

## *The Effectiveness of Using Digital Stories (On Internet) To Improve the Literal, Organizational and Inferential Reading Comprehension Skills of English as a Second Language*

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### **Abstract:**

*The research aimed at identifying the effectiveness of digital stories in improving the literal, organizational and inferential reading comprehension skills of English as a second language for fourth grade female students. The researcher followed the semi-experimental approach; the research sample consisted of 34 female students in the fourth grade, divided into two groups, the experimental group consisted of 17 female students and the control group consisted of 17 female student. The sample was randomly selected. The research tool is a test of the literal, organizational and inferential reading comprehension skills of English language, and applied the pre-test on the experimental and control groups to ensure the homogeneity of the two groups, Then the researcher applied the digital stories on the experimental group, while the control group studied the stories in the usual way. The post-test was then applied on the experimental and control groups. The research indicated that there were statistically significant differences at 0.05 between the experimental and control groups in the post-test to improve the literal, organizational and inferential reading comprehension skills that favor the experimental group.*

**Keywords:** *digital stories, literal reading comprehension, organizational reading comprehension, inferential reading comprehension.*

### **Introduction:**

For ancient times, Storytelling was one of human experiences to transfer of information, knowledge, cultures, and the acquisition of skills and experiences. So, the use of stories to

teach different subjects enhances learning, increases the effectiveness of the learning process, develops thinking and language skills, and social and technical skills of both teachers and learners. As well as, the students need to break the routine in receiving information, and attract their attention and increase their achievement; which motivated teachers to use some of teaching modern strategies, including storytelling.

Regarding of the recent scientific and technological revolution in the world, which has a major impact on life. So, science has been called upon to present new methods, systems and techniques to cope with many challenges, such as increasing information in all branches of knowledge (Salem, 2010). Therefore, Storytelling has been developed from the traditional way to electronic viewing, which we call digital stories, which is one of the most technologically-based strategies that make learning a sense of entertainment and enjoyment, especially since it has been successfully implemented in learning foreign languages, in which students acquire new language skills that are different from their native language; in addition, learning foreign languages as a second language contributes to many positives, for example helping early age students learn to read and write better, helping them to develop their communication skills, to increase their self-confidence, and contributes to the transfer of students' scientific and technical experiences (Yihia and Alian, 2017).

Tatary (2016) and Al-Harbi (2016) indicated that reading is one of the most important means of gaining knowledge. It enables person to directly communicate with human knowledge, past and present, and the most important means of communicating with others' minds and ideas. (Basal, 2013) indicated that "reading should to be understood because reading comprehension is not only a key skill, but it is also the central skill that aims to teach and develop the language".

Reading comprehension is one of the most important goals of reading learning, not only as a learning subject. It is a major factor in all forms of learning. Hence, reading comprehension

played a major role in the educational process, especially in learning foreign languages, such as English for the primary stage.

Tatary (2016: 43), Alshakhs (2012: 714), Al ghamidi (2018) classified reading comprehension into several levels: literal, organizational, inferential, critical, tactile, and creative. In addition, (Basal, 2013) confirmed that the level of literal, organizational and interpretive understanding is the vertical reading comprehension levels, which is the first level in which the student obtains linguistic comprehension through watching and listening to the digital story, which help students learn about key ideas and details, of events sequence, comparisons, identifying cause and effect relationship, and identifying personality traits.

Reading comprehension requires a range of skills from the lowest to the highest. Literal, organizational and interpretative reading comprehension levels is the most appropriate to primary students, which also consistent with Bloom's classification of the cognitive field in its first grades, which requires a level of low-order thinking, such as knowledge, understanding, and application, as confirmed by (Göçer, A. 2014, p:3).

Mohammadian&Shahi (2018) aimed to understand the impact of digital storytelling on improving reading comprehension skills in learning English as a second language, in term of its importance; in order to prepare a generation that can communicate with the world around it, according to The Ministry of Education objectives and Saudi Arabia Kingdom's Vision 2030, Through developing their intellectual and personal abilities, and acquiring basic language skills: reading, speaking, writing, and acquiring the necessary language proficiency; to use English in all situations.

(Albdour, 2015), Abu Khadra, 2016) indicated that there is a weakness in possessing the reading comprehension skills for students in general to learn foreign languages such as English. This weakness is due to the traditional teaching methods used to teach English as a second language to primary school students.

Therefore, teacher should choose the appropriate method to achieve the goals Desired.

Based on (Richard Meyer's, 2004) cognitive theory of multimedia learning, which provides learner with information by using both visual and audio elements. Thus, digital stories have a great importance in the learning process.

Therefore, the present study aimed at using digital stories for primary students to improve the literal and organizational reading comprehension skills of English as a second language, because of its great importance in terms of increase cognitive achievement of primary students, especially linguistic achievement. As well as digital stories provide a good climate of assimilation, remember what they have seen, develop their ability to store and recall information, to develop literal, organizational, and indicative reading comprehension skills, in order to increase their understanding of English as a second language.

(Göçer, 2014:3) confirmed result, as the English curriculum is one of the most distinctive curricula; not only knowledge but also cultural skills and standards, especially if taught at the primary level; in which students acquire English basis for its future understanding, and enable them to identify the basic vocabulary assigned to this stage (Yihia and Alian, 2017).

The study importance concentrated on understanding the effectiveness of digital stories in improving the literal, organizational and inductive reading comprehension skills appropriate for English learning at primary stage. Therefore, The study objective is to use and integrate educational digital stories in classroom through all reading activities; to help students learn foreign languages, As well as, the research used (Barrett, 1968) classification for reading comprehension levels in order to identifying the most important literal, organizational and inductive reading comprehension skills for English learning, Which has not been addressed in previous studies.

### **Research problem:**

The research problem focused on students' low understanding in the primary stage of reading texts and stories in English and their lack understanding of their vocabulary and sequence of events, as confirmed by (Mohammadian, &Shahi, 2018).

Hence, The importance of new educational methods, systems and techniques to address this shortcoming, and to emphasize on digital stories effective role in developing literal, organizational, and inferential reading comprehension skills in an engaging and enjoyable manner appropriate to students' age, as confirmed by(Tatary, 2016), and (Al-Harbi, 2016). As evidenced by previous studies that digital stories can be implemented in the process of teaching foreign languages, especially English.

### **Research questions:**

The research attempted to answer the following main question:

How effective is the use of digital stories in improving literal, organizational, and inferential reading comprehension skills of English for fourth grade female students?

This question is divided to the following sub-questions:

1. How effective is the use of digital stories in improving literal reading comprehension skills of English for fourth grade female students?
2. How effective is the use of digital stories in improving organizational reading comprehension skills of English for fourth grade female students?
3. How effective is the use of digital stories in improving inferential reading comprehension skills of English for fourth grade female students?

### **Research hypotheses:**

1. There are statistically significant differences at the level 0.05 between the two experimental and control groups in the post- test to improve literal reading comprehension skills that favor the experimental group.

2. There are statistically significant differences at the level 0.05 between the two experimental and control groups in the post- test to improve organizational reading comprehension skills that favor the experimental group.
3. There are statistically significant differences at the level 0.05 between the two experimental and control groups in the post- test to improve inferential reading comprehension skills that favor the experimental group.

### **Research Variables:**

Independent variable: Effectiveness of using digital stories.

- First dependent variable: literal reading comprehension skills.
- Second dependent variable: organizational reading comprehension skills.
- Third dependent variable: inferential reading comprehension skills.

### **Research objectives:**

The research aims to identify the effectiveness of digital stories in improving the literal, organizational and inferential reading skills of English as a second language for fourth grade female students. It also aims at the following objectives:

1. To prepare a list of criteria for choosing digital stories [on internet].
2. To prepare a list of the literal, organizational and inferential reading skills, which are appropriate to fourth grade female students.
3. To prepare achievement test to measure fourth grade students' proficiency of literal, organizational and inferential skills in English.

### **Research importance:**

#### **1. Scientific importance:**

1. The research focuses on digital stories importance in learning English as a second language.
2. Learn about digital stories, its importance and types.

3. Identify the literal, organizational and inferential reading comprehension skills of English language learning in an appropriate method to the primary stage.
4. Recognize digital technology importance in teaching English.

## **2. Practical importance:**

1. To motivate primary stage teachers on activating digital stories role in improving the literal, organizational and inferential reading comprehension skills of English learning.
2. The research presents practical solutions and proposals to address some difficulties that female students facethrough learning English especially in reading comprehension and its skills.
3. The research provides an opportunity for other researchers to apply the experiment to measure the effectiveness of digital stories on the general education higher stages, such as middle and high school.

## **Searchlimitations:**

- Objective limits: investigating the effectiveness of digital stories in improving the literal, organizational and inferential reading comprehension skills of English as a second language for the primary stage.
- Human limits: fourth grade female students.
- Spatial limits: WahatAl Elm international School.
- Time limits: the second semester of 1439-1440 AH.

## **Terminology:**

### **Digital Stories:**

(Ghamdi, 2018) defines digital stories as: "an optical message consisting of a mixture of written text, reading, images, drawings, backgrounds, colors, sounds, and musical and action effects, using a digital authoring program, Which motivate learner's imagination, and develop his reading understanding of words and sentences accompanying pictures and drawings.

In this research, digital stories is defined as: Digital storytelling via the Internet, using images, text, graphics and visual and audio effects; to improve the literal, organizational and inferential reading comprehension skills of English for primary stage.

### **Literal reading comprehension:**

(Saadatnia & Tavakoli, 2016) defined literal reading comprehension as a basic structure of reading comprehension, as it is the ability to extract explicitly information contained in a syllabus, and to understand the meaning of the combination of words in sentences.

In this research, literal reading comprehension is defined as: a set of reading skills, which consists of identifying vocabulary and extracting basic and sub-ideas, and it is the first level of reading comprehension appropriate for primary grades.

### **Organizational reading comprehension:**

(Ali & Shabir, 2017) defined organizational reading comprehension as: "different analysis of the information parts that are extracted from different parts of the text, including: analysis, synthesis, classification, organization of ideas, and information in the text."

In this research, organizational reading comprehension is defined as: a set of reading skills, such as: organization, analysis, synthesis and classification of basic and sub ideas and information, it is also a higher level than literal reading comprehension, and the second level of reading comprehension appropriate for primary grades.

### **Inferential reading comprehension:**

(Pasbra, Yovanoff, and Tindal, 2013) defined the inferential reading comprehension as a shift from understanding the facts extracted from written, audible or readable text to actual interaction with the text; to make meanings conclusions which not provided in the text.

In this research, inferential reading comprehension is defined as: a set of reading skills that are the relationships



between things, events or details within the most frequent text, which readers have to "read between the lines" in order to discover this interaction with the text, this skill is a higher level than Organizational reading comprehension, and a third level of reading comprehension appropriate for primary grades.

## **Literature review:**

### **1. Digital stories**

#### **Digital stories definition:**

(Ghamdi, 2018) defines Digital stories as: "An optical message consisting of a mixture of written text, reading, images, drawings, backgrounds, colors, sounds, musical and action effects, using a digital authoring program that motivate the learner's imagination, and develops his understanding of the reading Through words and sentences accompanying pictures and drawings. "

(Obari & Lambacher, 2012: 225) defined it as: a combination of computer-based images, text, recorded voice, video or music, which are transferable, storage, and access to create communities where individuals can share objectives, experiences, and tell each other what they have learned.

(Darwish, 2017) defined it as "the process of designing and developing a short film that combines a story scenario with various multimedia components such as: pictures, video, music and narration, with the storyteller voice comment."

#### **Digital Stories characteristics:**

(Stewart & Gachago, 2016) confirmed the importance of using technology in classrooms such as using digital stories through virtual platforms, which allow students to develop communication and interaction skills as well as knowledge and experience. (Honeyford, 2013: 13) also indicated that the theoretical emphasis on the technical, structural and representational aspects of multimedia stories has made it a multilayered high-resolution approach; to analyze students' digital narratives using critical speech analysis tools and literary and visual analysis in literacy learning.

In addition, there are many literatures in educational technology have emphasized the educational benefits and advantages of digital stories, such as (Ghamdi, 2018), (Ahmed, 2016,241), and (Yihia & Alian, 2017) which aimed to use digital stories in the educational process In order to develop reading and listening skills in English language learning. These studies results also confirmed the effectiveness of digital stories in teaching, especially for primary students, in term it contributes to the promotion student's understanding, providing him with extensive cultural information selected by the teacher. It is also the most powerful educational model for the integration of e-learning technology into the educational process, which develops critical thinking, creative thinking, especially fluency and flexibilityskills.

### **Digital stories elements:**

(Ghamdi, 2018)&(Ahmed, 2016)& (Yihia & Alian, 2017) referred to the digital stories elements and components as follows:

1. **Point of view:** the main idea of the story.
2. **A dramatic question:** the question to be answered at the end of the story, and its main purpose.
3. **Emotional Content:** Credibility in the story events.
4. **Narrator voice:** Who narrates the story, and represents the main character in the events.
5. **Soundtrack:** music and sounds that accompany story events and strengthens it.
6. **Abbreviation:** the content of the story is free from over-loading.

### **Criteria for selecting digital stories:**

(Richard Meyer, 2004) explained seven rules for designing multimedia messages:

1. **Multimedia rule:** Students learn from words and images better than they learn from words only.
2. **The spatial proximity rule:** Students learn when words and images are more closely aligned than they learn when they are displayed separated on the page or screen.

3. Time-line rule: Students learn when words and images are correspondingly synchronized better than they learn when presented sequentially.
4. Closure rule: Students learn when words, images and sounds are deleted better than they learn when shown in the presentation.
5. Sensory Device rule: Students learn from animation and narration better animated images and visual text on the screen.
6. Extravagance rule: Students learn from animation and narration better than animated images and visual text.
7. Individual differences rule: The effects of design are stronger for less educated learners than the most knowledgeable learners, and it is also stronger for learners with high spatial skill than low-skill learners.

(Omar, 2017, p. 527) and (Yihia& Al-Alian, 2017) agreed that there are criteria and specifications for selecting digital stories as follows:

1. Include an appropriate number of images, sounds, video clips, text and animation, and these media should be integrated with each other and appropriately in achieving the story objective.
2. It has a degree of compatibility and a sense of viewer harmony between audio and video components.
3. Select the appropriate sound backgrounds and distance from synchronizing voice commentary with musical backgrounds; which may distract the viewer.
4. Includes a sound commentary to the author of the story with his or her own personal opinion, as this adds to the validity and objectivity of the story.
5. Have a clear title.
6. Develop one or more skills of listening or reading skills.
7. Combine the fast and slow pace in the presentation of events or narration of the story.
8. The viewer feels at the end of the story that it has achieved its objectives.

Using Digital Stories importance in Learning English as a Second Language

The results of (Yihia & Al-'Ilyan, 2017), (Mohammedian & Shahi, 2018, p: 17) indicated that the English curriculum is one of the most distinctive than others; not only knowledge, but also cultural skills and standards. English must take into account the integration of linguistic and cultural trends.

(Mohammadian & Shahi, 2018, p: 18) showed other advantages of using video material or online digital stories in learning English as a second language. As the study aimed to study the impact of video materials on improving the reading comprehension of Iranian learners in intermediate English [As a foreign language]. (Alcantud, 2016) also aimed to assess the impact of digital stories on the improvement of English language writing skills among primary school children, as language cognitive awareness increase will develop writing and reading skills of digital story texts.

## **2. Reading comprehension (literal, organizational and inferential) Reading comprehension Concept:**

(Basal, 2013) defined the reading comprehension as: "a mental process based on fourth grade student identifying meanings of words, sentences, ideas and new information contained in the reading text and interpreting it in the light of his previous experiences, and can be inferred through the reading comprehension skills."

(Ghamdi, 2018) also indicates that: Reading comprehension is based on mental processes focus on reflection and thinking, thus reading comprehension, and meaning determining, away from the focus on conservation and retrieval, which makes the information more durable and lasting in student mind.

(Albdour, 2015, p: 62) defines reading comprehension as: "A mental process aimed at extracting meaning from the written, phonetic or visual source, and integrating it into the recipient's cognitive structure; as it is one of the most important processes of thinking; its instruments are represented in silent reading, listening And presentation. "

**Reading comprehension importance:**

(Tatary, 2016, p. 43), (Basal, 2013, p. 171) and (Ukrainetz, 2017) indicated that reading comprehension is a linguistic, educational and learning requirement; it is one of the basic objectives that we should achieve when teaching our students. (Gown, 2016) also pointed out that effective technologies have a great importance in helping to reading comprehension; in terms to pronounce the words aloud and give definitions, improve the auditory and sensory skills, and mane combination between text and drawing to learners who can interpret the images rather printed words, and work on optical and scanning tracing to improve fluent reading.

**Reading comprehension levels:**

(Basal, 2013) indicated that there are two reading comprehension levels:

1. Horizontal understanding level: It includes understanding: (word, sentence, paragraph, subject as a whole).
2. Vertical comprehension level: It includes understanding: (literal, inferential, critical, tasteful, creative).

(Ulum, 2016, p: 1680), which aims at determining reading comprehension levels according to Bloom's classification of knowledge, which ranges from the lowest to the highest in the cognitive level, starts from memory level: the ability to recall information stored in memory Without any further thinking, followed by a comprehension level: the ability to see the meanings of things, which includes element translation from one formula to another, such as: numbers to words, clarify the text by translation or summary, or predict the results, followed by the level of application, as it is the ability to apply acquired data, which includes implementation of Principles, methods, terminology, theories, and learning outcomes, then analysis which is the ability to analyze materials to its elements to understand its basic structure, i.e., it contains statements description and analysis of communication between sectors, and determine the system laws contained as it requires the understanding of content and material structure,

Consequently, learning outcomes constitute the use of a higher level of thought than understanding, application, and composition, it is the ability to combine elements together to form a new entity, and finally reach the highest levels of knowledge domain, which is the evaluation as it contains the ability to evaluate a specific object value.

According to Bloom classification, the previous study reached a conclusion on thinking system levels available in a comprehensive analysis of reading and reading comprehension sections as follows:

- low-order thinking skills: knowledge, understanding, and application.
- High-order thinking skills: analysis, synthesis, and assessment.

The previous study results also indicated that the lower levels of thinking at Bloom correspond to the first levels of reading comprehension: sentences reading, knowing the subheadings and the basic, identifying the characters and heroes, details, identifying the main idea, interpreting the meaning of words, while higher levels correspond to higher levels of reading comprehension, such as reading between the lines, solving problems, creating creativity, distinguishing opinions and facts, and predicting events.

(Göçer, 2014, p: 3) suggests that Barrett's classification is one of the classifications that determine reading comprehension among students. This classification is divided into five different categories for reading comprehension: literal, organizational, inferential, evaluation, assessment. It is arranged in this classification from the easiest to the hardest according to the specialization difficulty:

1. Literal reading comprehension: focuses on the ideas and information mentioned in the text.
2. Organizational reading comprehension: This type requires that ideas and information mentioned in the text be organized by learner.
3. Inferential reading comprehension: student demonstrates the Inferential comprehension when he uses the ideas and information mentioned based on his personal experience.

4. Assessed reading comprehension: focuses on what the student can expect from subsequent events, and is related to the following verbs: analyze, evaluate, modify, give reason, criticize, judge.
5. Estimated reading comprehension: students deal emotionally with text content and details through answer with new and innovative methods and ideas, it is related to the following verbs: inquire, comment, criticize, evaluate.

### **Literary reading comprehension:**

(Basabara, Yovanoff, & Tindal, 2013) and (Saadatnia & Tavakoli, 2016) agreed that literal reading comprehension is "basic structure" in the reading comprehension; as literal comprehension, the first level of comprehension, requires that The student is able to extract the information explicitly contained in the paragraph, and this level of comprehension is based on the students' skills, words level, their ability to accurately identify individual words and understand the meaning from the combination of words in propositions and sentences.

Although word-processing capabilities at the word level provide the skills necessary to understand the text, they are not sufficient to facilitate comprehension. The literal comprehension consists of two strategies: recall and the ability to recognize in the paragraph context; to determine whether the understanding has actually occurred or no, whether the reader has understood what he read or relied on prior knowledge and understanding.

(Göçer, 2014, p: 3) adds that literal reading comprehension focuses on the ideas and information mentioned in the text and is divided into:

- Simple literal reading comprehension: It is through recognition or recall of something, fact or event.
- The complex literal reading comprehension: It is through the identification or recall of a series of facts or successive events, and focuses on the following verbs: put in a sentence, calls, links, repeats, mentions.

(Tatary, 2016, p. 43), (Shakhs, 2012, p. 714) and (Ghamdi, 2018) indicated that there are two types of reading comprehension levels:

- Higher reading comprehension level: critical level, tasteful level and creative level.
- Lower reading comprehension levels: literal level, and inferential level.

### **Organizational reading comprehension:**

(Tatary, 2016, p. 43), (Shakhs, 2012, p. 714) and (Ghamdi, 2018) indicated that organizational comprehension level includes the following skills:

1. Distinguish between familiarity and assumptions.
2. Distinguish between facts and opinions.
3. Distinguish between what is relevant and what is irrelevant.
4. Distinguish between secondary and main ideas.
5. Distinguish between reasonable and unreasonable ideas.
6. Arrange ideas according meaning.
7. Rearrange story events and characters creatively.

### **Inferential reading comprehension:**

(Basaraba, Yovanoff, & Tindal, 2013) indicated that inductive reading comprehension enables the learner to transfer from facts comprehension derived from written, audible or readable text to actual interaction with the text; to make the meanings conclusions not expressly provided in the text, In this case the reader is asked to manipulate the information in the text to search for the relations between the main idea and the details, and use this information to interpret and set conclusions about the intended meaning of the author.

(Shakhs, 2012, p. 714), and (Ghamdi, 2018) indicated that inferential comprehension level includes the following skills:

1. Cause as result relationships.
2. The appropriate title to the readable text.
3. The goals for which the writer formulated the text.
4. Characteristics of author style.
5. characters features through dialogue and events.



6. Values contained in the readable text.
7. Similarities and differences between subject elements.
8. Results through a set of introductions.
9. Personal profiles that we can draw for the text reader.

Through the literaturerreview and previous studies of reading comprehension, it showed that: Reading comprehension requires a set of skills from the lowest to the highest, and the most appropriate to the the primary stage students are levels of literal, organizational and inferential reading comprehension, which also consistent with Bloom's classification of knowledge field in its first stages: the cognitive process, which require a level of thinking, such as knowledge, understanding, and application, which have been well implemented in learning foreign languages as a second language; the learner becomes more capable of comprehending the written and readable texts in English language, and this is what the current study aims at.

## **Research procedures**

### **Research Methodology:**

The research used the semi-experimental approach, based on the two groups: one experimental group uses a set of digitalstory (on internet), and the control group will be presented the same content of digital stories without the use of visual and audiovisual stimuli, where the two groups apply pre and post test.

### **Semi-experimental design:**

The research used semi-experimental design, which known as the pre-post design of the two groups, using an experimental and control group. The research population was selected in the purposive manner, whileThe sample was selected in a simple random manner. Both samples were subjected to pre- and post test, the independent variablefor the experimental sample only (Chris Will, 2018). This approach was chosen because it is the closest to achieving the research objectives by controlling all the variables and the basic factors except for one variable. The

researcher control or changes it in order to determine and measure its effect in the process, And then observe the effects of that change on the phenomenon studied (Obaidat, et al., 2007).

### **population:**

The research population consists of all male and female students of the fourth grade of foreign education in Riyadh schools for the academic year 1439-1440. They are 7,200 male and female students, distributed in 90 schools according to education department statistics in Riyadh, students' ages range from 9-10.

### **Research sample:**

It is difficult to apply the treatment to all students in the fourth grade of primary schools of foreign education, so a sample was chosen to represent the study community, where the researcher chose a specific school in the purposive manner, Wahat Al Elm international School, and the sample was chosen by the random sample within the school, The sample consisted of 34 female students from the fourth grade. The sample was divided into two equal groups: an experimental group of (17) students and control group of (17) students.

### **Research instruments:**

In light of the general and procedural research objectives, and the scientific content of digital stories, the researcher prepared and design an achievement test to measure the literal, organizational and inferential reading comprehension skills of English.

### **Search procedures:**

The research followed a series of steps:

- Prepare a list of criteria for selecting digital stories [on internet] suitable for primary students in learning English, present the list of experts, and reach a final list of criteria which included (26) indicators.
- Preparation of a list of reading comprehension skills: [literal, organizational and inferential], according to

(Barrett's, 1968) classification of reading comprehension, and Bloom's classification of knowledge field. The researcher identified three levels of reading comprehension appropriate to the primary stage: [literal level, organizational level, inferential level] Each level includes a set of sub-skills, then the list was confirmed by seeking the opinion of group of experts, and the final list of skills which includes (18) sub-skills, on which the test is designed, so that each question measures a particular skill.

- Digital stories was selected according to the final list of criteria for selection of digital stories [on internet], which appropriate for primary students of learning English, and according to the list of skills of reading comprehension [literal, organizational and inferential], where the researcher selected the digital stories based on the previous two lists, It was (10) digital stories, where each digital story has a set of questions that discuss its events and vocabulary; to emphasize learning the literal, organizational, and inferential reading comprehension skills of English.
- Seeking opinions of educational experts in this area to make sure that digital stories is appropriate for primary, and the extent of contain literal, organizational and inferential reading comprehension skills of English.
- an achievement test; to measure the extent to which literal, organizational and inferential reading comprehension skills are improved, in the light of the skills list and then presented to the experts.
- Find the difficulty and discrimination coefficient, and verify the test validity and reliability.
- Addressing the school administration identified in Riyadh to approve the study and conduct the experiment in order to facilitate the researcher task.
- Determining the study sample (experimental group and control group).

- Groups equivalent through applying the pre-test on experimental and control groups to ensure equivalence before applying the study. The researcher herself monitored the test results.
- Setting up a guide to illustrate how online digital stories can be used to improve the literal, organizational, and inferential reading comprehension skills of fourth-grade students, and then seeking the opinion of English specialists about the guide.
- The actual application of the experiment by providing the experimental group by online digital stories, the researcher herself did this step with the classroom teacher help; and discuss the stories in the light of literal, organizational and inferential reading comprehension skills, while the control group is taught in the traditional way through providing the same digital stories content but written texts.
- Apply the post-test on both groups to identify the experimental factor effect among the experimental group and the control group.
- Analyzing the data statistically and then making recommendations and proposals based on the results.

### **Research tool design:**

Test of literal, organizational and inferential reading comprehension skills of English language for the fourth grade in foreign education, as follows:

### **Achievement test to measure reading comprehension skills of English:**

Based on the general and procedural objectives, and the digital stories educational content, the achievement test was designed to measure the literal, organizational and inferential reading comprehension skills of the English language suitable for foreign education, where the researcher designed the test through seeking help of specialists and experts in teaching English.

## **The test design has the following stages:**

### **1. Test purpose determine:**

The test objective is to measure the effectiveness of online digital stories selected to improve the literal, organizational and inferential reading comprehension skills among a sample of fourth grade students of foreign education schools, which consists of 34 female students.

### **2. Determination the test content:**

The test content consists of an educational story (readable text) that introduces new educational values and vocabulary to the English language. The skills measure literal, organizational, and inferential comprehension.

### **2. Determine test vocabulary and the wording of its items:**

By examining various types of tests that measure reading comprehension skills, as well as reviewing literatures about evaluation methods, tools, and objectives tests (in particular).

The test questions consists of multiple-choice questions. The test questions were divided into three sections: questions to measure literal reading comprehension, questions to measure organizational reading comprehension skills, and questions that measure inferential reading comprehension.

### **3. Setting test instructions:**

The researcher set the test instructions at the beginning to guide the students how to deal with the test, the instructions included the following:

1. Writing student information: name, grade and school.
2. Instructions on how to answer the test such as (circle the number corresponding to the phrase or the correct word).

### **4. Correcting the test method:**

The test consists of (18) questions. The student gain one grade for each question with a correct answer, and zero for each skipped question or incorrect answer. Thus, the total score of the test equals the number of test items.

### **5. Initial test form:**

Based on the above, the researcher formulated the test initial form in terms of the literal, organizational and inferential reading comprehension skills, which included (18) items.

### **6. Test validity:**

#### **Experts validity:**

The test was presented to experts in educational technology, curriculum and English methodology, as well as those with experience in teaching English in foreign education to inquire about the suitability of test items for fourth grade students, accuracy and clarity of the test items, determining the appropriate and inappropriate questions, proposal of additional questions to be added to the test, the measurement of each test item for the specific skill, deletion, modification or addition.

### **7. Preparation of the test final form:**

After the amendments to the test based on the experts opinions, the final form of the test consists of (18) items.

#### **Applying the pre- test:**

After verifying the test validity, the researcher applied pre-test of the tool to verify the test validity and reliability before applying the treatment and post-application tests, to ensure that there are homogeneity between the two experimental groups (experimental and control) and that students were not proficient in literal, organizational and inferential reading comprehension skills.

The sample was randomly selected from Wahat Al Elm international school. The sample was 34 female fourth graders. It was divided into two groups in terms of number and age; An experimental group of (17) female students, control group of (17) female students. Then the pre-test applied to the experimental and control groups. The students were instructed to read the test instructions, explain the method of answer, observe the test time, and then monitor the test scores. The researcher corrected the test and recorded the scores for each group in order to:

## Verification of test validity and reliability:

### A. Tool validity (test):

The researcher verified the test validity through the pre-test application. The researcher used comparative validity or the discriminatory validity to verify the test validity by calculating the test total score by identifying (27%) of the sample, (9) who had the highest scores of the test total score, and also identified (27%) of the respondents who had the lowest scores of the test total score, they were (9) students; in order to verify the test validity in distinguishing between the participants who had highest scores and the lowest of the test total score. The research calculated the differences values between the lowest and highest scores of the total score on each scale using (Mann- Whitney U Test) as follows:

*Table (1) shows the differences between the low and high scores of the test total score using Mann-Whitney U Test*

Group	Number	Score mean	Score sum	U value	Z value	Significance level
Low-score students	9	5	45	0.00	3.59	0.01
High-score students	9	14	126			

Table (1) indicated that (Z) value for the test total score was (3.59). and U is a statistical significant at the level of (0.01), indicating that there are statistically significant differences between the two groups: (high and low scores) for the test total score. This indicates that the test total score is able to distinguish between the highest group of students with high scores and the lowest group with low scores. This indicates that the test is has the discriminatory validity.

### B. Reliability coefficient calculation:

The researcher calculated the test reliability using both Cronbach's Alpha and the Spearman-Brown Coefficient semantics as follows:

**Table (2) shows the calculation of test reliability using both the Cronbach alpha coefficient and half split method**

Questions	Cronbach alpha coefficient	half split method
18	0.70	0.83

Based on table (2), it is clear that Cronbach's Alpha is high as it equal 0.70, while the test reliability using Spearman-Brown Coefficient (0.83) is a good reliability coefficient, indicating the test reliability.

### **C. Calculation of the test questions ease and difficulty:**

The coefficient of test questions ease and difficulty was calculated for pre-test by the following equation: (Obaidat, 2005: 241) (Assaf, 2010: 401).

Ease coefficient = (number of students who answered correct answer to the question / number of students who answered question) x100.

Difficulty coefficient = 1 - Ease coefficient.

**Table (3) Ease and difficulty coefficient of the test questions**

Q. No	Ease coefficient	Difficulty coefficient	Q. No	Ease coefficient	Difficulty coefficient	معامل الصعوبة
1	0.85	0.15	10	0.44	0.56	0.56
2	0.62	0.38	11	0.32	0.68	0.68
3	0.62	0.38	12	0.29	0.71	0.71
4	0.38	0.62	13	0.38	0.62	0.62
5	0.56	0.44	14	0.26	0.74	0.74
6	0.56	0.44	15	0.26	0.74	0.74
7	0.24	0.76	16	0.35	0.65	0.65
8	0.29	0.71	17	0.35	0.65	0.65
9	0.38	0.62	18	0.26	0.74	0.74

Table (3) shows that the ease and difficulty coefficients of the test questions varied between 0.15 and 0.85, illustrating the large variation between the ease and difficulty coefficients of the test questions.



### D. Calculation of discrimination coefficients for test questions:

The discrimination coefficients for the test questions were calculated using the Kelly division, which is based on the following steps: (Bahi, Azhari, 2006).

- Arranging student papers by score.
- Separation of 27% of the scores with higher scores (9 students).
- Separation of 27% of the scores with lower scores (9 students).
- Use Johnson equation

$$\text{Discrimination coefficient} = \frac{\text{correct answers in the high 27\%} - \text{correct answers in the lowest 27\%}}{27\% \text{ of the research sample}}$$

Based on the previous equation, the discrimination coefficient for each question of the test was calculated as shown in table (2):

**Table (4) Discrimination coefficient value of test questions**

Q. No	Discrimination coefficient	Q. No	Discrimination coefficient
1	0.44	10	0.56
2	0.44	11	0.44
3	0.44	12	0.33
4	0.22	13	0.33
5	0.22	14	0.44
6	0.22	15	0.44
7	0.56	16	0.33
8	0.56	17	0.33
9	0.67	18	0.22

The above table indicates that the discrimination coefficients for the test questions ranged from 0.22 to 0.67, therefore the test is distinguished among students with highest and lowest scores.

## Ensure the equivalence of the two groups before applying experimental treatment materials:

To verify the equivalence of the two groups sample in the achievement test of the pre- test at the level: (literal reading comprehension skills, organizational reading comprehension skills, inferential reading comprehension skills), the research used T.test to determine the differences between the two independent sample, In order to determine the statistically significant differences in the test total score in the pre test between the average of the experimental and control groups' scores mean, as shown in the following table:

*Table (5) the differences between total score mean of the test in the pre- test between the experimental and the control groups using T. test for two independent samples*

Skill	Group	N	Mean	Std	Degree of freedom	T value	Significance level
Literal reading comprehension	Experimental	17	5.47	2.27	32	0.23	0.817
	Control	17	5.65	2.15			
Organizational reading comprehension	Experimental	17	0.94	0.75	32	0.22	0.824
	Control	17	0.88	0.78			
Inferential reading comprehension	Experimental	17	0.94	0.75	32	0.27	0.789
	Control	17	1.00	0.50			
Test total score	Experimental	17	7.35	3.33	32	0.17	0.869
	Control	17	7.53	2.83			

Table (5) indicated that there are no statistically significant differences in scores mean of the three skills: (literal reading comprehension skills, organizational reading comprehension skills, inferential reading comprehension skills), and the test total score the pre- test of the experimental and control groups, thus there is a homogeneity between the students level in both experimental and control groups in the pre- test.

## Ensuring that the students in the two groups are not proficient in the literal, organizational and inferential reading comprehension skills.

The pre-test results of the achievement test indicated that the students proficiency level for literal reading comprehension

skills at the (average) level by calculating the total scores mean of literal reading comprehension questions, estimated at 45.1% for the experimental group and 45.6% for the control group. While the students mastery level of the organizational reading comprehension skills at the (low) level; by calculating the the total scores mean of the organizational reading comprehension question, at 29.4% for the experimental group and 27.5% for the control group. the students mastery level of the inferential reading comprehension skills at the at (low) level by calculating the total scores meanof the inferentialreading comprehension questions at 27.5% for the experimental group and 29.4% for the control group.

### **Conducting research experiment:**

After verifying the test validity and reliability, verifying the equivalence of the two groups, and ensuring that the students were not proficient in the literal, organizational and inferential reading comprehension skills of the control and experimental groups, the study experiment was carried out according to the following steps:

#### **1. Apply the two treatments:**

The experiment was applied by presenting 10 digital stories selected online (appendix, 10)for the experimental group, while the control group learned the same content of the written stories by the traditional method (appendix, 11), the treatment conducted within four weeks from February 26, 2019 to 21 March 2019 from two to three stories weekly, after the completion of the pre-test(achievement test); to measure the impact of digital stories in improving the literal, organizational and inferential reading comprehension skills of English (for fourth grade students).

#### **2. Post-test application:**

The pre-test –achievement test to measure skills- was applied to the experimental and control groups after completion the treatment. The researcher applied the achievement test and recorded the studentsresults in special sheets for conducting the

statistical treatments, presenting the results, then discussing and interpreting it.

### **Statistical treatments in research:**

- Frequencies and percentages.
- Mean; to find out how high or low responses.
- Standard deviation to determine sample responses or scores dispersion.
- Pearson correlation coefficient to measure the validity of reasoning.
- Discrimination validity or peripheral comparison using Mann-Whitney U Test to measure the test validity.
- Cronbach's Alpha reliability coefficient and Spearman-Brown Coefficient split-half reliability to measure test reliability.
- T-test (Independent Samples) to measure differences between the control and experimental groups.
- Eta<sup>2</sup>squared to measure the effectiveness of using digital stories (on internet) to improve the literal, organizational, and inferential reading comprehension skills of English as a second language.
- Statistical Social Sciences Package (SPSS) to conduct statistical treatments.

### **Research Results and Discussion:**

#### **Verification of the first hypothesis:**

- There are statistically significant differences at 0.05 between the experimental and control groups in the post-test to improve literal reading comprehension skills that favor the experimental group:

To investigate this hypothesis, the researcher compared the total score of the questions of literal reading comprehension skills in the post-test between the experimental and control groups using the T test for independent samples to measure the differences between scores mean of the experimental and control

groups students. After using the digital stories (on internet) for the experimental group students, as shown in the following table:

**Table (6) shows the differences between the scores means of literal reading comprehension skills between the experimental and control groups in the post-test using T test for independent samples**

Group	N	Mean	Std	Degree of freedom	T value	Significance level
experimental	17	9.65	1.54	32	8.04	0.01
Control	17	5.71	1.31			

The previous table indicated that there are statistically significant differences at (0.01) and (0.05) in the scores means of the literal reading comprehension skills in the post-test between the experimental and control groups that favor the experimental group, where its mean is (9.65), while control group scores mean is (5.71), indicating the students level improvement in the experimental group in literal reading comprehension skills during the post-test higher than the control group scores in term of using digital stories (on internet) for experimental group students.

Therefore, we accept the first hypothesis, where there were statistically significant differences at (0.05) in scores of literal reading comprehension skills in the post-test that favor the experimental group, the research used Eta<sup>2</sup> squared for T value of the test total score to measure the effectiveness of that improvement and effectiveness of using digital stories [on internet] as follows:

$$\text{Eta}^2\eta = \frac{\text{T}^2}{\text{T}^2 + \text{degrees of freedom}}$$

"T" is the T calculated value in T test

$$\eta^2 = \frac{(8.04)^2}{(8.04)^2 + 32} = \frac{64.6}{96.64} = 0.67$$

Eta<sup>2</sup> squared value is (0.67), which indicated the effectiveness of using digital stories (on internet) to improve the literal reading comprehension skills.

### Verification of the second hypothesis:

**There are statistically significant differences at  $>0.05$  between the experimental and control groups in the pre-test to improve the organizational reading comprehension skills that favor the experimental group:**

To investigate this hypothesis, the researcher compared the total score of organizational reading comprehension skills questions in the post-test between the experimental and control groups using the Ttest for independent samples to determine the differences between scores mean of the experimental group and scores mean of the control group in these skills, After using the digital stories (on internet) for the experimental group students, as shown in the following table:

*Table (7) shows the differences between scores mean of the organizational reading comprehension skills between the experimental and control group in the post-test using the T test for independent samples*

Group	N	mean	Std	Degree of freedom	T value	Significance level
experimental	17	2.18	0.73	32	6.10	0.01
control	17	0.88	0.49			

the previous table indicated that there are statistically significant differences (0.01) and therefore at (0.05) in the scores means of the organizational reading comprehension skills in the post-test between the experimental and control group that favor of the experimental group, which its mean is (2.18), While the control group mean is (0.88). Which indicates that the experimental group students improved in the organizational reading comprehension skills during the post-test due to using the digital stories (on internet) than the control group students.

Therefore, the first hypothesis is accepted which there were statistically significant differences at (0.05) in the scores of the organizational reading comprehension skills in the post-test that favor the experimental group students and to measure the effectiveness of that improvement and using the digital

stories (on internet) for the experimental group students, the research conduct Eta<sup>2</sup> squared for "T" value of the total test score as follows:

$$\text{Eta}^2 = \frac{T^2}{T^2 + \text{degrees of freedom}}$$

T is the calculated T in the T test

$$\eta^2 = \frac{(6.10)^2}{(6.10)^2 + 3} = \frac{7.21}{69.21} = 0.54$$

ETA<sup>2</sup> is (0.54), which indicated the effectiveness of using digital stories (on internet) to improve organizational reading comprehension skills.

**Verification of the third hypothesis:**

**There are statistically significant differences at 0.05 between the experimental and control groups in the pre-test to improve the reading comprehension skills that favor the experimental group:**

To investigate this hypothesis, the researcher compared the total score of inferential reading comprehension skills questions in the post-test between the experimental and control groups by using T test for independent samples to measure differences between the experimental group students' mean and the control group using digital stories (on internet) for experimental group students, as shown in the following table:

**Table (8) Differences between the scores mean of inferential reading comprehension skills between the experimental and control group in the post-test using the T test for independent samples**

Group	N	Mean	Std	Degree of freedom	T value	Significance level
experimental	17	2.12	0.49	32	8.94	0.01
Control	17	0.94	0.24			

The previous table indicated that there are statistically significant differences at (0.01) and therefore at (0.05) in the scores mean of inferential reading comprehension skills in the post-test between the experimental and control groups that favor the experimental group, which its mean is (2.12) while the control group mean is (0.94), Which indicates the improvement of the experimental group students in the inferential reading comprehension skills due to using digital stories (on internet), during the post-test of the control group students.

Therefore, the first hypothesis is accepted where there were significant differences at (0.05) in the scores of inferential reading comprehension skills in the post-test that favor the experimental group.

The researcher will use Eta<sup>2</sup> test for the T value of the test total score to measure the effectiveness of this improvement and the effectiveness of using digital stories (on internet) for the experimental group as follows:

$$\text{Eta}^2 = \frac{\text{T}^2}{\text{T}^2 + \text{degrees of freedom}}$$

T is the calculated T in the T test

$$\eta^2 = \frac{(8.94)^2}{(8.94)^2 + 3} = \frac{79.92}{111.92} = 0.71$$

ETA<sup>2</sup> is (0.71), which indicated the effectiveness of using digital stories (on internet) to improve inferential reading comprehension skills.

### Research results summary:

1. The first hypothesis results indicated that there were statistically significant differences between the scores mean of the experimental and control groups in the literal reading comprehension skills post-test at (0,05) that favor the experimental group.



2. The second hypothesis results indicated that there were statistically significant differences between the scores mean of the experimental and control groups in the organizational reading comprehension skills post-test at (0,05) that favor the experimental group.
3. The third hypothesis results indicated that there were statistically significant differences between the scores mean of the experimental and control groups in the inferential reading comprehension skills post-test at (0,05) that favor the experimental group.

Therefore, all literal, organizational and inferential reading comprehension skills have been improved for the experimental group students studied using digital stories, while there has been no marked improvement in the improvement of literal, organizational and inferential reading comprehension skills for the control group students studied using written texts for the same content as digital stories.

### **Research recommendations:**

In light of the research results, the researcher setsome recommendations, the most important of which are the following:

1. Using digital stories to improve other skills such as listening and written expression skills in English.
2. Identify reading comprehension skills of English language that appropriate for each educational stage and develop it through educational situations.
3. Using digital stories to develop critical, creative or tasteful reading comprehension skills of English that appropriate to higher educational stages such as: middle and secondary education.
4. Using digital stories with simple vocabulary, and easy-to-understand language to teach English in the public sector, appropriate with governmental English language courses and learners linguistic background.
5. Provide teachers with research resultsabout modern strategies in educational technology.

6. Adopting the idea of integrating technology into the curriculum according to 2030 vision.
7. Holding training courses for English language teachers to train in language skills and development methods among students of all ages and educational stages.

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