimental group, it was noted that students showed high levels of creativity in answering the teacher's questions that demanded higher order thinking skills (HOTs). As a result, the researcher decided to add a question in the coming posttests to examine students' HOTs. The question was meant to measure students' capability of transferring the knowledge they got out of reading in several creative forms, e.g. tables, diagrams, and drawings. The question was located at the end of all the posttests coming after this observation.

Analyzing the posttests results, the researcher found that students in the experimental group registered higher mastery in answering these types of questions in all the posttests. As evidence of this, one posttest was analyzed to compare the students' higher order thinking skills in both groups. Students in the experimental group answered the question correctly with a percentage of 66 %, while those in the control group answered it correctly with only 37%. This can be considered an indicator that students who experienced the atmosphere of digital stories can more critically deal with higher order thinking questions.

The results of the questions indicated that there was a significant difference in the scores of the experimental group and the control one in reading skills. The experimental group had more improvement in their scores than the control group. Hence, results showed that digital-story-based technology can positively affect students' reading abilities. This finding goes in consistence with Christiansen & Koelzer (2016), Razmia, Pouralib & Nozad (2014) and Dong (2015).

4.2 Comprehension Worksheets

For each digital story, a comprehension written worksheet was prepared to be completed by experimental group students while watching the video. The worksheet consisted of two main parts. The first is for checking students' comprehension of the story events, and the second is for eliciting their attitudes or opinions concerning the story. The students' answers to the worksheet questions revealed that most of them could comprehend the story events. In general, students provided correct answers reflecting their comprehension of the story. As evidence of this, the worksheets of unit 11 were analyzed. It was found that 27 students answered all the questions correctly. The rest of the class, 12 students, committed one mistake in one item of the worksheet.

This positive performance can be linked to what Burmark (2004) stated regarding merging texts with images and its role in increasing students' comprehension. This similarly goes in consistence with Paivio's (1991) dual-coding theory, which divides the human memory into two main systems: visual and verbal. Since images can be received by both systems, inserting images into the digitized reading material would make information last longer and be more easily restored.

About one third of the students needed a third view of the digital story to complete the worksheet correctly. The second part of the worksheet was designed to elicit students' attitudes about the digital story. They were asked to answer questions like, "What

was the most thing/ character you like in this story?" They were allowed to provide their answers in Arabic or in any form they liked. They creatively answered this question in simple English, Arabic, or other symbols like smiling faces, hearts, and flowers. Later, the researcher translated their Arabic responses into English. Broadly speaking, all students liked the digital story, and they showed high levels of comprehension.

Samples of students' answers to the second question:

"I liked the story. It's the first time to see something interesting like this."

"I liked when the father said thanks to his family because Prophet Mohammed, peace be upon him, demanded us to thank people."

"I've learned how to make a cake, and I'd love to try this with my family."

"I liked how the whole family cooperated to make the birthday party for their dad."

"I liked the photo of The Dome of The Rock. It looks wonderful from inside."

"I liked the trip to Palestine, and I'd love to visit my homeland, Palestine, one day."

Analyzing students' responses to this question, the researcher found that the digital experience can greatly motivate students and make them more enthusiastic about learning. The context of the story is so context-based, which helps students personalize their learning experience by relating the events of the story to real events and places in their real life. e.g. Palestinian cities and famous places. They were able to make excellent connections with their Islamic culture and beliefs, as illustrated by the second quotation above in which the student justified the girl's behavior with "*Sunna*", what Prophet Mohammed's peace be upon him taught us. These assumptions look similar to what Robin (2016), (Gregori-Signes, 2014), Rance-Roney (2008), and Smeda et al. (2014) referred to concerning the relationship between digital stories and authentic and cultural learning. Reading Assessment sessions

To make sure that students in the experimental group really showed better reading performances, the researcher requested two of her colleagues to assess students' reading performances by taking random students of the same level from both groups. To do so, she classified students according to their levels of English language skills and asked her colleagues to pick one excellent student from both groups, the control and the experimental, and compare their reading performances. The results of these sessions were arranged as follows:

Table (4. 4): The Results of the Reading Assessment Sessions

Control Group	Student's mark in reading (out of 10)	Student's level of English skills
Student A	8	Excellent
Student B	7	Excellent
Student C	5	Very good
Student D	8	Very good
Student E	2	Good
Student F	5	Good
Student G	2	Fair
Student H	6	Fair
Experimental Group	Student's mark in reading (out of 10)	Student's level of English skills
Student A	10	Excellent
Student B	9	Excellent
Student C	7	Very good
Student D	8	Very good
Student E	8	Good
Student F	7	Good
Student G	6	Fair
Student H	8	Fair

The students' marks of the reading assessment sessions revealed that students in the experimental group at all levels (excellent, very good, good and fair) had higher levels of reading performance than those in the control group. This can be considered an

indicator that students' exposure to digital stories can develop their reading skills. More importantly, students of the experimental group showed a higher level of confidence when reading aloud in front of other teachers, which stands in alignment with what Castañeda (2013) acknowledged concerning the non-threatened environment offered by the digital story and its role in making students feel less stressful about their mistakes.

4.3 Field Notes

The teacher's field notes were completed either by the researcher herself or by her colleagues. While playing the digital story, the teacher took notes of students' reactions, state of mood, questions, and difficulties. The researcher's observation sheets can stand as her reflections on the whole experiment.

For analyzing field notes, Corwin and Clemens's (2012) model of analysis was adopted with some slight changes or modifications.

- a) Recognizing the research questions. Before starting the process of analyzing the field notes, research questions must be stated clearly. In our case, two research questions can be answered by analyzing the field notes. The main research question, i.e. To what extent can digital stories develop reading micro-skills of English? and one of the minor questions, i.e. How can digital stories be used to develop Palestinian fourth graders' reading micro-skills of English?
- b) Determining the best locations that can be considered as valuable sources of data. Before collecting data, places of data collection must be specified accurately. In this research, data were basically gathered during the experimentation of digital stories after the completion of each unit. Students were the fundamental source of information as they were carefully observed to seek answers to the previously mentioned research questions.
- c) Taking notes. Once the action is launched, the researcher has to take notes during the process of implementation. A digital story was presented to students every two weeks and after the completion of each unit in their text book. The teacher introduced the purpose of the research briefly to the students as they were asked to get informed consent and later parental reports. Since the researcher is their regular teacher, students were notably comfortable and relaxed during the whole process of implementation. The teacher used to videotape some parts of the lesson or take photos and quick notes during the lesson.
- d) Organizing and generating data. Data collected during the lesson delivery cannot be used directly because it usually includes codes, abbreviations or uncompleted thoughts (Saldana,2009). So, the teacher's notes were edited, organized, completed and typed for later use. The teacher's colleagues were also requested to provide a final version of their observations.
- e) Initial data analysis. After being typed, data were coded and tabulated. This stage changed the raw observations into meaningful statements and paved the way for theme identification.
- f) Themes identification. After coding and tabulating the data, themes were identified in light of the research questions. The second round of data analysis revealed a number of themes that can be précised as follows:
 1. Inserting digital stories into the curriculum is a unique experience that has many positive impacts on students' learning.
 2. The experimental group students who lived this experience had much willingness and enthusiasm about learning. They aroused more questions and responded more creatively to the teacher's critical ones.
 3. The experimental group students, in the same way, enjoyed a real and very authentic learning environment, the story, which warranted higher levels of involvement and participation.
 4. The relaxing atmosphere of the digital story made the general atmosphere of English classes more comfortable and attractive.
Students' were subconsciously practicing reading as they were trying to catch the fleeting events of the story and eagerly seeking to bridge the missing links of comprehension.
- g) Trustworthiness. To verify the results concluded from the field observation, other sheets were filled in by some colleagues in the same school who observed students' reactions while watching the digital story. The teacher's observation sheets that were filled in by the researcher's colleagues correspondingly reached similar conclusions. The most obviously repeated theme was the children's strong desire to learn and their overwhelming motivation during the whole process. Slow learners have overcome their shyness, hesitation, and insecurities as they were unthreatened.

Feedback was also requested from other teachers outside the school. The researcher shared the series of digital stories with those teachers via e-mail and YouTube. After watching the digitized material, the teachers provided adequate feedback and comments on the published material. Some of their comments came at earlier stages of the experiment, so the researcher was able to make use of them. Other teachers implemented the material in their English classes and provided feedback about students' involvement.

They were truly satisfied with the relevance of the digital story to their students' ages, needs and contexts. A third group of those teachers promised to try the digitized material with their students in the coming years as they do not teach fourth grade currently.

As this data collection instrument was applied several times by several teachers, including the researcher, her colleagues at the same school, and her colleagues and friends at other schools, this can be seen as *investigator triangulation* which means using multiple observers to reach the same findings (Mackey & Gass, 2005).

- h) Presenting the findings. The last step of field notes analysis is sharing the results with other teachers, researchers, and other possible audiences during the viva day or any future conferences.

It can be concluded that digital stories can be an effective medium to enhance students' micro skills in English. However, it was also noted that careful planning is a crucial condition of success, especially when dealing with crowded classes and poor resources.

4.4 Parental reports

After completing the whole series of digital stories in parallel with the end of the scholastic year, the teacher made some contact with the student's parents and sent them a parental report form to fill in. The parents' comments were generally positive, and they were very pleased as their kids' reading levels were getting better. As activating more senses, digital stories encourage kids to immerse their language skills along with life skills. They also emphasized the role of the digital story in arousing children's motivation. They happily expressed their satisfaction with the digitized product and asked the researcher to transfer her experiment to other colleagues and school subjects. Access to the digital stories was requested by some parents, which made the researcher upload the whole series on a YouTube Channel and share the links with the students' parents.

Parental reports sample

Note: The researcher translated their Arabic comments into English

" *My daughter's reading became better, and she is now more eager to learn English.*"

" *My daughter can articulate English words and letters better than before.*"

" *This experience has helped my daughter gain several skills such as analytical skills, imaginative skills, and critical thinking skills.*"

"*Learning English through the digital story can activate more senses which makes my daughter more interested in learning and makes the learning process more active.*"

4.5 Summary

This part reported the results obtained by the five data collection instruments: Pre- and posttests, comprehension worksheets, reading assessment sessions, teacher observation sheets, and parental reports. The results of data analysis were presented with reference to the themes of the main research question of the study.

The specific purpose of this research is to enhance Palestinian fourth graders' English micro-skills of reading identified in the *English Language Curriculum for Public Schools grades 1-12* (2015, p32) and also defined in *English for Palestine Grade 4* (Teacher Book). These skills include recognition of English script or handwriting, answering factual questions about reading material, recognition of pronoun referents and reading and understanding new and familiar material.

The researcher in this section identified students' English micro-skills of reading as listed in table (3.5), illustrated how reading micro-skills-based digital stories can be designed using quality criteria and steps as mentioned in chapter 3, illustrated how digital stories can be used as a medium in Palestinian EFL classrooms to develop children's English micro-skills of reading, and identified the role of the digital story on the development of Palestinian children's English reading micro-skills.

5. Conclusion

The researcher in this action research utilized digital stories as a medium to develop students' English reading micro-skills and help them achieve higher performances and better learning opportunities. For this purpose, the researcher raised one main question and four minor ones to direct the process of research. The purpose of the first one, for example, was to specify the English reading micro-skills that fourth graders should develop for building on them while designing the digital story (treatment). The second and third questions were addressed in the methodology chapter (chapter 3). The last minor question served to precise the effect of the whole experiment on students' English micro-skills. To conclude, it is safe to say that the process of designing a digital story is a logical, systematic, and scientific one. However, bringing this technology to EFL classes demands careful planning and is never a haphazard procedure.

The main research question has been tested through the implementation of five data collection instruments. The results gathered by these tools can be concluded as follow:

5.1.1 The Posttests Results

The analysis of tests results has revealed the following conclusions

- a) Exposure to digital stories can largely enhance English micro-skills of reading since children who watched the digital stories performed better in their reading tests. They were more capable of dealing with unfamiliar reading tests as they were exposed to this while watching the story. They were more fluent in making intelligent guesses about what they read, which helped them answer the questions correctly. This finding goes in consistence with (Christiansen & Koelzer, 2016; Razmia, Pouralib, & Nozad, 2014 & Dong, 2015)
- b) Children in the experimental group can more creatively deal with higher order thinking questions. This was noted early after the first view of the digital story, and it was tested by allocating one question in each posttest to measure high order thinking skills. Answering these questions, students of the experimental group presented innovative sorts of knowledge transfer, and they provided original forms of what they read. To elaborate, they were asked to summarize the different stages of a trip, so their answers took different forms, e.g., diagrams, drawings, and some symbols to illustrate their impressions about each stage of the trip. Some of their diagrams were circular, horizontal and even in a map cluster form. Other students made the summary in a table form by putting the character's name at the top of the table and inserting the activities he/she did during the trip; others put a drawing of the activities in the upper row and the character's name in the left column so that they could tick the activity for each character as explained by the reading text. The idea of activating higher order thinking skills through stories was previously discussed by Abdolmanafi-Rokni & Qarajeh (2014).

5.1.2 The Comprehension Worksheets

- a) Students can more easily read familiar/ unfamiliar words when they come in a story context. As the story triggers students' desire to follow its events and understand its plot, they actually do their best in order to achieve this purpose. Consequently, they focus for a longer time with increasing motivation and enthusiasm.
- b) The digital input, with its music, texts, and images, can largely enhance students' understanding and make it a fun activity rather than a complicated one. This can be linked to what Burmark (2004) specified regarding merging texts with images and its role in increasing students' comprehension. This similarly goes in consistence with Paivio's (1991) dual-coding theory, which divides the human memory into two main systems: visual and verbal. Since images can be received by both systems, inserting images into the digitized reading material would make information last longer and be more easily restored.
- c) The use of digital stories demands the teacher to arrange some other facilitating tools such as worksheets, guiding questions, and discussions. Inserting this technology into an English classroom is not a haphazard, spontaneous procedure. Without supporting the digital material with appropriate guidelines, students may get distracted. The worksheet is an excellent solution to the chaotic atmosphere that students may get trapped in when watching the story.

5.1.3 Reading Assessment Session

- a) Students who were exposed to the digital story enjoyed higher reading competencies than those in the control group. When asked to read familiar/unfamiliar texts, students of the experimental group provided more accurate and confident performances, as revealed by their marks in chapter four. Moran et al. (2008) and Salkhord et al. (2013) specified that the implementation of digital technologies, e.g. CALL and digital story, would foster students' reading comprehension skills.

Students who lived the experience of digital stories were more confident and less stressful when they were tested by other teachers. They were less hesitant and more courageous to read aloud in front of others. It was observed that students in the control group were more hesitant when teachers asked them to read. The examiners said that students may perform better if they are less anxious or stressed. These observations can be traced back to stand in alignment with what Castañeda (2013) acknowledged concerning the non-threatened environment offered by digital stories and its role in making students feel less stressful about their mistakes.

5.1.4. Teacher's Observation Sheets

- a) The digital story provides an authentic context of learning which has a positive impact on students' motivation and interaction. Registering the students' answers to some questions, the researcher was astonished by the number of real connections they made with their society, religious beliefs and even political issues that affect their lives. One example was provided by students when they asked about what prevents Gamela, a girl from the west bank, Palestine, from visiting Gaza, another Palestinian city. Some students referred to the political restrictions imposed on Palestine generally and the siege imposed on Gaza particularly. Others justified that by saying, " She's a girl, and she cannot travel alone".

Their explanations are built on their conservational backgrounds. Some Gazan families would prevent girls from traveling alone, although it is still the same country and it is just an hour's trip by car! These kinds of discussions cannot ever be generated if the learning context is not a story. (Gregori-Signes , 2014), Rance-Roney (2008) and Smeda et al. (2014) discussed the relationship between digital stories and authentic and cultural learning.

- b) More students can get involved in the learning process when it comes in a digital form. Slow learners' tendencies and willingness to participate in the reading process became higher. As all students were busy tracking the events of the story, shy and reluctant students could seize the chance and take the initiative to read without being judged or criticized.
- c) While watching and reading digital stories, students look less affected by external distractions as they are utterly engaged in what they are doing. They were completely concerned with tracking the story events and watching the images. Other distractions were marginalized or ignored automatically!
- d) Being short and simple, digital stories suit the limited attention span of children. Thus, children in the experimental group were rarely seen fidgeting, unlike those in the control group.
- e) Students in the experimental group were also privileged with the hidden curriculum of values injected into the digital story. They showed impressive behaviors and were less likely to make trouble during the class due to their immersion in the story events.

5.1.5 Parental reports

- a) Teaching young learners can best achieve its desired outcomes when constant connections with parents are kept. At this young age, teachers may fail to get adequate feedback from the participants because they cannot express themselves well and do not recognize the meaning of what they are doing. Their progress may just be unseen to them, yet noticeable to their parents. This assumption leads the researcher to keep regular contact with participants' parents to get feedback and make steady improvements in procedures. Parental reports were true and constructive, as they wanted the best for their kids. They directed some of the research procedures, such as the YouTube channel. They asked for access to the digital stories to familiarize themselves with the idea. Similarly, they requested the researcher to share her ideas with other teachers inside the school for the best of their kids. As a result, the digital series was shared with all the school teachers in a formal workshop.
- b) The enactment of digital educational tools like digital stories can be upgraded by being continuous and transferable outside the school. This procedure was done at an early stage when the first versions of the digital stories were refereed by some experts in the fields of education and technology. This did actually improve the digital product both technically and academically.
- c) The positive psychological impact of constant relationships with students' parents (on all three parties, the students, the parents, and the teacher) is so vital that it can intensely motive an academic impact.
- d) The feedback gathered via parental reports is very genuine. Parents undoubtedly wanted the best for their kids, so they were honest when providing their comments and suggestions.

5.2 Recommendations and Pedagogical Implications

In this section, the researcher provides teachers and action researchers with valuable pieces of advice with reference to the long journey of this action research:

- a) Conducting action research demands a prolonged journey of preparation and searching. Action researchers are advised to state their problems carefully, study their contexts penetratingly, review their fields, recognize their possibilities and infeasibilities, and back up their A plan with several B plans before starting the process of action research.
- b) In the digital world, supporting learning with technology has become an inevitable educational approach. Teachers nowadays are obligated to bring the carnival of technology to their classes if they want to be taken seriously by a digital generation of students.
- c) A digital story is highly recommended for EFL classes as it proved its reliability in upgrading students' levels. Despite this fact, it is significant to say that without careful planning and systematic proceeding, the whole process may go in vain. In other words, teachers are recommended to conduct sufficient research in their area of interest so that they can reward their students with the most relevant digital product. Likewise, teachers are demanded to prepare a toolbox of facilities and attachments to guarantee the effectiveness of their digital stories, e.g. Worksheets, B plans, action plans, daily records, and reflective journals.
- d) The process of designing a digital story is a multidisciplinary one. The action researchers who would like to make use of this technology have to take into consideration so many things while preparing their digital versions. To elaborate, considering the students' age, needs, and context are important factors that should affect the type of product. The local environment is equally crucial as it does influence the teachers' choices, alternatives, plans, tools and overall assessment procedures. For instance, a teacher cannot depend on individual assessment procedures if he/she teaches in a crowded

school. Seemingly, a teacher cannot choose an online assessment technique when most students do not have constant access to the internet and so on.

- e) Studying reading skills is a problematic area in educational research due to the complexity attached to reading and the conflict over defining it. Further research in this area particularly is highly recommended for reaching a comprehensive view of this awkward skill. As technology has proved its validity in facilitating reading research, teachers and action researchers are vastly directed to invest in this fascinating tool for supporting their reading research.
- f) A successful action researcher is always willing and capable of sharing his/her ideas with colleagues, friends, and supervisors. Regular contacts with others play a vital role in facilitating, directing and enhancing the extended process of research. Keeping a cooperative spirit along the way can, at all times, be fertile. Knowledge is best expanded when it is shared, and it is true to say that two heads are always better than one.

5.3 Summary

This study explains the methodology of designing and applying digital stories as a medium to boost students' English micro-skills of Palestinian fourth graders who enrolled at UNRWA Elementary Schools. It likewise measures the effect of this experiment on students reading performances by applying five data collection instruments: pre/ posttests, teacher observation sheets, parental reports, reading assessment sessions and comprehension worksheets. The findings revealed that digital story can profoundly improve students' English micro-skills of reading when it is used in accordance with the methodology of action research. It additionally promotes students' motivation, critical thinking skills, self-confidence and enthusiasm. Another final finding is the urgent need for adequate preparation and planning during the whole process of action research. As action research is a cyclical, not linear, process, I would love to say this in Jane's tongue:

There is no end, and that is the nature of developmental practices and part of the joy of doing action research. It resists closure. Each ending is a new beginning. Each event carries its own potential for new creative forms (McNiff, 2010).

5.4 Study Limitations and Future Research

This study has several limitations and challenges that can be précised as follows:

1. The sample of students consists of 84 female children only, as UNRWA have co-educational classrooms only in the first and second grades.
2. The digital series of stories was carefully designed to suit fourth grade textbook only, which restrict its use on this level.
3. Research on digital stories is usually concerned with requesting the students to work on digital story assignments or design their own digital stories. This was quite complicated with the sample of this research, as children at this age do not have access to similar tasks or technologies at home. Despite this, the teacher has actually transferred the digital experience to children's homes via a YouTube channel.
4. The teacher needed extra periods to show the digital stories, which put her under pressure, especially because of the limited number of periods allocated for English each week. Other obstacles were the deteriorating political situation and disturbance in students' attendance.
5. Learning and mastering video making and story making programs such as *Movie maker* and *storyboard* is such a demanding task.
6. The teacher has to do several things at once, e.g. playing the videos, observing students, taking notes, and monitoring students' understanding of the story. This was a difficult task, especially when dealing with crowded classrooms.
7. The teacher confronted some technical problems like break down in technological tools or power.
8. The time of the study is very short as the teacher observed students' performance during the second semester and for three months only. Studies on reading need more time to get accurate results that can last longer with the students.

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References

- [1] Abdolmanafi-Rokni, S. J., & Qarajeh, M. (2014). Digital storytelling in EFL classrooms: The effect on the oral performance. *International Journal of Language and Linguistics*, 4, 252-257.
- [2] Al Agha, E., & Al Ostaz, M. (2004). *The Educational Research: Elements, Methods and Tools*. Gaza: The Islamic University of Gaza.
- [3] Alderson, J. C. (1990). Testing reading comprehension skills (Part One). *Reading in a foreign language*, 6(2), 425-438.
- [4] Alderson, J. C. (1990). Testing reading comprehension skills (Part two): Getting students to talk about taking a reading test (A pilot study). *Reading in a foreign language*, 7(1), 465-503.
- [5] Alderson, J. C. (2000). *Assessing reading*. Ernst Klett Sprachen.
- [6] Alexander, B. (2017). *The New Digital Storytelling: Creating Narratives with New Media*. New York: ABC-CLIO.
- [7] Al-janabi, S. (2005). *Methodologies of Teaching The Life Story of Prophet Mohammed*. Baghdad: Baghdad University.
- [8] Al-Mansour N. & Al-Shorman R. (2011). The effect of teacher's storytelling aloud on the reading comprehension of Saudi elementary stage students. *Journal of King Saud University-Language and Translation*, 23(2), 69-76.
- [9] Alnabhan, M. (2004). *The Basics of Measurement in Behavioral Sciences*.
- [10] Anderson R. Pearson D. (1984). *A schema-theoretic View of Basic Processes in Reading Comprehension*. Cambridge: Bolt, Beranek and Newman, Inc.
- [11] Anderson, N. J. (1999). Exploring second language reading: Issues and strategies. *The Electronic Journal for English as a Second Language*, 53-56.
- [12] Anggeraini, Y., & Afifah, N. (2017). Digital Storytelling as a Teaching Medium in Reading Classroom. *Journal of Language and Literature*, 12(1), 83-89.
- [13] Astiyandha, T., Tarjana, S. S., & Kristina, D. (2012). The Effectiveness of Think Pair Share Method to Teach Reading Comprehension Viewed from Students' Motivation. *English Teaching*, 1(1), 109-120.
- [14] Barth, J. (1990). *Methods of Instruction in Social Studies Education*. Washington DC: University Press of America.
- [15] Bell, Y. R., & Clark, T. R. (1998). Culturally relevant reading material as related to comprehension and recall in African American children. *Journal of Black Psychology*, 24(4), 455-475.
- [16] Bence, P. (2017). The Use of Narratives in Teaching English as a Foreign Language to Young Learners: Teachers' Perceptions and Practices. *Faculty of Humanities and Social Sciences*.
- [17] Berg, B. (2001). *Qualitative Research Methods for the Social Science*. Boston: Pearson Education, Inc.
- [18] Beshir, H. (1991). *Once upon a Time: Parenting through Storytelling*. amana publications.
- [19] Brown, H. (2001). *Teaching by principles: An interactive approach to language pedagogy*. Beijing: Foreign Language Teaching and Research Press.
- [20] Burmark, L. (2004). Visual Presentations That Prompt, Flash & Transform. *Media and methods*, 40, 4-5.
- [21] Carle, E. (2000). *The very hungry caterpillar*. Early Years Educator.
- [22] Castañeda, M. E. (2013). I am proud that I did it, and it's a piece of me": Digital storytelling in the foreign language classroom. *Calico journal*, 30(1), 44-62.
- [23] Chastain, K. (1988). *Developing Second-Language Skills: theory and practice*. USA: Harcourt.
- [24] Chen, N. S., & Hwang, G. J. (2014). Transforming the classrooms: innovative digital game-based learning designs and applications. *Educational Technology Research and Development*, 62(2), 125-128.
- [25] Christiansen, S., & Koelzer, M. L. (2016). Digital Storytelling: Using Different Teaching Technologies for EFL. *MEXTESOL Journal*, 40(1) 1-14.
- [26] Clarke, R. & Adam, A. (2011). Digital storytelling in Australia: Academic perspectives and reflections. *Arts and Humanities in Higher Education*, 157-176.
- [27] Cope B. & Kalantzis M. (2010). Ubiquitous learning: An Agenda for Education Transformation. In *Ubiquitous Learning* (pp. 3-15). Urbana and Chicago: The Board of Trustees of the University of Illinois.
- [28] Corwin, Z., & Clemens, R. (2012). In S. Delamont, *Handbook of Qualitative Research in Education* (p. 640). Cardiff: Edward Elgar.
- [29] Díaz M., Vayá A., & Signes C. (2014). "Share your experience". Digital storytelling in English for tourism. *Ibérica*, 27, 185-204.
- [30] Dong, Y. (2015). Using digital storytelling to support EFL learning in China.
- [31] Duffy, G. (2002). The Case for Direct Explanation of Strategies. In *Comprehension Instruction: Research-based Best Practices* (pp. 28-41). New York: Guilford: Carnegie Mellon University.
- [32] Ebrahiminejad, S., Azizifar, A., Gowhary, H., & Jamalinesari, A. (2014). Effect of using short story on speaking improvement of Iranian pre-intermediate EFL learners. *International Journal of Language Learning and Applied Linguistics World (IJLLALW)*, 7(3), 42-56.
- [33] Eck, J. (2006). An Analysis of the Effectiveness of Storytelling with Adult Learners in. *The University of Wisconsin-Stout*.
- [34] Egan, K. (1988). Teaching as Story Telling. *Canadian Journal of Education*, 13(3), 1-50.
- [35] Elley, W. (1991). Acquiring Literacy in a Second Language: The Effect of Book-Based Programs. *Language Learning*, 41(3), 375-411.
- [36] Elliott, J. (1994). Research on teachers' knowledge and action research. *Educational Action Research*, 2(1), 133-137.
- [37] Ellis G. & Brewster J. (2014). *Tell it Again! The Storytelling Handbook for Primary English Language Teachers*. London: British Council.
- [38] El-Nabih, H. (2010). The acquisition of the English causative-inchoative alternation by Arabic native speakers. The acquisition of the English causative-inchoative alternation by Arabic native speakers. Boston College.
- [39] Ferrance, E. (2000). Action Research. In L. a. University, *Themes in Education* (pp. 1-30). New York: Brown University.
- [40] Fojkar, M. D., Skela, J., & Kovač, P. (2013). A Study of the Use of Narratives in Teaching English as a Foreign Language to Young Learners. *English Language Teaching*, 6(6), 21-28.
- [41] Garson, G. D. (2013). *Validity and reliability*. Asheboro: NC: Statistical Associates Publishers.
- [42] Ghasemi B. & Hajizadeh R. (2011). Teaching L2 Reading Comprehension through Short Story. *International Conference on Languages, Literature and Linguistics*, 26, pp. 69-73. Singapore: IACSIT Press.
- [43] Glassner, B. (2004). Narrative Techniques of Fear Mongering. *social research*, 71(4), 819-826.

- [44] Glazer, S. M. (1988). *Reexamining Reading Diagnosis: New Trends and Procedures*. International Reading Association 800 Barksdale Road, PO Box 8139 Newark, DE 19714-8139.
- [45] Goodman, S. (1967). Reading: A psycholinguistic guessing game. *Literacy Research and Instruction*, 6(4), pp. 126-135.
- [46] Gordon, W. (1986). *The Meaning Makers: Children Learning Language and Using Language to Learn*. Portsmouth, 70 Court St, NH 03801: Heinemann Educational Books Inc.
- [47] Goudvis, A., & Harvey, S. (2000). *Strategies that work: Teaching comprehension to enhance understanding*. York, ME: Stenhouse.
- [48] Gregori-Signes, C. (2014). Digital storytelling and multimodal literacy in education. *Porta Linguarum*, 237-250.
- [49] Hamilton, M., & Weiss, M. (2005). The Power of Storytelling in Classroom. In *Expert from Children Tell Stories: Teaching and Using Storytelling in the Classroom* (pp. 1-11). Katonah: Richard C. Owen Publishers, Inc.
- [50] Harrasi, K. T. (2012). Using stories in English Omani curriculum. *English Language Teaching*, 5(11). 51-59.
- [51] Harvey, S., & Goudvis, A. (2013). Comprehension at the Core. *The Reading Teacher*, 66(6). 432-439.
- [52] Hillman, J. (1975). *Loose ends: Primary papers in archetypal psychology*. Spring Publications.
- [53] Hughes, A. (1989). *Testing for Language Teachers*. Cambridge: Cambridge University Press.
- [54] Isbell R.; Lindauer L.; Sobol J.; Lowrance A. (2004). The Effects of Storytelling and Story Reading on the Oral Language Complexity and Story Comprehension of Young Children. *Early Childhood Education Journal*, 32(3), 157-163.
- [55] Kaderavek, J., & Justice, L. (2002). Using shared storybook reading to promote emergent literacy. *Teaching Exceptional Children*, 34(4). 8-13.
- [56] Kasami, N. (2017). The comparison of the impact of storytelling and digital storytelling assignments on students' motivations for learning. *CALL in a climate of change: adapting to turbulent global conditions*, 177.
- [57] Keene, E., & Zimmerman, S. (1997). *Mosaic of thought: Teaching comprehension in a reading workshop*. Portsmouth: NH: Heinemann.
- [58] Kiany, G. R., & Shiramiry, E. (2002). The Effect of Frequent Dictation on the Listening Comprehension Ability of Elementary EFL Learners. *TESL Canada Journal*, 20(1). 57-63.
- [59] Knutson, E. (1993). Teaching Whole Texts: Literature and Foreign Language Reading Instruction. *The French Review*, 67(1), 12-26.
- [60] Kobayashi, S. (1986). Theoretical issues concerning the superiority of pictures over words and sentences in memory. *Perceptual and Motor Skills*, 63(2). 783-792.
- [61] Koltay, T. (2011). The media and the literacies: media literacy, information literacy, digital literacy. *Media, Culture & Society*, 33(2). 211-221.
- [62] Kumaravadivelu, B. (2006). *Understanding language teaching: From method to post-method*. N.J: Lawrence Erlbaum Associates.
- [63] Lambert, J. (2013). *Digital Storytelling Capturing Lives, Creating Community*. New York: Routledge.
- [64] Lin, H., & Chen, T. (2007). Reading Authentic EFL Text Using Visualization and Advance Organizers in A Multimedia Learning Environment. *Language Learning & Technology*, 11(3). 83-106.
- [65] Lotherington, H., & Jenson, J. (2011). Teaching Multimodal and Digital Literacy in L2 Settings: New Literacies, New Basics, New Pedagogies. *Annual Review of Applied Linguistics*(31). 226-246.
- [66] Mackey, A., & Gass, S. M. (2005). *Second Language Research: Methodology and Design*. London: Lawrence Erlbaum Associates, Inc., Publishers.
- [67] Marsh, R. (1986). *Effects of storytelling in education*.
- [68] Mc Drury, J. & Alterio, M. (2003). *Learning Through Storytelling in Higher Education*. London: Kogan Page.
- [69] McNiff, J. (2010). *Action research for professional development: Concise advice for new action researchers*. Dorset: September books.
- [70] Meerah, S., & Osman, K. (2013). *What Is 'Action' in Action Research: A Malaysian Exposure* (Vol. 9). Canadian Center of Science and Education.
- [71] Mello, R. (2000). *Creating literate worlds through writing and storytelling*. *Currents in Literacy*, 3(1), 35-37.
- [72] Mertler, C. A. (2009). *Action research: Teachers as researchers in the classroom*. Sage.
- [73] Ministry of Education. (2015). *English Language Curriculum For Public Schools Grades 1-12*.
- [74] Ministry of Education and Higher Education. (2011). *English for Palestine Student's Book and Work Book*. Macmillan.
- [75] Moran J.; Ferdig R.; Pearson D.; Wardrop J; Blomeyer R. (2008). Technology and Reading Performance in the Middle-School Grades: A Meta-Analysis with Recommendations for Policy and Practice. *Journal of Literacy Research*, 40, 6-58.
- [76] Mozayan, M. (2015). Materials to develop microskills and macroskills: Are there any principles? *ELT Voices*, 5(6). 1-7.
- [77] Mutalib A.; Aziz N.; Shaffiei Z. (2011). Digital Storytelling Makes Reading Fun and Entertaining. *International Journal of Computer Applications*, 18(1). 20-26.
- [78] Nation, I., & Macalister, J. (2010). *Language curriculum design*. London: Routledge.
- [79] Nattal, C. (1996). *Teaching Reading Skills in a Foreign Language*. Oxford: Heinemann.
- [80] Oxford University Press. (2011). *How ESL and EFL classrooms differ*. Oxford: English Language Teaching Global Blog.
- [81] Paivio, A. (1991). Dual coding theory: Retrospect and current status. *Canadian Journal of Psychology/Revue canadienne de psychologie*, 45(3). 255-287.
- [82] Pardo, B. S. (2014). Digital storytelling: A case study of the creation and narration of a story by EFL learners. *Digital Education Review*, pp. 74-84.
- [83] Pearson, A. (1992). Teacher Education in a Democracy. *Education Philosophy and Theory*, 24(1), 83-92.
- [84] Pearson, P. D., & Fielding, L. (1991). Comprehension instruction. *Handbook of reading research*. 2, pp. 815-860.
- [85] Rains, T. (2009). *Using Examples of Myths Stories in Speaking*. Retrieved from Ezinearticles: www.Ezinearticles.com.
- [86] Rance-Roney, J. (2008). Digital Storytelling for Language and Culture Learning. *Essential Teacher*, 29-31.
- [87] Razmia, M., Pouralib, S., & Nozad, S. (2014). Digital storytelling in efl classroom (oral presentation of the story): a pathway to improve oral production. *Procedia-Social and Behavioral Science*, 98. 1541-1544.
- [88] Richards, J. C., & Schmidt, R. (2002). *Longman Language Teaching and Applied Linguistics*. Harlow: Pearson Education Limited.
- [89] Robin, B. (2008). Digital Storytelling: A Powerful Technology Tool for the 21st Century Classroom. *Theory into Practice*, 47(3), 220-228.
- [90] Robin, B. (2016). The Power of Digital Storytelling to Support Teaching and Learning. *Digital Education Review*(30). 17-29.

- [91] Roit, M. (2012). *Effective Teaching Strategies for Improving Reading Comprehension in K-3 Students*. Retrieved July 1, 2018, from Open Court Reading: opencourtreading.com
- [92] Rosenshine B., Meister C., Chapman S. (1996). Teaching Students to Generate Questions: A Review of the Intervention Studies. *Review of Educational Research*, 66(2), 181-221.
- [93] Rule, I. (2011). *Digital Storytelling Association*. Retrieved from electronic portfolios: <http://electronicportfolios.com/digistory/>
- [94] Saldana, J. (2009). *An introduction to codes and coding. The coding manual for qualitative researchers*.
- [95] Salkhord S., Gorjian, B., Pazhakh A. (2013). The Effect of Digital Stories on Reading Comprehension: An Internet-Based Instruction for Iranian EFL Young Learners. *International Journal of Language Learning and Applied Linguistics World*, 4(4), 111--124.
- [96] Samuels, S. J., & Kamil, M. L. (1984). Models of the reading process. In *Handbook of reading research* (pp. 185-224).
- [97] Seifeddin, A. H., Ahmed, S. Z., & Ebrahim, E. Y. (2015, April). A Program Based on English Digital Stories to Develop the Writing Performance and Reflective Thinking of Preparatory School Pupils. *Online Submission*, 8(2).
- [98] Smeda, N., Dakich, E., & Sharda, N. (2014). The effectiveness of Digital Storytelling in the Classrooms: A Comprehensive Study. *Smart Learning Environments*, 1-21.
- [99] Stanovich, K., Cunningham, A., & Feeman, D. (1984a). Intelligence, cognitive skills, and early reading progress. *Reading Research Quarterly*, 19, 278–303.
- [100] Stephenson, L., & Harold, B. (2009). Elements in the teaching of reading Teachers. *Learners and Curriculum Journal*, 4, 14-21.
- [101] *The Education System In Palestine*. (2018, November). Retrieved from UK Essays: Retrieved from <https://www.ukessays.com/essays/education/the-education-system-in-palestine-education-essay.php?vref=1>
- [102] Tway, E. (1985). *Writing Is Reading: 26 Ways to Connect*. Washington: National Inst. of Education.
- [103] UNICEF. (2010). UNICEF.
- [104] UNRWA. (2012). *Education Learning Together*.
- [105] UNRWA. (2015). *About UNRWA*. Retrieved July 30, 2018, from UNRWA.org: https://www.unrwa.org/sites/default/files/about_unrwa_2015.pdf
- [106] UNRWA. (2016). *Educational Reform*. UNRWA.
- [107] Watts, H. (1985). When teachers are researchers, teaching improves. *Journal of Staff Development*, 6(2), 118-27.
- [108] Wiggins, G. (1990). The case for authentic assessment. *Practical assessment, research & evaluation*, 2(2), 1-6.
- [109] Wilson, L. O. (2018). *Anderson and Krathwohl–Bloom’s taxonomy revised*. Retrieved from <https://thesecondprinciple.com/teaching-essentials/beyond-bloom-cognitive-taxonomy-revised>
- [110] Zarei, A. A., & Pedram, S. (2018). *Reading Micro skills: Does gender make a difference?* Beau Bassin: Scholars' Press.
- [111] Zaytoun, A. (1988). Different techniques for teaching listening comprehension. *English Teaching Forum*, 24(1), 46-49.
- [112] Zuber-Skerritt, O. (2001). Action learning and action research: paradigm, praxis and programs. Effective change management through action research and action learning: Concepts, perspectives, processes and applications. 7(20).