

# **The Impact of Using Smart board Technology on Developing 9<sup>th</sup> Graders' English Reading Comprehension Skills**

**Alaa Ali El Udaini**

## Abstract

This study aimed at investigating the impact of using smartboard technology on developing 9<sup>th</sup> graders' English reading comprehension skills. The targeted reading comprehension skills were prediction, skimming, scanning, recognizing synonyms and antonyms. The researcher purposively chose a representative sample of (60) 9<sup>th</sup> graders from Deir Al Balah Preparatory "C" Boys' school which is run by UNRWA in the Gaza Strip. The participants were divided into two equivalent groups: each group had (30) students. The tool of the study was an achievement test (Pre & Post). The results of the study revealed that the smartboard was effective to develop the reading comprehension skills among ninth graders. In the light of these results, It is recommended that EFL Palestinian teachers should use smartboard as a tool of enhancing students' reading comprehension skills.

## ملخص الدراسة

هدفت هذه الدراسة للتعرف إلى أثر استخدام اللوحة الذكية على تطوير مهارات القراءة الفاهمة لطلاب الصف التاسع في مبحث اللغة الانجليزية، و شملت الدراسة مهارات القراءة الفاهمة التالية: التنبؤ التصفح و ادراك المعنى والعكس، و طبقت الدراسة على عينة قصدية مكونة من (60) طالباً من طلاب الصف التاسع من مدرسة ذكور دير البلح الاعدادية ج للاجئين التابعة لوكالة غوث وتشغيل اللاجئين الفلسطينيين في قطاع غزة. و وزعت العينة على مجموعتين متكافئتين: احدهما ضابطة تشمل (30) طالبا والاخرى تجريبية وتشمل (30) طالبا آخر. استخدم الباحث اختبار تحصيل قبلي وبعدي يشمل الأربع مهارات الأنف ذكرها. وتوصل الباحث الى ان اللوحة الذكية كانت فاعلة لتطوير مهارات القراءة الفاهمة لطلاب الصف التاسع. وفي ضوء هذه النتائج يوصى الباحث مدرسي اللغة الانجليزية بضرورة استخدام اللوحة الذكية كأداة لتحسين مهارات القراءة الفاهمة لدى الطلاب.

## **Introduction**

In recent years, literature has explored technological developments in varied areas that measure change. Studies on the role of computer-assisted learning in promoting concept development, interactive learning, collaborative learning and transfer of learning have produced modest support.

Recently, the use of technological aids, especially those relate to computers, has increasingly become a common feature of the classroom. There is no doubt that computer-based instruction will occupy a more central role in the second language classroom in the future. However, as we eagerly explore the potential that this new technology has to offer to language learning, we should not lose sight of the fact that it is the teacher, not the technology, who determines the quality of the learning that takes place in the classroom. Al Udaini (2011:21). Smartboards allow teachers and students to interact with content projected from a computer screen onto a smartboard surface. Virtually anything that can be done on a computer can be done on a smartboard, with the advantage that interaction involves fingers and pens and so is more kinesthetic, drawing, marking and highlighting of any computer-based output is supported, a whole class can follow interactions, and lessons can be saved and replayed (Swan et al. 2003:13).

### **Statement of the problem**

The researcher used some techniques for enhancing students' reading comprehension skills, he found that these techniques were interesting for some students but others felt bored while using these techniques. Therefore, the researcher used the smartboard in teaching reading to have students understand and interact with the text by themselves. He noticed that students were very active when using this technology.

### **Research Questions**

**The research main question is :**

**"What is the impact of using smartboard technology on developing ninth graders' English reading comprehension skills?"**

**The research sub-questions are:**

- 1.Are there statistically significant differences at ( $\alpha \leq 0.05$ ) in the total mean score of the post-test between the experimental group and the control group?
- 2.Are there statistically significant differences at ( $\alpha \leq 0.05$ ) in the total mean score between the pre-test and the post-test of the experimental group?

#### **4. Purpose of the study**

This study aimed at investigating the impact of using smartboard technology on developing 9<sup>th</sup> graders' English reading comprehension skills.

### **Literature Review**

#### **Definition of Reading**

Al Udaini (2011:15) defines reading as a basic, purposeful skill in which the teacher has to get students decode the symbols and understand the meaning. It is an interactive process in which the reader interacts with the text and employs his/her experience and knowledge to get meaning. Similarly, Abu Shamla (2010:22) clarifies that reading is "the cognitive process of understanding a written linguistic message and a mental representation of the meaning.", while Moyle (1972:23) states that reading is turning the collection of symbols seen upon a piece of paper into 'talk', or in the case of silent reading, into an image of speech sounds"

Kailani and Muqattash, (2008:85) consider reading as an additional instrument of communication to listening and speaking. People who have no chance to talk with native speakers of the target language can have an access through reading to their literature, journals, and then understand much about their civilization. In this sense, reading is the window through which other cultures can be seen and more general or specific knowledge can be gained.

#### **The Importance of Reading**

Reading enjoys a very important role in acquiring knowledge. It gets us benefit from our ancestors' experience and from our contemporary times too. Reading is essential for cognitive growth and language progress. It enables individuals to enrich their attitudes. It is also a key for recognizing others' cultures. In addition, it creates a special human with a critical and creative cognition. Generally speaking, reading is a means of getting different types of knowledge as ; religious, scientific, cultural and literary. Al Udaini (2011:17)

#### **Comprehension**

Pardo (2004:272) defines comprehension as "a process in which readers construct meaning by interacting with text through the combination of prior knowledge and previous experience, information in the text, and the stance the reader takes in relationship to the text". He adds that comprehension is largely dependent upon the reader's prior knowledge, also known as schema. Knowledge of both the content being read and the text format play an integral role in the student's prior knowledge.

### **English for Palestine-Grade 9**

*English for Palestine*-Grade 9 complements and extends the work in Grade 8. As such, Grade 9 maintains the continuity of the course and offers many new features to stimulate and challenge teachers and students: for example, there is a strong emphasis on developing reading skills, and using reading to expand vocabulary. As in the previous levels, the course has a double strand of communicative activities and work skills. The skill of reading, writing, listening and speaking are integrated throughout the course. There is more emphasis on combining the skills in sequences of activities. New vocabulary and grammatical structures are carefully controlled and are introduced in the context of the language skills. Writing is presented in graded activities to encourage them to write independently. The writing element of the syllabus in grade 9 focuses on using notes to write clearly and accurately about the topic and on writing summaries. (*English For Palestine 9, Teacher's Book, 2008: 4*)

### **Definition of Smart Board**

The Smartboard is a device that can be connected to the computer. It is basically not a new technology. It was manufactured in 1991 by smart Technologies Inc. The Smartboard is a whiteboard screen which connects to the computer and projector to display images on the screen that can be utilized as a word document. This combination of technology turns the Smartboard into a very large computer screen. As a result, the monitor becomes unnecessary because it is replaced by the Smartboard. The Smartboard is run by using the computer application. A particular software named "Smartboard Software" needs to be installed to operate the Smartboard. (Taufik, 2010:68). Similarly, smart Technologies (2004) define the smartboards as a touch-sensitive screen that works in conjunction with a computer and a projector. Educators were the first people to recognize the interactive whiteboard's potential as a tool for learning, meeting and presenting, and they continue to comprise the largest user base for this technology, particularly in the United States and the United Kingdom.

### **The smartboard in the learning Process**

We are at the dawn of an era in which educators have the potential to harness technology to produce a step change in student achievement. (Bailey et al., 2011:2). Thus, smartboards are considered as one of the most important tools for enhancing learning achievement particularly reading.

Educators were the earliest adopters of the Smartboard's potential as a tool for learning, meeting and presenting. Later, others such as business people and government staff began to appreciate this device as it helped in making their jobs easier. In later development, the Smartboard began to be utilized in educational institutions such as schools and universities in every U.S. state. In 2004, the Smartboards were installed in twenty five largest schools districts and in the majority of the top 500 school districts. It has been a choice because it helps to energize presentations and motivates learners. It has given much contribution to the growth of educational technologies. Nowadays, the Smartboards have become the most widely installed device in the world. According to Smart Technologies Inc., the Smartboard's devices which are used to provide interactive learning opportunities and enhance students' achievement have been used in more than 315,000 classrooms in the world. Smart Technologies (2007).

### **Smart Boards in the Classroom**

Smart Boards increase student involvement and promote an excitement for learning. Active student involvement enhances the academic process and fosters student development as they prepare students for life outside of school. Smart Boards are also popular because they support differentiated learning. Students are given the opportunity to get involved, interact, think aloud, and develop their own skills. They form a great tool that provides a hands-on approach to learning and students with limited motor skills can enjoy using the board as well. Smart Boards aid in meeting the needs of diverse learners and can help teachers plan differentiated lessons in all academic areas. Motivating students to learn takes constant creativity from teachers. It is a task that has been eased with the development of the Smart Board. Additionally, There are four characteristics of learning that could be enhanced through the use of technology:

- Active engagement
- Participation in groups
- Frequent interaction and feedback
- Connections to real-world contexts

The Smart Board enables the teacher to provide different types of instruction to their students. It helps to integrate everyone's learning styles and teaching styles. The tactile learners are learning from touching and writing on the board, the visual learners are watching the lesson as it unfolds on the board,

## **The Impact of Using Smartboard Technology on Developing 9th Graders' English Reading Comprehension Skills**

---

and the audio learners can participate in the class discussion and hear the board. (Gilbert and Holman, 2011:3)

### **How can a smartboard be used in a learning environment?**

smartboards are an effective way to interact with digital content and multimedia in a multi-person learning environment. Learning activities with an smartboard may include the following:

- Manipulating text and images
- Taking notes in digital ink
- Saving notes for review via e-mail, the Web or print
- Viewing websites as a group
- Demonstrating or using software at the front of a room without being locked behind a computer
- Creating digital lesson activities with templates and images
- Showing and writing notes over educational video clips
- Using presentation tools built into the smartboard software to enhance learning materials
- Showcasing student presentations
- Whole-class teaching – brings the entire class together, focuses their attention and provides structured, teacher-focused group interaction. (Ibid, 2004)

"The Smart Board was novel and created enthusiasm for learning on the part of the students as evidenced in remarks made during the lessons presented using the Smart Board and during individual student interviews, such as 'I like touching the Smart Board , 'My finger is magic,' 'I like when the lines get different, 'It's a lot more easy [using the Smart Board , but I don't know why,' 'We used the Smart Board and it went ding, ding, ding,' 'My finger is magic,' 'Every part of the word is special,' and 'The board is magic.' Students were engaged when they actually touched the Smart Board or manipulated text on it" (Solvie2001 as cited in Smart Technologies2004).

### **How does it help every students increase achievement?**

Perhaps one of the biggest challenges of using the SmartBoard efficiently is to develop consistent interaction between students, teachers, and the content on the board. The smartboard allows the entire class to view a single board and promotes student engagement through hands-on involvement. Any teacher and a student can interact with the smartboard at the front of the class

and the other students are still actively engaged. The smartboard intuitively helps every type of learner including students with disabilities.

### **Previous Studies**

Recent studies investigated the effect of the smart board in Education. A study by Malkawi (2017) aimed to investigate the effect of using the smart board on the achievement of tenth grade students in the English language, and verbal interaction, where the study sought to answer two questions: Does the achievement of tenth grade students in English language vary due to teaching strategy? Does the ratio of verbal interaction using smart board in teaching among tenth grade students vary from the ratio of verbal interaction at Flanders? (81) students from two sections chosen randomly from among (5) sections participated in the study, the experimental and control groups were chosen randomly, the experimental group were taught using smart board, and the control group were taught using the traditional way supported by computer. Achievement test in English language was applied, and Flanders' modified tool for the analysis of the verbal interaction was applied on the experimental group. The results showed the existence of significant differences in the achievement of the students; and in favor of the experimental group. The results showed a statistically significant difference in the ratio of speech of students who were taught using smart board. And the rate of teachers' speaking during teaching with smart board has increased, and periods of interruption verbal communication, and the percentage of questions rose by the teacher and her encouragement to her students, and the responses of the students and their initiatives.

In the same context, a study for Aktas & Aydin (2016) investigated the effect of using smart boards to the students' retention of the information is examined and compared to the 2005 Science and Technology curriculum. The researchers conducted the study for two 7th grade classes , one a control group and the other the experimental group, at a Secondary School in Kastamonu Province. An achievement test of 25 questions was used as a means of collecting data related to the unit. For four weeks, the control group students studied the unit according to the 2005 Science and Technology curriculum, while the experimental group studied the unit with supporting smart board activities. The achievement test, prepared to measure the equivalence of the groups in terms of knowledge, was applied as the pre-test. The same test was also applied as the post-test to measure the achievement of



## **The Impact of Using Smartboard Technology on Developing 9th Graders' English Reading Comprehension Skills**

---

both groups. Finally, in order to measure how much the students recalled the learned information, the same test was applied a third time as a retention success test four weeks later. The resulting data was analysed with the SPSS 20 statistical software package, and the t-test was used in the evaluation of the data.

Similarly, a study by Almajali et. al. (2016) investigates the effectiveness of using Smart Board for teaching social studies on students' achievement in public schools in Jordan. To achieve the purpose of the study, a pre/post-test was constructed to measure students' level in social studies. The sample of the study consisted of 258 eighth grade students; (120) male students from Marj Al Hamam secondary school for boys and (138) female students from Marj Al Hamam Basic school for girls during the first semester of the academic year 2015/2016. The subjects of the study were distributed into two groups (experimental and control). The experimental group was taught social studies using smart board while the control group was taught using the conventional way. Descriptive statistical analyses were used (means and standard deviation) for the pre and post- tests of students' achievement in social studies. Comparison statistical methods were used (Two Way ANOVA) analysis of variance to make a comparison between the control and the experimental groups and gender variables (male and female). The findings of the study indicated that there were statistically significant differences in the post- test between the control and the experimental groups in their achievement in social studies in favor of the experimental group, and there was no statistically significant difference in the students' performance in social studies due to gender.

In the same concern, a study by Ukwueze & Amechi (2014) was carried out to determine the effect of smart board on student's achievement in word processing. Two research questions guided the study. The study adopted quasiexperimental design and was carried out in University of Nigeria. The population for the study was 990, while the sample was 100. Smart boards were used to determine the effect of teaching word processing on students. The result showed better achievement by the students when compared with the use of traditional method. Based on the findings, recommendations were made to relevant authorities regarding the effective utilisation of this technology for instructional delivery.

In a similar study by Nisius (2010) which aimed to determine whether the Smart Board technology, along with the interspersal of known items, would

increase students with reading disabilities ability to learn and retain sight words. The research question that guided this study was: Will using the Smart Board technology utilizing interspersal of known items increase recognition of sight words with students with reading disabilities? The following sub-question was also included in the study: Will implementing interspersal of known items using the Smart Board technology increase the number of sight words students read correctly at a higher percentage as compared to using interspersal of known items alone? The participants in this study were two second grade students (n=2) and two third grade students (n=2) from an elementary school in northern Minnesota. The elementary school included grades kindergarten through third grade. The entire district had over 2000 students with the elementary school having just under 600 students. The elementary school had approximately 65 students receiving special education services. Study participants included one second grade male who was cognitively disabled and received reading support from the special education teacher, a second grade female with a learning disability in reading, a third grade female who received reading support under the Other Health Disabilities category, and a third grade male who had a reading disability. All four participants were Caucasian. The participants attended daily special education reading class for forty-five minutes each day in a resource room. The students received reading instruction at their reading level from the special education teacher in a small group setting. Results of this study showed that the Smart Board technology along with the interspersal of known items did enhance students with cognitive and/or learning disabilities ability to learn and retain sight words. The Smart Board technology did not, however, increase the participant's ability to learn and retain sight words at a higher rate than the interspersal of known items alone.

In his study, Fox (2010) sought to address the impact of smartboard on reading instruction. Since there was little evidence that supports smart board technology during reading instruction, it was essential to determine whether or not teachers find this instructional tool to be a worthwhile addition to the teaching of reading. The question to be examined was; "What are teachers' perceptions of the impact of smartboard on reading instruction in a third grade classroom?" The research design included both semi-structured interviews and observations. Semi-structured interviews were used to obtain information from participating teachers, while observations allowed the researcher to see how the smartboard was used during daily lessons. This

## **The Impact of Using Smartboard Technology on Developing 9th Graders' English Reading Comprehension Skills**

---

study used qualitative research to gather information. Semi-structured interviews were forms of questioning that allowed the researcher to prompt the subjects to receive additional information and feedback. Observations were conducted with each of the participants to gather a more in depth understanding of how the smartboard was used during a lesson. Only teachers were observed and recorded in the data. Although students were present in the classroom, their responses to the lesson were not recorded for confidentiality reasons. Participants were chosen from a school in Northwestern Ohio. The elementary school and teachers selected for this study were chosen based on convenience sampling. The school was located in a suburban middle class neighborhood and had a high rating for student achievement and staff dedication. Teacher interview questions were created to be in-depth and detailed. These questions sought to answer how a third grade teacher used the smart board during reading instruction and whether he/she thought these teaching tools impacted reading achievement among third grade students. Observations on the other hand, gave the researcher a first hand look at how the teacher used the smart board during a lesson. Results showed that the teachers who participated in this study were extremely self-motivated and willing to engage technology into reading instruction. Their teaching practices can be used as an example of how the teaching of reading had evolved to include multiple forms of technology.

A further study by Young (2011) aimed to ascertain whether the use of a Smart Board with ceiling amplification speakers as a supplemental device increased word recognition and reading fluency in the general education second grade classroom. Furthermore, the researcher believed that singing modern kid's songs while reading the words on the Smart Board and hearing the words sung from the audio speakers would subsequently increase auditory word recognition and the rate at which students read. This extensive study focused on elementary language arts classes to answer the research question: will using the Smart Board to see and hear songs with ceiling amplification audio speakers increase second-grade general education students' word recognition and reading fluency compared to classes without this technology? This study was conducted during the months of September 2011 to December 2011. The research design included a control and treatment group to gain precise results. Two second-grade language arts classes were the research sample, with a population of approximately 40 students. A test population of one classroom using the technology and a control population of one

classroom not using the technology was used. The data collected during this research included pre- and post-word assessments seen and heard from the various songs played to assess any changes in word recognition. The research collected and analyzed from September through December 2011 showed a moderate increase in word recognition and a moderate increase in reading fluency and accuracy among research groups in comparison to control groups. Overall, the research showed that singing songs on the Smart Board while listening to them via Smart Audio (ceiling-projected speakers) played a moderate role in increasing word fluency.

Furthermore, Campbell and Mechling (2009) examined the effectiveness of teaching letter sounds in a small group arrangement using computer-assisted instruction with Smart Board technology and a 3s constant time delay procedure to three students with learning disabilities. A multiple probe design across letter sound sets and replicated across students evaluated the effectiveness of the program and students' acquisition of other students' letter sounds through observational learning. Three kindergarten students (two males and one female) with learning disabilities participated in the study and were selected based on their individualized educational plan (IEP) objectives for increasing letter and sound identification. Students were screened for the following entry-level skills: (a) visual ability to see letters on the Smart Board screen, (b) ability to hear other students' responses and instructor directions, (c) verbal imitation of letter sounds and names, (d) ability to attend up to 15 min in a small group arrangement, and (e) wait response of 3s. All students had experience with large and small group instruction and computer-assisted instruction using a desktop computer and 1 to 1 instruction. Results indicated that (a) the program was effective in teaching letter sounds to three students and (b) students acquired some letter sounds targeted for other students and incidental information (letter names) presented in the instructive feedback statements for their own and other group members' target stimuli.

## **Methodology**

### **1. Type of Research Design**

The study attempted the experimental approach. Two groups were assigned as the participants of the study; the experimental group, and the control one. The experimental group was taught the reading comprehension texts via the smartboard technology, while the control group was taught via the traditional method. The experiment lasted for 5 weeks.

## **2. Sampling procedures**

The sample of the study consisted of (60) students distributed into two groups; one experimental group consists of (30) students and one control group includes (30) students. The groups were a purposive sample from Deir El Balah Prep. "B" Boys' School for Refugees in Deir Al Balah city in the Gaza strip which is run by UNRWA.

The students in both groups were equivalent in the economic, cultural and social level. They were equivalent in their general achievement in accordance with the statistical treatment of their results in the first term of the school year (2017-2018). In this year, all classes were equivalent in their achievement as they were distributed according to their achievement in equivalent classes. They were equivalent in their English language achievement in accordance with the statistical treatment of their results in the final-first term exam of the school year (2017-2018). Age variable of the sample was also controlled before the experimental application. They were 15 years old. In addition, the previous learning in the reading comprehension skills was controlled too.

## **3. Instrumentation**

To achieve the aims of the study, the researcher prepared a pre-post achievement test depending on the most important skills. In addition, they designed a computer program trying to help students understand the text and interact with it via the smartboard.

### **The achievement test**

A pre-post achievement test was prepared by the researcher to measure the students' achievement in reading comprehension skills. It was used as a pre test, applied before the experiment and as a post test, applied after the experiment .

### **The general aims of the test :**

The test aimed at measuring the effect of the smartboard technology on the students' reading comprehension achievement in English language. It was built according to the criteria of the test specification. The reading comprehension skills under investigation were *prediction, skimming, scanning, developing awareness of synonyms and antonyms*.

### **The items of the test:**

One reading comprehension passage was used in the test. The passage was selected from grade nine Students' Book 2016 (*English For Palestine 9*), which is taught in the Palestinian schools in the Gaza Strip and the West Bank. The passage talks about the *UNRWA at Work*. It was selected from the

reading text in Unit 4, Lesson 5. The students didn't study this text and they didn't have prior knowledge or feedback about it. The items used in each question were equal in weight. These questions were constructed according to the table of specification. The concentration was on the skills which took more than 90% in the relative weight. Three marks were distributed equally for each question. The same test was carried out after the (4) week intervention. Results of the pre and post test were recorded, statistically analyzed and compared.

### **Controlling the variables**

To assure the results accuracy and avoid any marginal interference, the researcher tried to control the following variables before the study:

1-Age

2-General achievement

3-English general achievement

4-Previous learning in the English reading comprehension skills. Table (1)

Table (1)

### **T.test independent sample results of differences between experimental and control group for all of the sub domain and total score of the domain**

scope	GROUP	N	Mean	Std. Deviation	t	Sig. value	sig. level
<b>Prediction</b>	Experimental	30	1.100	0.781	0.363	0.718	not sig.
	Control	30	1.183	0.987			
<b>Skimming</b>	Experimental	30	1.567	0.858	0.616	0.540	not sig.
	Control	30	1.433	0.817			
<b>Scanning</b>	Experimental	30	1.167	0.986	0.141	0.889	not sig.
	Control	30	1.200	0.847			
<b>Syn &amp; ant</b>	Experimental	30	0.700	0.837	1.977	0.053	not sig.
	Control	30	1.117	0.795			
<b>Total degree of the test</b>	Experimental	30	4.533	1.956	0.735	0.465	not sig.
	Control	30	4.933	2.247			

"t" table value at (58) d f. at (0.05) sig. level equal 2.00

"t" table value at (58) d f. at (0.01) sig. level equal 2.66

Table (1) indicates that there are no statistical significant differences at (0.05) level among experimental and the control groups attributed to reading comprehension skills variable.

## Results: Data Analysis

### *The result of the study*

#### **1-The first question is stated as follows:**

Are there statistically significant differences at ( $\alpha \leq 0.05$ ) in the total mean score of the post-test between the experimental group and the control group?

To examine this question, means and standard deviation of the experimental and the control groups' results on the post-test of reading comprehension skills were computed. The researcher used Independent Samples T-test to measure the significant differences. To interpret this hypothesis, the researcher used T.test independent sample results of differences between experimental and control group in the post test.

**Table (2)**

**t.test independent sample results of differences between the experimental and the control group in the post test.**

scope	GROUP	N	Mean	Std. Deviation	t	Sig. value	sig. level
<b>Prediction</b>	Experimental	30	1.800	0.877	3.720	0.000	sig. at 0.01
	Control	30	0.867	1.058			
<b>Skimming</b>	Experimental	30	2.433	0.728	3.667	0.001	sig. at 0.01
	Control	30	1.667	0.884			
<b>Scanning</b>	Experimental	30	2.300	0.750	4.350	0.000	sig. at 0.01
	Control	30	1.333	0.959			
<b>Syn &amp; ant</b>	Experimental	30	1.617	0.997	2.289	0.026	sig. at 0.05
	Control	30	1.067	0.858			
<b>Total degree of the test</b>	Experimental	30	8.150	1.762	6.216	0.000	sig. at 0.01
	Control	30	4.933	2.220			

"t" table value at (58) d f. at (0.05) sig. level equal 2.00

"t" table value at (58) d f. at (0.01) sig. level equal 2.66

The results in table (2) indicate that the (t) computed value was greater in all the skills and in the total score of the post test than the (t) table value in the post test. This means that there are significant differences at ( $\alpha = 0.01$ ) and (0.05) between the experimental group and the control one favouring the experimental group. There is also a significant difference between the means of both groups in favour of the experimental group, which means that the

smartboard technology was effective to develop the reading comprehension skills.

To calculate the size effect the researcher used Eta square " $\eta^2$ " by using the following equation

**Table (3 )**

**"t" value, eta square " $\eta^2$ " , and "d" for each domain and the total score**

Domain	t value	$\eta^2$	d	Effect volume
Prediction	3.720	0.193	0.977	Large
Skimming	3.667	0.188	0.963	Large
Scanning	4.350	0.246	1.142	Large
Syn & ant	2.289	0.083	0.601	
Total degree of the test	6.216	0.400	1.633	Large

Table (3) shows that there is a large effect size , for each sub domain and the total score of each domain, which means the smartboard has a large effect and improves the experimental group skills.

Implementing the effect size equation, the researcher found that the effect size of *all the skills* is large. This could be attributed to the flexibility which the interactive smartboard technology presented to students.

**The Second question is stated as follows:**

Are there statistically significant differences at ( $\alpha \leq 0.05$ ) in the total mean score between the pre-test and the post-test of the experimental group.

To examine this question, means and standard deviation of the experimental in the pre and post test were computed. The researcher used Independent Samples T-test to measure the significant differences.

**Table (4 )**

**t.test paired sample results of differences between pre and post test of the experimental group in all the skills and total score of the test**

criteria	applied	N	Mean	Std. Deviation	t	Sig. value	Sig. level
Prediction	pre	30	1.100	0.781	3.881	0.001	sig. at 0.01
	post	30	1.800	0.877			
Skimming	pre	30	1.567	0.858	4419	0.000	sig.



## The Impact of Using Smartboard Technology on Developing 9th Graders' English Reading Comprehension Skills

criteria	applied	N	Mean	Std. Deviation	t	Sig. value	Sig. level
	post	30	2.433	0.728			at 0.01
Scanning	pre	30	1.167	0.986	5.461	0.000	sig. at 0.01
	post	30	2.300	0.750			
Syn & ant	pre	30	0.700	0.837	3.748	0.001	sig. at 0.01
	post	30	1.617	0.997			
Total degree of the test	pre	30	4.533	1.956	7.527	0.000	sig. at 0.01
	post	30	8.150	1.762			

"t" table value at (29) d f. at (0.05) sig. level equal 2.05

"t" table value at (29) d f. at (0.01) sig. level equal 2.76

Table (4) shows that there are statistical significant differences between pre and post test in all the skills and the total score of the test favouring the post test, which means that the smartboard use is effective.

To calculate the effect size the researcher used Eta square " $\eta^2$ " and "d" size effect :

**Table (5)**

"t" value, eta square " $\eta^2$ ", and "d" for each skill and the total degree

Domain	t value	$\eta^2$	d	Effect volume
Prediction	3.881	0.342	1.441	large
Skimming	4.419	0.402	1.641	large
Scanning	5.461	0.507	2.028	large
Syn & ant	3.748	0.326	1.392	large
Total degree of the test	7.527	0.661	2.796	large

Table (5) shows that there is a large effect size for each skill and the total score of the test, this means that the smart smartboard has a large effect and improves the skills for the experimental group.

Clearly, the effect size of post test was large in each skill and in the total score of test is large. This could be attributed to the technological

environment in which students are involved in. Moreover, students work by their own to answer questions on the smart board.

### **Summary**

After analyzing the data of the test statistically, It is obvious that there are significant differences in developing the reading comprehension skills between students in the experimental group and their counterparts in the control one in favor of the experimental group. The results of the study indicate that students in the experimental group were more aware of the reading comprehension skills. In addition, the students who studied reading via the smartboard became more successful in answering the reading comprehension questions. This may be due to the pictures, sounds and the flexibility which gets students move pictures easily using their fingers, as well as, the technological environment in which students were involved in. The research findings created an underlying view of reading instruction and the use of smart board technology. A review of literature examined how reading has evolved from the traditional ways to modern ones which focused on skills, to a more balanced approach to reading that includes writing, listening, speaking, viewing and visual representation. Standards that include viewing and visual representation are sometimes overlooked in the classroom because literature can often be one-dimensional.

Books may display pictures but the world of media literacy is used to expand knowledge and provide students with a deeper level of visual representation. How students view text is no longer limited to books. Instead, a world of new literacies has been accepted as a valuable component of learning. New literacies allow students to retrieve information from a variety of sources while still engaging in the traditional skills of reading and writing. New literacy components can include the Internet, electronic books and any other forms of multimedia technology. The use of smart boards in the classroom has provided teachers with a tool, which can embed all the necessary resources and additional software needed to fully engage students in a lesson (Fox 2010) .

### **Discussion**

Al Udaini (2011) confirms that reading from computer is more effective than reading from textbooks. Also, the computer helps students interact with the text effectively and it develops students' attitudes toward reading. Integrating technology in diverse content areas can be motivating and encouraging for

## **The Impact of Using Smartboard Technology on Developing 9th Graders' English Reading Comprehension Skills**

---

students to learn the instruction being taught. Many schools in Palestine have incorporated a diverse amount of technology to use for every subject such as, numerous types of software, desktops, laptops, handheld computers, peripheral technologies, Internet resources, multimedia technologies, and e-learning systems (Frank, Lei, & Zhao, 2006). It is clear the growth of technology has been so enriching and accessible that it has moved into classrooms and brought new changes to how curriculum is taught. There are several technologies that are used in classrooms and implemented into lessons to benefit teachers and students.

This study is similar somehow to the recent studies as it aimed at investigating the effect of using smartboard on developing ninth graders' English reading comprehension skills. The targeted reading comprehension skills were prediction, skimming, scanning, recognizing synonyms and antonyms. The current study asserts that smartboards and their accompanying software allows for the development of classroom activities that are engaging for students, so they encourage greater focus, participation, interaction, and improve student learning outcomes. Smart Technologies (2006:7) reported that smartboards appeal to both intrinsically and extrinsically motivated students. Even though, students may be equally motivated to perform a task, the sources of their motivation may differ. Some students are intrinsically motivated to learn because they are driven to understand through reflection and enjoy participating in learning activities. Others are extrinsically motivated by enticements, rewards or teacher-defined objectives.

It can be said from the previous studies that the introduction of the Smart Board can have a positive impact on a reading class. This advancement in technology can change the way we design our daily instruction. Technology has provided a significant change in the way we're able to deliver information to our students, while at the same time creating avenues that allow them to expand their knowledge. The use of the Smart Board is a great way to enhance differentiated instruction and supports the needs of diverse learners. Its application creates a learning atmosphere which is dynamic, effectual, productive, and exciting for all active participants. The use of the interactive board can have a strong impact on students when integrated appropriately.

## **Conclusion**

The findings of the study hypotheses can be summarized as follows:

1.The finding of the first question showed that there were statistically significant differences at ( $\alpha \leq 0.05$ ) in the total score between the experimental group and the control group.

2.The finding of the second question revealed that there were statistically significant differences at ( $\alpha \leq 0.05$ ) in the total mean score between the pre-test and the post-test of the experimental group.

Additionally, the smartboard gave students more opportunities to enhance their speaking skills through classroom discussion. In addition, the use of video clips, countless visuals and picture reading allowed students to interact with a story or concept through going through different scenes.

## **References**

- 1.Abu Shamla ( 2010) **The Effectiveness of a Suggested Program Based on Prior Knowledge to Develop Eighth Graders' English Reading Comprehension Skills**. *MA thesis. Islamic University of Gaza*. Available:..  
elibrary.iugaza.edu.ps
- 2.Aktas, S., & Aydin, A. (2016). **The effect of the smart board usage in science and technology lessons**. *Eurasian Journal of Educational Research*, 64, 125-138 <http://dx.doi.org/10.14689/ejer.2016.64.7>
- 3.Almajali H. , Al Abdallat S. , Shamayleh N. (2016) **The effectiveness of using smart board for teaching social studies at public schools in Jordan**. Vol. 4 (1), pp. 227-233, February, 2016 *Global Journal of Educational Foundation*.
- 4.Al Udaini, A. (2011) **The effect of a computerized program on developing 9<sup>th</sup> graders' reading comprehension and their attitudes towards reading in Palestine**. Unpublished MA thesis. The Islamic University of Gaza.
- 5.Bailey, A. ; Henry, T. ; McBride, L. and Puckett, J. (2011). *Report ,Unleashing the potential of Technology in Education. The Boston Consulting Group*. August(2011). Available:  
<http://www.bcg.com/documents/file82603.pdf>
- 6.Campbell M. and Mechling L. (2009) **Small Group Computer-Assisted Instruction With Smart Board Technology An Investigation of**

- Observational and Incidental Learning of Nontarget Information.** *University of North Carolina Wilmington.* Volume 30 Number 1 January/February 2009 47-57 . <http://online.sagepub.com>
- 7.Carey, J.M. and Kacmar, C.J. (1997). **The impact of communication mode and task complexity on small group performance and member satisfaction.** *Computers in Human Behaviour*, 13(1), 23- 49.
- 8.Clark J. and Nordness P. (2007) **Enhancing Emergent Literacy Skills with SMART Board Interactive Whiteboard Technology.** *MacArthur Early Childhood Center.* 235 West Grant, Macomb, IL 61455
- 9.Fox M. (2010) **Interactive Whiteboard Teachnology and Reading instruction.** Published MA thesis. Bowling Green State University.
- 10.Holman, S. and Gilbert, K. (2011) **The Effect of SMART Board Use in the Elementary Classroom on Student Mathematics Achievement as Measured by Curriculum Tests.** *University of Maine at Farmington Graduate Program - Cohort 2 .* Spring 2011
- 11.Howse E., Hamilton D. and Symons L. (2000) **The effect of a smart board interactive whiteboard on concept learning generation of ideas, group processes and user interaction satisfaction.** *Queen's University*
- 12.Kent P. (2004) **E-Teaching and Interactive Whiteboards: Technology used to enhance effective pedagogy - creating a significant impact on classroom practice and student learning.** *A paper was presented as part of the Australian Computers in Education Conference – Adelaide 2004.*
- 13.Malkawi, N. (2017) **The Effect of Using Smart Board on the Achievement of Tenth Grade Students in English language and on Verbal Interaction during Teaching in public schools.** *International Research in Education* ISSN 2327-5499 2017, Vol. 5, No. 1. doi:10.5296/ire.v5i1.11035 URL: <http://dx.doi.org/10.5296/ire.v5i1.11035>
- 14.Nisius R. (2010) **The effects of the smart board technology utilizing interspersal of known items on sight word recognition of students with reading disabilities.** Unpublished MA thesis. University of Minnesota Duluth. 2010
- 15.Pardo, L. (2004). **What every teacher needs to know about comprehension.** *Reading Teacher*, 58, 272-280

16. Roschelle, J., Pea, R., Hoadley, C., Gordin, D. & Means, B. (2000). **Changing how and what children learn in school with computer-based technologies.** *Future of Children*, 10(2), 76-101.
17. SMART Technologies Inc. (2007). Company History.
18. SMART Technologies (2004) **Interactive Whiteboards and Learning: A Review of Classroom Case Studies and Research Literature.** April 2004 SMART Technologies Inc.
19. Taufik (2010) **The Use of Smartboard Technology as An Instructional Tool .** *AL-BAYAN VOL. NO. 22*, Juli 68 – December 2010
- 20. Ukwueze & Amechi (2014) The effect of smartboard on students achievement in computer studies in Nigerian tertiary institutions.** *Computer Education Research Journal, (CERJ,)* Vol. 1, No 1, 2014 pp.134-139
21. Young B. (2011) **The Effect of Technology in a Second Grade Classroom: Using the Smart Board with the SMART Audio Classroom Amplification System to Build Word Recognition and Reading Fluency.** *A Project Submitted December 15, 2011*
22. Zhao, Y., Lei, J., & Frank, K. A. (2006). **The social life of technology: An ecological analysis of technology diffusion in schools.** *Pedagogies: An international Journal*, 1(2), 135-149.