

The Impact of Using Interactive Boards on Secondary School Students' Learning Outcomes in Egypt in the Computer Skills Course

Mohammed Elmetwali Mohammed Amer

College of science and humanity studies, Prince Sattam bin Abdulaziz University, Al-Sulail, Saudi Arabia

Email: mohammedamer850@yahoo.com

ABSTRACT

This study seeks identifying impact of using interactive boards on secondary school students' learning outcomes in Egypt in the course titled (computer skills). The learning outcomes in this regard refers to academic achievement in the latter course. An experimental approach is adopted to ensure that the goals are met. 40 male school students were sampled. They were selected from 2 sections of the first secondary grade in a private secondary school in Cairo, Egypt. They got divided in an equal manner into control and experimental groups. To teach the control group, interactive boards weren't used. To teach the experimental group, interactive boards were used. During the trial, 4 lessons were covered in each section through 4 periods. Pre-test and a post-test were employed for having the achievement measured in the latter course. SPSS program was used. Based on analysis, the two groups are similar in terms of the computer literacy level. The researcher concluded that using interactive boards significantly and positively affect achievement in the latter course. He recommends providing secondary school teachers in Egypt with training courses that improve their ability to use interactive boards in classroom.

Keywords: Interactive boards, academic achievement, computer skills course, Egypt, secondary schools

Correspondence:

Mohammed Elmetwali Mohammed Amer

College of science and humanity studies

Prince Sattam bin Abdulaziz University

Al-Sulail, Saudi Arabia

Email: mohammedamer850@yahoo.com

INTRODUCTION

Much attention has been provided to the use of ICT in educational institutions, including schools and universities. Many studies were conducted about such use. Many studies- e.g. [Hussain et al. \(2017\)](#)- suggest that the use of ICT can significantly improve students' learning outcomes, such as achievement and retention. Hence, in 2016, the Egyptian Ministry of Education declared that 5179 interactive boards were distributed to several secondary schools. It declared that 16657 interactive boards were distributed to several preparatory schools. It declared that several special education schools were also provided with interactive boards. It declared that interactive boards were distributed in 13 Egyptian cities ([Mohammad, 2016](#)). That indicates that the Egyptian Ministry of Education is keen on improving the quality of school education. It indicates that the latter ministry is keen on providing students with convenient learning environment.

Today, many Egyptian schools today employ tablets and interactive boards in order to improve the quality of the provided education and keep up with latest developments. Through using tablets and interactive boards, students and teachers can access electronic curricula at any time. All students and teachers have username and password to access the systems of the tablet and interactive boards. The use of tablets and interactive boards enabled teachers and students to access the bank of knowledge. It enabled students in Egypt to access many educational videos ([Hussein, 2019](#)).

The use of tablets and interactive boards enables teachers to use creative instructional approaches to teach students. To utilize tablets efficiently, teachers at Egyptian schools were enrolled in training courses that improve their ability in using interactive boards and tablets ([Hussein, 2019](#)). Interactive boards may be called smart boards or electronic boards ([Tunaboylu and Demir, 2017](#)). They were invented in the early 1990s. They were used for meeting business-related goals at the beginning. Later on,

they become used for meeting educational-related goals. Today, they are used in numerous universities, schools and kindergartens ([Schroeder, 2008](#)). In fact, in 2018, 4.31\$ billions were invested for utilizing such boards in institutions. It is expected that such cost shall become 5.16 by the year 2023 ([Al-Rabaani, 2016](#)).

Such boards are widely used today in classrooms due to their advantages in the field of education. For instance, they facilitate the learning process. They positively affect students' learning outcomes. For instance, they can catch students' attention and motivate them to learn. They improve students' retention of information and concentration in classroom. They increase the extent of involvement of learners in the learning activities. They improve the learners' attitudes towards the learning process ([Wall et al., 2005](#)).

A disagreement exists among scholars about how effective it is to use interactive boards for improving achievement. In this regard, [Albaaly and Higgins \(2011\)](#) suggest that interactive boards don't improve students' learning outcomes. Other scholars suggest that using such boards has a positive impact on learning outcomes. Due to having such disagreement among scholars, this study aimed to explore the effectiveness of interactive boards in improving the learning outcome of secondary school students' in Egypt in the course titled (computer skills). The outcome in this context refers to achievement. Conducting this study is very important because it shall raise the computer literacy of students in Egypt and improve the quality level of the computer education in Egypt. Improving such quality shall provide the labor market with highly qualified workers in the future.

Hypotheses:

H0.1: No significant difference exists- at the significance level of $p = 0.05$ - between the two groups in terms of their means on the pre-test

H0.2: No significant difference exists- at the significance level of $p = 0.05$ - between the two groups in terms of their means on the post-test

The Study's Question:

Does using interactive boards positively and significantly affect the achievement of secondary school students in Egypt in the course titled (computer skills)?

The Study's Significance:

-This study is significant because it contributes to improving the quality of secondary school education in Egypt. It contributes to raising the secondary school students' achievement levels in the course titled (computer skills)

-This study is significant because the studies that shed a light on using interactive boards in computer education are scarce. Thus, it fills a gap in the literature related to this area.

Limits

- Temporal limits: During the 1st semester of the academic year of (2019/2020), this study was carried out
- Spatial limits: This study was carried out in a private secondary school in Cairo.
- Human limits: Secondary school students in Egypt are the ones being targeted in this study
- Thematic limits: This study measures how effective it is to use interactive boards in improving secondary school students' learning outcome in Egypt in the course titled (computer skills). The targeted outcome is the academic achievement

DEFINITION OF TERMS

Theoretical definitions:

-Learning outcomes: Such outcomes represent the amount of information that the learner has understood and learnt through the academic session/ or the school period. They may refer to the degree to which the study mastered a specific skill through the learning session. They may include the students' satisfaction with their learning process. They may include academic achievement levels (Ismail and Salih, 2018).

-Interactive boards: They refer to large touch-sensitive white boards which are linked to data projector. They allow the teacher to display the multimedia stored on the computer. They allow the teacher to add input and manipulate data through using an electronic pen or finger. Having an advanced software with board shall offer teachers additional functions (De Vita *et al.*, 2014).

Operational definitions:

-Learning outcome: In the present study, learning outcomes is measured through academic achievement. It is measured through administering the pre-test and the post-test.

-Interactive boards: They refer to the interactive boards used by secondary school students in the course titled (computer skills) in Egypt.

Theoretical literature:

The use of interactive boards increases students' engagement. That is because such use shall make students employ several senses: touching, seeing and hearing (Beeland, 2002). The use of interactive boards plays a major role in enhancing academic achievement. It raises the quality of the provided education (Thompson & Flecknoe, 2003). It enables instructors to update information. It enables instructors to use e-books. It increases students' motivation, attention and participation in classroom (Kennewell & Beauchamp, 2007). It attracts students' attention and imagination. It promotes creativity among students (Becker, C., & Lee, 2009). It improves

students' achievement in math and language courses. It improves students' reading skills (López, 2010).

The use of interactive boards develops students' higher order thinking skills and improves the interaction in classroom (Blau, 2011). It improves students writing skills (Albaaly and Higgins, 2011). It plays a major role in improving the 21st century skills. It provides students with learning opportunities in STEM (i.e. science, technology, engineering, and math). It provides students with language learning opportunities. That is because students may make video calls with natives through using interactive boards. The use of interactive boards improves the problems solving and critical thinking skills of students. That is because such boards enable students to use multimedia and enable students to see things outside the school environment. Using such boards promotes collaboration and students' interaction with each other, because students shall be capable of carrying out activities and games that improve students' social bonds with each other. It provides students with opportunities to reach knowledge by themselves. That is because such boards enable students to access various types of resources and knowledge. For instance, such boards enable students to read journals, articles, encyclopaedias and books, watch instructional videos, and attend e-conferences. In other words, using such boards enables students to serve as active learners (Shi *et al.*, 2012).

Using such boards improves the metacognitive skills of students, because it offers them the opportunities to construct knowledge and manipulate items. Thus, it improves the problem-solving skills and imagination of students (Jbeili, 2014). It improves the quality of the interaction in classroom and promotes innovation. That is because such boards enable students to manipulate the items on the screen. The use of such boards improves students' understanding for information in math courses. Interactive boards are widely used due to their significant features. For instance, the software provided with such boards include the following features:

- a) Providing indefinite storage and ability to retrieve material quickly to be used for revision
- b) Using animation to illustrate explanations
- c) Manipulation of items and objects through using programs
- d) Displaying multimedia through projector
- e) Using various colours, shading and highlighting
- f) Using the hide and reveal feature
- g) Using the drag and drop features (De Vita *et al.*, 2014)

The use of interactive boards increases students' engagement (Lant, and Lawson, 2016). It makes learning an enjoyable process that promotes positive and good attitudes towards learning among students. It motivates students to learn and makes them wile to learn more information (Luo and Yand, 2016). It fosters the cognitive development of students. It allows students to save their time due to the electronic features. For instance, students will not have to lose time in searching through paper-based books. Through just a couple of clicks, students can find the intended information in the e-book. The use of such boards increases teachers' level of productivity. It provides teachers with sources of knowledge and information. Thus, it expands teachers' knowledge and information. That shall contribute to developing teacher professionally. The use of such boards makes learning enjoyable. That is because students love using technology in their learning process. (Alshaikhi, 2017).

The use of interactive boards reduces the efforts exerted by teachers for preparing a lesson and the time needed for such preparation. It creates a learning environment that is based on cooperative work. It plays a major role in attracting students' attention and developing their thinking. It raises students' motivation to learn and extent of being engaged in the instructional activities and learning process. It enables teachers to develop their teaching approaches (Alshaikhi, 2017).

The use of such boards is effective in social studies courses. It can significantly improve the learning environment and students' skills and capabilities. That's is because such boards enable students to watch several educational videos for mastering a specific skill. The use of such boards enables teachers and students to connect pieces of information with each other. It enables teachers to present geographical phenomena in classroom. It allows teachers to use (videos, documents, photos, maps etc.) to present historical events. It allows students to have access for interesting scientific websites. That shall expand students' knowledge (Al-Rabaani, 2018).

The use of such boards expands students' knowledge. It saves the time and efforts dedicated by students for learning. It allows the students to interact with the material and keep up with the latest developments. It contributes to creating a democracy-based learning environment that improves the self-confidence of students. It offers access to many types of references. It makes the learning process more organized, because it allows teachers to save the information written on the boards. It facilitates the process through which students share their ideas with others. It lets the students save the efforts and time in designing the academic material. It makes the teacher a facilitator for acquiring knowledge. It allows teachers to review the previous information in a quick manner. It allows teachers to illustrate the meaning of concepts in a clear manner. It improves the communication skills of students, because it allows students to carry out group learning activities (Al-Qaraawi and Ghannam, 2019).

Review of Empirical Studies

Swan *et al.* (2008) carried out an investigation for the influence of using interactive boards on students' achievement in 11 elementary schools located in northern Ohio, USA. The experimental group consists of 31 classes who were taught through using interactive boards. The control group include 43 classes who were taught through using conventional boards. The state Ohio Achievement Tests (OAT) was used. It was found that using such boards led to a slight rise in achievement in math course. However, the use of interactive boards didn't lead to the rise of the students' achievement in other courses.

Ayadat (2010) investigated the perceptions of teachers and school students towards the use of interactive boards in Irbid, Jordan. He used a teacher-survey and a student-survey. 30 teachers and 113 students were sampled. Based on the student-survey, using such boards increases concentration and attention and makes lessons easier. It enables students to interact with the material due to the interactive features. It improves the communication between student and teachers. It increases students' participation in group discussion. It enables students to learn complex vocabulary and concepts. It increases students' interest in the material because it presents it in an interesting manner. It improves the scientific thinking capabilities of students. It facilitates the process of preparing for the lesson. It provides students with

opportunities to contact people outside the classroom. It enables students to avoid the boring routine in classroom (Ayadat, 2010).

Through the teacher-based survey, the researcher concluded that using such boards improves quality of education and developing students' creative thinking. It lets students learn a great amount of information within a short duration. It improves achievement, because it present information in well-organized manner. It allows teachers to explain the material well and motivate students (Ayadat, 2010).

Aburezeq (2012) carried out an investigation for the influence of using interactive boards on the acquisition of lesson planning skills to Arabic language student teachers. She investigated the attitudes of those student teachers towards such use. 53 students were sampled from Al Ain University. Through the use of pre-test and post-test, the researcher concluded that using such boards improves the teachers' skills in making daily lesson plans. Through the use of a survey, she concluded that such use makes the learning process easier and faster. Such use makes students save much effort while learning vocabulary and increases the extent of understanding the required content. It allows students to use various types of instructional resources for gaining more knowledge. It enables students to dedicate more time for learning. It attracts the attention of students and motivate them to learn, due to employing entertaining features and multimedia. It improves students' IT literacy because it offers opportunities to explore the way of using computer and smart technologies. It enhances students' ability to write in a clear and neat manner, because students shall be encouraged to write on such boards (Aburezeq, 2012).

Using such boards allows teachers to use various types of instructional strategies which improve their instructional performance. It improves retention and achievement, due to the use of eye-catching colours and offering many opportunities to implement knowledge. It increases the student-teacher interaction due to carrying out various interesting instructional activities. It enables teachers to use various types of assessment tools and strategies. Thus, it offers accurate knowledge about the outcomes of learning. It promotes positive perceptions for the material, due to the use of enjoyable learning methods. It improves students' problems solving and thinking skills due to the ability of using e-mind maps and brainstorming activities. It increases the interaction between the students, because it provides opportunities to carry out group learning activities. In other words, it encourages students to cooperate with each other (Aburezeq, 2012).

Abu Hamadah (2013) investigated the influence of using interactive boards on the acquisition of concepts and skills in using maps in geography among 9th grade students in Gaza. 63 students in Gaza were sampled. The researcher used: pre-test, post-test and SPSS software. She concluded that using such boards significantly and positively affects the acquisition of concepts and skills in using maps in geography. She recommends providing all classrooms in Gaza with such boards.

Bani Domi and Al-Rawashdeh (2014) investigated the influence of teaching through using interactive boards on 10th grade students' achievement in physics in Jordan and attitudes towards such use. 114 students in Aqaba were sampled. A survey, pre-test and post-test were used. The researcher concluded that respondents have positive attitudes. Such use improves students' achievement in

physics. Gender affects the attitudes in this regard. Such impact is for the favour of females.

Frederick and Amechi (2014) carried out an investigation for the influence of using interactive boards on achievement in a course titled (computer studies) in Nigeria. They adopted an experimental methodology. 100 students in a Nigerian university were sampled. To have the experimental group taught, interactive boards were used. To have the control group taught, chalkboard was used. Pre-test and post-test were administered to students. 270 instructors were surveyed. The researchers concluded that using interactive boards positively affects the achievement in the targeted course. Based on the survey, the instructors have positive attitudes towards interactive boards. They suggested that those boards are effective for teaching students with visual impairments.

Alfahadi (2015) carried out an investigation for identifying how effective it is to use interactive boards in teaching English to EFL university students during their preparatory year at Tabuk University. 36 students in their preparatory year were sampled. The random sampling technique was employed. Pre-test and post-test were developed and administered. A survey was also used to explore the attitudes of students towards English language learning after the trial. The researcher concluded that interactive boards positively and significantly affect the achievement of EFL university students during their preparatory year at Tabuk University. That means that using such boards is effective in language courses. In addition, the use of such boards can significantly improve students' attitudes towards learning English language. It makes students motivated to learn English language and willing to spend more time on reading books in English. That is because such boards add interactive features to e-books.

Akcaay *et al.* (2015) investigated the attitudes of high school teachers in Turkey towards using interactive boards. They surveyed 260 teachers. They concluded that such use facilitates the teaching process. Such use provides teachers with more time to interact with students. It allows teachers to design academic material. It increases the concentration of teachers during teaching. It allows teachers to share academic material with other teachers. It offers students many educational resources. However, it requires experience and training courses. It negatively affects student's discipline in classroom. It enhances teachers' ability to use technologies.

Al-Yateem *et al.* (2015) investigated the influence of using interactive boards in chemistry on direct and delayed achievement of third secondary school students and attitudes towards such use in Saudi Arabia. 29 students were sampled. Pre-test, survey, and post-test were used. Through the tests, the researchers concluded that such use improves the direct and delayed achievement. Through the survey, they concluded that such increases interest in learning and opportunities to learn. It facilitates the process of doing assignments. Such use motivates student to acquire knowledge. It attracts the attention of students and reduces the anxiety associated with learning. It motivates students to exert more effort when learning. It improves the understanding of students for the material and ability to remember information. It makes learning fun and promotes positive perception for school.

Shams *et al.* (2016) investigated the perception of EFL Iranian school students towards using interactive boards. 60 students were surveyed, observed and interviewed. The researchers concluded that using such boards improves

language proficiency, attention, confidence, and motivation to learn. It promotes cooperation. It increases students' communication with each other. It raises the level of involvement of students in learning activities. It improves the students' learning methods and facilitates the retention of information.

Onder and Aydin (2016) carried out an investigation for the influence of using interactive boards on achievement in a biology course in Turkey. Fifty 10th grade students in Anatolian High School in Buca, Izmir were sampled. A quasi-experimental approach is adopted, and pre-test and post-test were developed and administered. The researchers carried out semi-structured interviews with several members of the experimental group. They concluded that using interactive boards positively affects the achievement of students in biology course.

Cakiroglu (2016) carried out an investigation for the attitudes of secondary school teachers towards interactive boards in teaching secondary school students. The sample consists of 142 teachers. It includes math, English, and science teachers. A questionnaire was used for collecting information. It was found that interactive boards can improve students' achievement. The use of such boards motivates students to learn. It enhances the student-teacher interaction. It improves students' understanding for information and promotes creativity among students. It enables students to review the previous information. It makes the learning process enjoyable. It makes the information in the lesson more organized.

Tunaboylu and Demir, (2017) carried out an investigation for the influence of using interactive boards on students' achievement in math in lower secondary school students. 58 seventh grade students were sampled and divided in an equal manner into two groups (control and experimental ones). The trial was conducted during the academic year (2015/2016). Analysis of covariance (ANCOVA) was conducted. Pre-test and post-test were used. The researchers concluded that using interactive boards positively and significantly affects the achievement of students in math. They concluded that such use improves problem solving skills and ability to solve equation.

Davidovitch and Yavich (2017) investigated the influence of using interactive boards on motivation and cognition in primary schools in Palestine. The sample consists of 130 5th and 6th grade students. It includes female and male students. Data was collected from students through a questionnaire. Interviews were conducted with teachers. It was found that using interactive boards improve students' motivation and cognition in primary schools in Palestine. Using such boards increases students' concentration and makes students more organized. It increases students' interest in learning.

Phoong *et al.* (2019) investigated the influence of smart classrooms on the achievement level of the undergraduates majoring in mathematics. The sample consists of 72 students. Pre-test and post-test were administered. The control group was taught in a conventional classroom. The experimental group was taught in a smart classroom. T-test was conducted. The researchers concluded that smart classrooms positively affect the achievement of the undergraduates majoring in mathematics.

Duwaik (2019) investigated the advantages of using interactive boards in the public schools in Hebron, Palestine. 156 female and male teachers were selected purposively and surveyed. The researcher concluded that using such boards simplifies the presented ideas. Such use

enables the teacher to present the ideas in a logical sequence. It saves the time and effort of teachers due to ability to present material downloaded from the internet without. It saves the time and effort of teachers because teachers don't have to write many things through chalk nor pass papers to each student to see the material. It can be used for illustrating natural phenomena. It improves teachers' ability to manage the lesson time, because they can employ electronic time management features and develop electronic plans and schedules (Duwaik, 2019).

Using such boards allow teachers to employ visual features that attracts students' attention. It offers interactive features that facilitate the movement of icons and increase students' interaction with the content. It facilitates the process of retaining information. It offers more opportunities for holding discussion. It offers the students opportunities to see the implementation of knowledge in reality. It enables teachers to meet the needs of students with disabilities including students with learning disabilities. It offers opportunities for individualized learning, because teachers can create an electronic material and design electronic activities for each student. Thus, it allows teachers to take the individual differences between students into consideration while learning. It offers opportunities for carrying out group-based learning activities. It allows students to avoid the boring routine. It motivates students to learn and engage in group-work due to the enjoyable activities it offers. It increases students' self-confidence because shy students shall feel motivated to engage in the enjoyable activities. It promotes positive perceptions for group work. It facilitates the process of preparing for the lesson. It serves as an easy instructional tool. It provides teachers with much knowledge within a short duration of time. It lets the teacher presents the material in a manner makes it interesting (Duwaik, 2019).

Al Kadem (2019) investigated the attitudes of the students who are non-native speakers of Arabic in Riyadh towards using interactive boards. Through the adopting of descriptive analytical approach, she used a questionnaire. 300 female and male students were sampled from the Arabic language teaching centres. The researcher concluded that such attitudes are positive. In addition, using such boards making students use creative thinking methods and enhances the quality of language education. It improves the learning methods used by students. It allows shy students to overcome their shyness to learn. It catches students' attention due to employing multimedia. It meets the learning needs of students, because it offers activities of various levels (Al Kadem, 2019).

It allows students to learn fast, because it clarifies information and presents it in an organized manner. It promotes awareness among students about the significance of learning, because it offers opportunities to see the practical implementation of knowledge in real life. It reduces the amount of burden enforced on students, because it allows them to save the academic material and access it when needed. It allows students to learn a great amount of information within a short duration. It makes students interested in exploration and investigation. It allows teachers to take the individual differences between students into consideration. It encourages students to share their knowledge with others. The respondents believe that training courses must be held to improve their ability in using such boards (Al Kadem, 2019).

Shayoob (2019) investigated the impact of using interactive boards in chemistry course on academic

achievement among secondary school students in Sudan. 60 students and 50 teachers were sampled. Data is collected from students and teachers through a survey. Pre-test and post-test were used for collecting data from students. Through the teacher-survey, the researcher concluded that using such boards improves students' IT skills. Such use enables teachers to take the individual differences between students into consideration. It improves the interaction between students and teachers. It lets the teachers keep up with the latest technologies and offers various types of references. It improves the teachers' abilities to plan for lessons. It improves students' researching skills and abilities and promotes innovation. It offers more opportunities for students to engage in the learning process. It enables the teachers to improve their performance and their teaching strategies. It encourages teachers to expand their information. It enables teachers to connect theoretical knowledge with the empirical knowledge. It enables teachers to use the most advanced assessment methods. It provides students with convenient learning environment. It encourages students to adopt a self-learning approach and improves their thinking abilities. It reduces the teachers' efforts in designing the material. It encourages students to express themselves and creates a digital culture (Shayoob, 2019). Through the student-survey, the researcher concluded that using such boards increases students' attention and concentration. Such use increases students' motivation to learn and lets students use modern learning methods. It improves students' ability to remember information. It improves students' abilities to deal with technological devices and presents information in an organized and interesting manner. It enables students to manage and utilize their time efficiently. It presents information in a logical sequence. It enables students to focus on the most important information. It allows students to adopt a self-learning approach. Through the test, the researcher concluded that the achievement improved in chemistry (Shayoob, 2019).

Bıçak (2019) investigated the perception of teachers in Turkey towards the use of interactive boards. He conducted interviews with ten teachers. He concluded that such use improves quality of education and facilitate the way of doing tasks for teachers. It allows teachers to keep up with the latest technologies. It facilitates the classroom control. It attracts the attention of students due to using animation and multimedia. It can be used in all courses. It reduces the workload of teachers. It positively influences the process, performance and engagement of students in the process of learning. It increases the students' interests in learning and motivation to acquire knowledge.

METHODOLOGY

Approach

Through adopting an experimental approach, the researcher collected data and met the goals of this study

Instrument

Pre-test and post-test were designed and used. Those tests aim at assessing the sampled students' learning outcome before and after the trail. In this context, the outcome refers to the academic achievement in the computer skills course. Both tests involve multiple choice questions and were administered in an electronic manner. Through the pre-test, students' computer literacy in general is measured. Through the post-test, the researcher measures how much information the students have learnt and understood after employing each instructional approach is measured. Each one of the tests includes 13 items. 13 is the

maximum score on each test is 13. 0 is the minimum score on each test

Validity

The initial version of each test was given to 2 faculty members whose speciality is computer science and work in Saudi Arabia. The researcher asked those instructors to assess each test in terms of how clear the items are, existence of language, ability to meet goals. Based on the opinions of those faculty members, the two tests provide the reader with results that are related to the goals and reliable. They are free from grammatical mistakes and clear. However, two questions in the post-test were replaced with other questions based on the opinions of the instructors.

Reliability

Both tests are reliable, because the Cronbach alpha coefficient value of each test is greater than 0.70 (Salehi & Farhang, 2019). The value of the pre-test, it is 0.817. As for the value of the post-test, it is 0.833.

Analysis of Data

SPSS program was used. In addition, descriptive statistical methods were used. They include means in addition to standard deviations). The independent t-test is conducted. It is an inferential statistical method.

Procedures:

- 1- 40 male students from 2 sections in a private secondary school in Cairo, Egypt were sampled. They are first secondary grade students. The researcher communicated with the teacher of those students for informing them about the concerned experiment. He changed the distribution of the students to the sections in order for each section to include 20 students. That was done in order for the experimental groups to be similar in terms of size. Regarding the control group, it consists of one section that includes (20 students). As for the experimental group, it consists of one section that includes (20 students).
- 2- 4 lessons were selected from the curriculum to be covered throughout 4 periods during the concerned experiment. A pre-test and a post-test were developed in collaboration with several teachers. Those tests aim at assessing the students' achievement. The pre-test aims at ensuring that the

two groups share similar computer literacy levels. Sharing similar achievement levels on the pre-test shall provide the readers of this study with results that are accurate, valid and reliable. The post-test aims to explore the influence of the instructional approaches on the achievement of students in the targeted course

- 3- The initial version of each test was passed via email to a two experts to assess their validity. Changes were made based on the experts' views.
- 4- The pre-test was administered to the two sections in an electronic manner.
- 5- After that, the scores of the students on the pre-test got processed through SPSS software. The researcher made sure that students have similar computer literacy levels.
- 6- To teach the control group, interactive boards weren't used. To teach the experimental group, interactive boards were used. During the trial, 4 lessons were covered throughout 4 periods. The selected lessons were illustrated for the two groups during the concerned experiment. The titles of those lessons are identified below:
 - a) Operating system and internet
 - b) Writing the project code
 - c) Creating and processing audio files
 - d) Creating and processing video files
- 7- Those lessons were chosen from a curriculum titled (*The Computer and Information Technology for the First Secondary Grade*)
- 8- After covering the lessons through the two methods of teaching, the researcher administered the post-test to the two groups in an electronic manner. Then, the post-test scores were analysed. Recommendations and findings were drafted.

RESULT AND DISCUSSION

First hypothesis

H0.1: No significant difference exists- at the significance level of $p = 0.05$ - between the two groups in terms of their means on the pre-test

Table 1: The results reached through analysing the scores on the pre-test through the independent t-test

Test	Group	M	SD	T value	Sig.
pre-test	Control	5.05	1.637	1.915	0.063
	Experimental	5.15	1.316		

Based on table (1), the control group show a mean of 5.05 on the pre-test. Regarding the experimental group, it shows a mean of 5.15 on this test. The t-value is 1.915 and the significance value is 0.063. Based on those values, the 1st hypothesis is accepted. It means that the members of the two groups share similar computer literacy level. It means that the Egyptian Ministry of Education is keen on

improving students' computer skills and IT knowledge. It means that teachers in private schools exert much to improve students' computer literacy

Second hypothesis

H0.2: No significant difference exists- at the significance level of $p = 0.05$ - between the two groups in terms of their means on the post-test

Table 2: The results reached through analysing the scores on the post-test through the independent t-test

Test	Group	M	SD	T value	Sig.
post-test	Control	6.06	1.231	9.121	0.00
	Experimental	10.00	1.239		

Based on table (2), the control group show a mean of 6.06. The experimental group shows a mean of 10.00 on the

post-test. The t-value is 9.121 and the significance value is 0.00. Based on those values, the 2nd hypothesis is not

accepted. Thus, a significant difference exists between the control and experimental groups in terms of their means on the post. The group that the difference is for its favour is the experimental one. This result means that using interactive boards shall improve achievement in the targeted course. It is in agreement with the findings reached by Thompson & Flecknoe (2003).

CONCLUSION

The two groups in this study share similar computer literacy levels. Such similar levels mean that the Egyptian Ministry of Education is keen on improving the computer skills of students. It means that computer skills teachers at Egyptian schools exert much effort to improve students' computer skills. The researcher concluded that using interactive boards shall lead to improving the secondary school students' achievement in Egypt in the targeted course.

RECOMMENDATIONS

In the light of these results, the researcher recommends the following:

- 1) Providing training courses to schoolteachers in Egypt in the aim of improving their abilities to use interactive boards. Such courses must present information about the instructional strategies to be employed while using these boards.
- 2) Ensuring that all the lecture halls in Egyptian universities and classrooms in Egypt are provided with interactive board.
- 3) Using interactive boards in all the classrooms of Egyptian kindergartens.
- 4) Using interactive boards in teacher professional development courses in Egypt. It shall improve the outcomes of those courses and clarify the information presented for teachers in those courses.

SUGGESTION FOR RESEARCHERS

The researcher recommends:

- 1) Carrying out research about the impact of using interactive boards in science courses in Egyptian secondary schools.
- 2) Carrying out research about the perceptions of school students in Egypt towards using interactive boards
- 3) Carrying out research about the challenges and difficulties that are associated with using interactive boards in Egyptian public schools.

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