The Effect Of Virtual Reality In Developing Al-Azhar Secondary Stage Students' EFL Writing Skills

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Abstract

The current study was conducted to investigate the effect of Virtual Reality in developing Al-Azhar secondary stage students' EFL writing skills. The study adopted quasi-experimental design in terms of using an experimental group and another control one. The participants were 50 Al-Azhar secondary stage students' EFL writing skills. To achieve the aim of the study, the researchers designed an EFL writing skills pre/posttest to measure the students' performance in writing. It was administered to the participants before and after the implementation. The mean scores of the pre/post administrations of the test were statistically calculated. Findings of the study showed that; 1) there are statistically significant differences between the means of scores of control group and experimental group students in EFL writing skills in post test, and those differences in favor of experimental group students, 2) there are statistically significant differences between the means of scores of the experimental group students in EFL writing skills in both of pre and post test, and those differences in favor of post implementation. In the light of the findings, the researchers recommend the use of virtual reality for developing EFL writing skills.

Key words: virtual reality (VR), EFL writing skills, EFL students, Al-Azhar secondary stage.

Introduction

Language represents people thoughts and feelings. It is the most important way for expressing and receiving ideas, points of view, and culture. As a result, interaction occurs not just between people, but also across societies and countries. Language also aids the interchange of information, knowledge, emotions and thoughts, and the building of the community's own identity. However, it is determined to be vibrant dynamic phenomena (Putra, 2020). Moreover, writing is one skill of the language main skills. It is also an essential element of communication. It is considered as a tool for the creation of ideas and the consolidation of the linguistic system by using it for communicative objectives in an interactive way. Furthermore, students should develop their writing skills to enable them to communicate their message effectively and enhance their English language skills. Hence, virtual reality (VR) was used to develop students' EFL writing skills in this study.

Virtual Reality (VR)

Virtual reality represents computer interface technique that takes into account the tridimensional space. In this space, the user acts in a multi sensorial way, exploring aspects of this space through the viewing, hearing and tact. According to the available technology it's also possible to explore the smell and the taste. Body perceptions, like cold, heat and pressure, are included in the tact, through the skin (Kirner, 2012).

Few studies have already investigated the very benefits of VR in foreign or second language teaching and learning, being mostly restricted to theoretical ones (Peixoto et al., 2019). While, (Lin & Lan, 2015) stated that "foreign language teachers are now expected to employ VR technologies as a way to help their students, which changes the teacher's role from the person with all the answers to facilitators who support students in the virtual world path.

VR in EFL-educational environment

Virtual reality offers unique learning and teaching experiences due to its ability to provide real-time three-dimensional visualization and afford various types of interactivity within virtual learning environments. Hence, VR describes everything from 3D animation on a personal computer to simulating entire networks. In the EFL educational environment, VR helps EFL students to understand phenomena and situations that are difficult in understanding and explanation within the framework of traditional methods, to become part of the real world through simulation (Chwen et al., 2015). Additionally, (Dalgarno, 2004) said that there are a lot of characteristics of the EFL educational environment of VR as:

1. The environment is modeled using 3D vector geometry, so that objects are represented using x, y and z coordinates describing their shape and position in 3D space.
2. The EFL student's view of the environment is rendered dynamically according to their current position in 3D space, that is, the EFL student can move freely through the environment and their views are updated as they move.
3. At least some of the objects within the virtual environment respond to EFL student's action, for example, doors might open when approached and the voice of speaker may be listened when an object is selected.
4. Some environments include 3D audio, that is, audio that appears to be emitted from a source at a particular location within the environment.

The advantages of VR in EFL

Virtual reality applications in the education domain have many advantages as to; engage students, arouse students' curiosity, ease the communication of information, and motivate the students to improve their learning and performance" (Al Farsi et al., 2021). Also, competition in VR may be motivational as well, since challenges encourage students to surpass themselves (Berns et al., 2013).

According to (Lege & Bonner, 2020), VR offers some advantages for EFL learning environment as:

1- **Engagement**: VR in EFL education is consistently exciting and motivating for students.

2- **Spatial memory**: immersive VR places learners within a virtual space and allows them to move freely and interact within that space. This allows for not only locomotion, but the ability to see objects and scenes from multiple angles and perspectives.

3- **Empathy training**: VR offers the ability to place the user in the position of another person. The implications of VR are designed for the purpose of fostering empathy and promoting understanding.

4- **Distance learning**: VR also has the potential to extend learning opportunities to new places and demographics beyond face-to-face learning.

5- **Inaccessible environments**: VR technology allows students to supplant their current reality with a virtual environment that can be any location, real or imagined

VR and EFL skills

VR allows the enhancement of the linguistic skills; due to the variety of communicative tools they offer. In VR, students can find the necessary resources to enhance the oral (speaking and listening) and written (reading and writing) language competences, which are necessary to successfully interact in a foreign language (Sánchez, 2016).

Also, (Bower et al., 2017) asserts that the teacher of a foreign language can create real situational interaction with the help of VR, such as an interview at employment, the situation in a restaurant, at an airport, etc. Virtual space can vary depending on the objectives, language level, time frame, number of participants, real or animated characters, devices, etc. VR offers students flexible and convenient access that is a key driver for the use of technology in learning.

According to several researchers, output production is proven to be essential for foreign language learning since it is the way in which students can become aware of their weaknesses and overcome them as a consequence (Berns et al., 2013; Swain, 2015). In VR, students can produce written output through the use of tools such as text chat or boards. Therefore, VR provides learners with the opportunity to practice their writing skill in the target language. The communication in VR is synchronous which allows students to engage in real-time written conversations (Bell, 2008). That way, learners can communicate with others by writing with not only the purpose of conversing, but also to carry out collaborative learning tasks (Palomo et al., 2015).

In addition, some researchers conducted studies to explore the effectiveness of VR in teaching and learning English language skills, such as (Carrillo & Pérez, 2020) who aimed at exploring the possibilities that a virtual environment through a commercial video game presents for academic writing within the framework of university education. A mixed investigation was conducted through a single case study with a group of 28 undergraduate students; combined techniques of observation and information gathering (open questions, photographs within the virtual environment, field diary, system records), as well as measurement (Likert scale questionnaire) were used to account for the affinity and adaptability expressed by students in the realization of the collective writing exercise within Minecraft. The findings point towards the relevance of the use of adapted videogames as platforms for academic writing within the framework of university disciplinary

training. The researchers believed that, this study opens the possibility of thinking about extended uses of virtual environments for inter and intrainstitutional writing and publishing to develop academic literacy. Also, the results of the previous study were similar with the studies of (Bohórquez, 2015; Bikowski & Vithanage, 2016; Arteaga & Rodas, 2018; Al-Hamidi, 2019; Al Badi et al., 2020; & Abu Nar, 2021) which their results showed that the use of virtual reality is a good tool when learning and teaching EFL skills.

Thus, VR seems reasonable to affirm that most students are likely to be attracted to VR. This leads to the repetition of the exercises and activates which available in the VR and to develop curiosity for practicing foreign language skills. However, the repetition of such activities can help to build up confidence in regard to the command of the target language. Also, according to the features of practicing foreign language skills through VR, EFL students enjoy in practicing these skills through using three-dimensional spaces as educational tools and to be able to navigate within VR without difficulties.

Writing Skills

Writing is an important skill for EFL student. Through students can express their ideas, feelings and thoughts by writing. Almost every part of a student's learning is documented in writing, such as assignments, papers, and even final examinations. Writing, on the other hand, is an activity that spans the spectrum of uses that students undertake in their daily use of language, such as drafting lists, writing letters or messages to friends, filling forms, taking notes, and filling out academic applications. Writing exercises must be meticulously planned in order to be successful. However, it needs to be developed during learning EFL.

In writing, written signs or symbols are used to communicate. A written message may be printed or hand written. In written message can be transmitted via; letter, report, memo, reports, bulletins, job descriptions, employee manuals, and electronic mail. These types of writing used for internal communication. For communicating with

external environment in writing, electronic mail, Internet Web sites, letters, proposals, telegrams, faxes, postcards, contracts, advertisements, brochures, and news releases are used. Message, in writing, is influenced by the vocabulary and grammar used, writing style, precision and clarity of the language used (Wenbin, 2008).

Also, (Grabe & Kaplan, 2014) report that students in English as a foreign language need English writing skills ranging from a simple paragraph and summary skills to the ability to write essays and professional articles. Therefore, it is of main concern of this study to look into digital writing as an approach in EFL writing instruction to aid student teachers in producing better essays. (Maarof & Murat, 2013) add that successful writing depends much on the execution of strategies in the process of writing.

However, (Jumba et al., 2015) affirms that learning to write in a foreign language is not merely learning to put down on paper the conventional symbols of the writing system that represents the utterances one has in mind, but it is also purposeful section and organization of ideas, facts and experiences. In order words aims at compactness and precision in expression as well as grammatical, idiomatic and orthographic accuracy.

Writing definition

(Harmer, 2007) defines writing as an integral part of a larger activity where the focus is on something else such as language practice, acting out or speaking. According to (Akkaya & Kirmiz, 2010), writing is a powerful mode of communication through which students learn to express themselves more effectively. In addition, (Brown et al., 2003) states that writing is the nature of the composing process of writing. Written products are often the result of thinking, drafting and revising procedures that require specialized skills, skills that not every speaker develops naturally.

Also, (Harmer, 2004) defines writing as a process of discovery as well as a process of productivity. Writing can provide students with chance to work at their own pace, especially if it is done at home or without any limited time assigned

by teachers and allows them to think the task over before producing language (p.15). (Archibald, 2001) gives a definition of writing as a complex skill saying writing is a skill that needs knowledge and proficiency in many areas. It is a multidimensional skill. It is a complex skill that results from the interaction of the writer's knowledge, experience, skills, and the cognitive demands of the task (p. 153).

The importance of writing

The importance of writing for students is illustrated by (Grabe & Kaplan, 2014) who states that students in English as a foreign language need English writing skills ranging from a simple paragraph and summary skills to the ability to write essays and articles. Furthermore, (Graham & Harris, 2005) state that writing is critical to student success. It is the primary means by which students demonstrate their knowledge in school but even more important, it provides a flexible tool for gathering, remembering, and sharing subject-matter knowledge as well as an instrument for helping students explore, organize, and refine their ideas about a specific subject.

(Klimova, 2013) affirms that writing is important because it's used extensively in education. If students don't know how to express themselves in writing, they won't be able to communicate well with teachers, peers, or just about anyone else. Much of scholastic communication is done in writing; assignments, proposals, memos, reports, applications, preliminary interviews, e-mails, and more are part of the daily life of a student.

In addition, writing has a unique position in language teaching since its acquisition involves a practice and knowledge of other three language skills, such as listening, reading and speaking. Moreover, it requires mastering of other skills, such as metacognitive skills. EFL Learners need to set an objective for their writing, plan it carefully, think over its layout and logical structure, and revise it. In the process of writing they have to use cognitive skills; they have to analyze their sources and then synthesize them in a compact piece of writing (Janikova, 2006; Zajicova, 2011). Writing

can facilitate comprehension and reminiscing of the learning purpose (Graham et al., 2013). Also, (Nation & Newton, 2009) remark that written input can be a very authoritative factor to patronize speaking.

Writing processes

Writing involves such processes as generating ideas, discovering which to write, planning, goal-setting, monitoring and evaluating what is going to be written as well as what is written, and searching for language with which to express exact meaning (White & Arndt, 2001). However, (Capretz et al., 2003) assert writing process consists of a variety of stage; students pre-write, draft, revise, edit, publish and share.

In addition, (The University of Capella, 2021) reports that writing process consists of four steps to be followed by whoever want to write. The four steps writing process are:

1- Prewriting; in the first stage, the writer should consider the reader needs, determine his purpose of writing, and specify the field of what he shed lights upon, brainstorm his ideas regarding the intended topic.
2- Drafting; in the second stage, the writer should make a case and structure his evidence for that case,.
3- Revising; in the third stage, the writer should put himself in the reader's shoes, rethink about the coherence and the cohesion and make sure of them, reconsider his way of writing, and make the needed changes, which can enhance his work.
4- Publishing; in the last stage, the writer should edit and proofread to knock out the mistakes, to improve both coherence and cohesion, and to better the reliability of his work.

Whereas, (Hedge, 2005) admits that writing has a complex and recursive nature and the interaction between the different processes which may occur with each other. For this reason, (Brown, 2001) asserts that if the teaching of

writing is divided into separate stages to reflect the various moments involved in the process of writing then perhaps many of the obstacles experienced by both students and teachers could be addressed.

Types of writing

According to (Bolton et al., 2006; Deutsch, 2014; Jeffry, 2016), there are four main types of writing where each of these writing types is used for a specific purpose. A single text may include more than one writing style. These writing types are:

1. Expository, expository writer explains a concept, imparting information from himself to a wider audience.
2. Descriptive, this type of writing is often found in fiction, stories, and novels. The writer describes a picture in words of a person, place, or thing for their audience.
3. Persuasive, the writer here tries to convince the audience of a position or belief.
4. Narrative, the writer tries in this type to construct and communicate a story, complete with characters, conflict, and settings.

Also, (James, 2000) reports that writing is divided into two types; functional writing and creative writing. Functional writing connects readers to each other; to supply their needs. This kind of writing is not the subject of imagination, such as writing reports, official letters and e-mails. Creative writing is any form of writing which is written with the creativity of mind. Creative writing is written to entertain or educate someone, to spread awareness about something or someone, or to simply express one's ideas and opinions.

Writing sub-skills

Writing has sub-skills namely; micro and macro skills which should be taught for EFL students. The first aspect of writing skill is its micro and macro components. (Brown, 2001) mentions that micro and macro skills for written communication focus on both the form of language and the function of language. Firstly, the macro skills of writing cover several important aspects as writing

that topic sentence, main idea, supporting ideas, and summarizing. Meanwhile, the micro skills of writing cover some other aspects as producing an acceptable core of words, using appropriate word order patterns, using acceptable grammatical systems, and etc. To add Brown's ideas on the micro and macro skills of writing, it can be said that writing involves several sub-skills. These skills of writing must be introduced in every stage of writing composition. This enables the students to get used to writing more effectively by using and practicing those skills of writing.

Content of writing.

The content of writing is a skill of the writing skills which cover some aspects of global or general topic. It is a basic writing sub-skill often opposed to the competence of organization of writing. In other words, it is not a mechanical process in which the students focus on the spelling, grammar, or paragraph structures (Cumming, 2016). Accordingly, the content of writing skills includes some sub-skills as:

- Writing a topic sentence

There is a shift in focus from mere attention to the structural aspects of writing grammar rules and vocabulary items, mainly addressing intra-sentential relationships, to one attending to both structure and content, addressing inter-sentential as well as intra-sentential, relationships. The consequence of this shift, is an emerging attention, requiring sentences to be cohesive, and the whole text coherent (Mirzaii, 2012).

- Writing the main ideas

The main idea is a general statement about the paragraph. It is a sentence that provides the subject for discussion. It is usually supported by a list of details (Van der Steen et al. 2017). The students are required to write the main idea that shows what the whole paragraph is going to be about. Next, students write a supporting sentence for the main idea (Myers & David, 2007).

- Summarizing the ideas

(Hacker, 2008), explains that summarizing involves stating a work's thesis and main ideas simply, briefly, and accurately. (Moore et al., 2016) believe that when students summarize, they write the important ideas of the whole topic. Leave out small, unimportant details and examples. Then paraphrase of those ideas, means write those ideas in students' own words. Since the students write the important ideas in their own words, a summary is really a collection of paraphrases.

1. Organization of writing.

The writing organization skill enhances the central idea(s) and its development. When the order, structure and cohesion are strong, they enable the reader to move easily through the text (Tosuncuoğlu, 2018). Organization refers to relations based on theme, communicative purpose, and the cohesion of information. Organization, in simple words, refers to the sense relations among single textual units, i.e., propositions or sentences. It makes the texts semantically as well as logically consistent for readers (Irvin & Lennie, 2010). Accordingly, the content of writing skills includes some sub-skills as:

- Structuring a three component paragraph.

Most paragraphs of wring follow the basic structure of introduction, body, and conclusion. Understanding the basic structures of paragraphs is vital to becoming a successful student and influences the quality of writing (Champa & Sasikumar, 2010).

- Supporting ideas with reasons and examples.

There are major supporting details to directly support the topic sentence. Under each of the major supporting sentence, writers can write other minor supporting sentences which contain some evidences and examples. The number of evidences and examples depends on how enough the writer can elaborate the topic and convince the reader. There might be at least one example to support the ideas of the paragraphs (Wali & Madani, 2020)

- Accurate use of sentence structures, word choice, and grammar.

The accurate use of sentence structures, word choice, and grammar aims to develop the writing and reading skills. The sentence structure is considered as a basic teaching unit, and its accurate production is emphasized. (Harmer, 2004). However, (Dougherty & Bravo, 2010) believe that writing is viewed as a matter of transcribing language into written symbols. Moreover, EFL students focus on correct grammar, correct usage and correct word choices rather than the composition process itself. Consequently, they turn into only judges of texts and limit their intervention to the end of the writing process, where such intervention is likely to do much for the paragraphs.

- Accurate use of spelling, capitalization, punctuation, and handwriting

(Warda, 2005) states that spelling affects the written performance of students. It is expected that with little spelling the confidence and writing skills are less clearly than entrusted spellers. (Al-Jarf, 2010; Bowen, 2011). (Kane, 2000) mentions that punctuation, capitalization, spellings are sometimes called mechanics of writing. Punctuation shows where ideas begin and end, capitalization clarifies the beginning statements, questions, names, places, and things that are one of a kind, and using orthography correctly, all these mechanics make the writing easy to read. Moreover, handwriting, and in particular the automaticity of letter production, appears to facilitate higher order composing processes by freeing up working memory to deal with the complex tasks of planning, organizing, revising and regulating the production of text. (Connelly et al, 2006; Jones, 2004; Peverley, 2006).

Context of the Problem:

Students of English in a foreign language environment have difficulty in writing skills according to (Ghabool & Kashef, 2012), writing is always difficult task for individuals especially for students who learn English as a foreign language. (Choo & Li, 2017) state that producing a piece of writing is undoubtedly a daunting task for most students. Considering the complexity of writing, English language practitioners play an important

role in guiding students to produce good English essays. (Musgrove, 2006) believes that students do not like writing due to these reasons: they do not care because they do not see the importance of writing in their life. They view it as homework and a boring task and sometimes they just practice lifting or copying of ideas from the sample essays and hand in to their teacher. They write essays for purpose of examination and they do not realize that it can help them in their future advancement.

Furthermore, (Abdullah, 2009) mentions that EFL students do not see their errors especially grammatical errors. They think they complete their writing task once they do their concluding paragraph. The first draft is always their final work. They do not revise and edit their essays as they perceive that their teachers correct the errors for them. (Alanazi, 2013) states that writing is a difficult task, if not impossible. Egyptian students believe that a writing task requires a great effort and that only a few are able to write well. They can write five informal pages, but cannot write five formal lines. Because they think that formal writing needs a lot of time, thinking and planning, using difficult strategies, and personal skills. However, many studies found weakness in Egyptian students' EFL writing skills at the secondary sages (e.g., Abo Ahmed, 2019; EL-sherbeny, 2019).

Also, during the researcher's work as a teacher of English language at Tema AL-Azhar Secondary Institute for Boys, he noticed that most of the students have some difficulties in expressing what they want to write it simply when he asked them to write simple paragraphs. They couldn't write either a simple coherent sentence or a paragraph. To make sure that the students have low EFL writing skills, the researcher conducted a pilot study, in February 2020, to fifty students at the first year of secondary stage at Tema AL-Azhar Secondary Institute for Boys. The researcher asked the students to write a paragraph on "why English is important". The researcher chose this sample of this school because he worked as EFL teacher in this school and one of his colleague works as an EFL teacher there, who helps the researcher in the implementation of this

study. However, the researcher chose the first year secondary stage institute because they should had to gain EFL writing skills in a higher level than their previous preparatory stage, so these students were very keen on the participation in the study program.

The results of the pilot study revealed that the scores of approximately 56% of the students ranged between 30% - 40%, while the scores of approximately 44% of the students ranged between 50% - 70%. Also, from analyzing students' written texts, it was clear that most students' writing were incoherent. They didn't write proper topic sentences, supporting details and concluding sentences. Otherwise, they didn't use linking words to write coherent sentences.

Study Problem:

The problem of the study lies in the students' low EFL writing skills at AL-Azhar Secondary stage Institutes. Hence, this study applies virtual reality to develop the students' necessary skills of writing.

Questions of the Study:

To tackle this problem, the present study attempted to find answers to the following main question:

What is the effect of virtual reality in developing Al-Azhar secondary stage students' EFL writing skills?

To answer the main question the following sub-questions were also answered:

1- What are EFL writing skills appropriate to Al-Azhar secondary stage students?

2- To what extent is virtual reality effect in developing Al-Azhar secondary stage students' EFL writing skills?

3- What is the effect size of virtual reality in developing Al-Azhar secondary stage students' EFL writing skills?

Hypothesis of Study:

1- There are statistically significant differences between the means of scores of control group and experimental group students in writing skills in post test, and those differences in favor of experimental group students.

2- There are statistically significant differences between the means of scores of the experimental group students in writing skills in both of pre and post test, and those differences in favor of post implementation.

Variables of the Study:

Independent variable: this refers to the treatment implemented with the participants in this study (the effect of virtual reality)

Dependent variable: this refers to the developing of Al-Azhar secondary stage students' EFL writing skills.

The Purpose of the Study:

The purpose of the study is to examine the effect of virtual reality in developing Al-Azhar secondary stage students' EFL writing skills at Tema AL-Azhar Secondary Institute for Boys.

Significance of the Study:

The current study is useful for the following:

1- **Students**: Improving secondary stage students' EFL writing skills and encouraging them to be more positive and active in the learning process.

2- **Teachers**: This study enables teachers to employ virtual reality in developing Al-Azhar secondary stage students' EFL writing skills.

3- **Curriculum designers**: This study enables curriculum designers to modify, and enrich English language curriculum based virtual reality in developing EFL writing skills.

Tools and of the study:

The present study used the following tools:

1. A checklist of writing skills.
2. A test writing skills.
3. Scoring rubrics for writing responses.

Limitations of the Study:

The present study is limited to the following:

1. EFL writing skills (content, organization) in the prescribed school text book "New Hello! English for Secondary Schools – Year 1 – Term 2".
2. The second term of the scholastic year 2021/2022.
3. A sample of 50 students of Al-Azhar secondary stage at the first year of Tema AL-Azhar Secondary Institute for Boys in Suhaj Governorate, Egypt.

The Writing Skills Checklist:

The checklist aimed at identifying the required EFL writing skills for Al-Azhar secondary stage students. Validity of this checklist was used to determine the required EFL writing skills for 50 of EFL Al-Azhar secondary stage students. It includes 7 skills.

The checklist was submitted to a panel of jury members who indicated that the checklist was valid. Content of the checklist: Having reviewed the related literature on developing students' EFL writing skills and the required EFL writing skills in the prescribed school text book "New Hello! English for Secondary Schools – Year 1 – Term 2", the researchers designed an EFL writing skills' checklist and submitted it to specialized jury members of English Language Teaching (ELT) to determine the degree of importance of each skill on the checklist. The list consisted of 7 skills divided into two main skills: 1) Content of writing which includes 3 skills; writing a topic sentence, writing the main ideas, and summarizing the ideas. 2) Organization of writing which includes 4 sub-skills; structuring a three component paragraph, supporting ideas with reasons and examples, accurate use of sentence structures, word choice, and grammar, and accurate use of spelling, capitalization, punctuation, and handwriting. The jury members stated that the skills in the checklist would be generally adequate and appropriate to its purpose, after deleting skills which was considered above the secondary stage EFL students' level. However, the checklist became valid, after it was modified according to the jury members' suggestions to contain (7) skills only. Thus, the first sub-question of the study about the appropriate EFL skills for Al-Azhar secondary stage students was answered.

The Writing Skills Test:

The EFL writing skills test was developed by the researchers and submitted it to specialized jury members of English Language Teaching (ELT) to determine the degree of importance of each question on the test. The jury members stated that the questions in the test would be generally adequate and appropriate to its purpose. After deleting and modifying questions which were considered above the secondary stage EFL students' level. However, the test became valid. The test has two parts; the first question was developed to measure the content of writing skills. While, the second question was developed to measure the organization of writing skills.

Results and Discussion:

Examination of the Hypothesis No. 1.

In order to examine the hypothesis 1; there are statistically significant differences between the means of scores of control group and experimental group students in writing skills in post test, and those differences in favor of experimental group students. The Independent-Samples T is computed between the means of scores of control group and experimental group students in an EFL writing skills in post test, The procedure is executed by SPSS program, and H-EESCprogram for calculating the effectiveness and effect size. Results are presented as following:

Table (1) Results of T-Test of scores of control group and experimental group students in EFL writing skills in post test

Main Skills	Sub Skills	Group	N	Mean	Std. Deviation	T-Value	Result	Eta Squared (η^2)	
								Value	Effect Size
Content of writing	Writing a topic sentence.	Control	25	1.80	0.58	8.11	Significant at the 0.01	0.58	Huge
		Experimental	25	2.88	0.33				
	Writing the main ideas.	Control	25	2.08	0.64	6.02	Significant at the 0.02	0.43	Huge
		Experimental	25	2.92	0.28				
	Summarizing the ideas.	Control	25	2.04	0.61	4.81	Significant at the 0.03	0.33	Very Large
		Experimental	25	2.80	0.50				
Organization of writing	Structuring a three component paragraph.	Control	25	1.92	0.57	6.26	Significant at the 0.04	0.45	Huge
		Experimental	25	2.80	0.41				
	Supporting ideas with reasons and examples.	Control	25	1.92	0.57	5.08	Significant at the 0.05	0.35	Very Large
		Experimental	25	2.72	0.54				
	Accurate use of sentence structures, word choice, and grammar.	Control	25	1.96	0.61	6.62	Significant at the 0.06	0.48	Huge
		Experimental	25	2.88	0.33				
	Accurate use of spelling, capitalization, punctuation, and handwriting.	Control	25	2.00	0.58	7.18	Significant at the 0.07	0.52	Huge
		Experimental	25	2.92	0.28				
Total EFL writing skills		Control	25	13.72	1.57	15.27	Significant at the 0.08	0.83	Huge
		Experimental	25	19.92	1.29				

Figure (1) Comparison between the means of scores of control group and experimental group students in EFL writing skills in post test

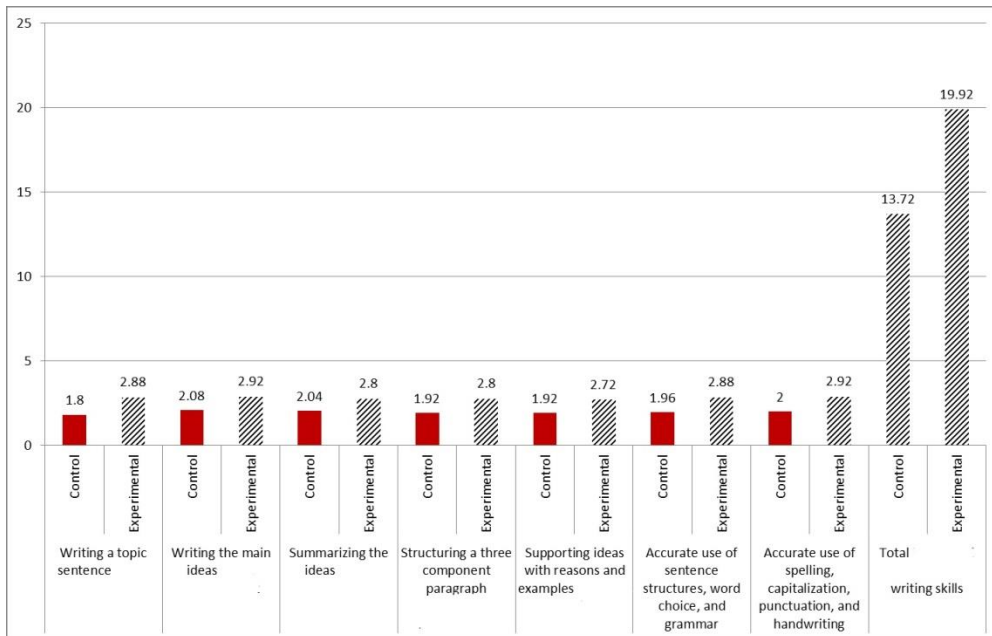Table (2) Reference table of Effect Size by Cohen's (d) and Eta Squared

Coefficient	Effect Size					
	Trivial	Small	Medium	Large	Very Large	Huge
d	Less Than 0.20	0.20 - 0.49	0.50 - 0.79	0.80 - 1.09	1.10 - 1.49	1.50 Or More
(η^2)	Less Than 0.010	0.010 - 0.058	0.059 - 0.137	0.138 - 0.231	0.232 - 0.359	0.360 Or More

As shown in previous table (1) and figure (1), there are statistically significant differences at the 0.01 level (2-tailed), and that indicates to there are real differences between the experimental group students and control group students in EFL writing skills test. However, all effect size values are in the range (very large and huge), so the hypothesis is accepted.

It means that, there are statistically significant differences between the means of scores of control group and experimental group students in EFL writing skills in post test, and those differences in favor of experimental group students.
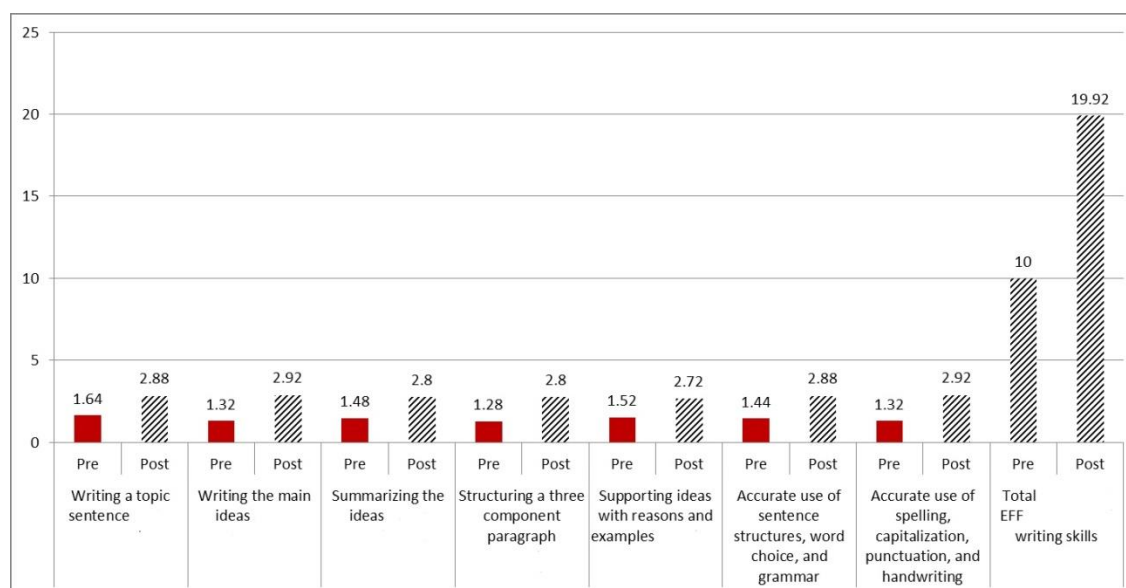
Examination of the Hypothesis No. 2:

In order to examine the hypothesis 2; there are statistically significant differences between the means of scores of the experimental group students in writing skills in both of pre and post test, and those differences in favor of post implementation. The Paired-Samples T Test is computed between the means of scores of the experimental group students in EFL writing skills in both of pre and post test. The procedure is executed by SPSS program and H-EESC program for calculating the effectiveness and effect size. Results are presented as following:

Table (2) Results of T-Test of scores of the experimental group students in EFL writing skills in both of pre and post test (N=25)

Main Skills	Sub Skills	Test	Mean	Std. Deviation	T- Test		Cohen's d		Eta Squared (η^2)	
					Value	Result	Value	Effect Size	Value	Effect Size
Content of writing	Writing a topic sentence	Pre	1.64	0.70	7.96	Significant at the 0.01	2.24	Huge	0.73	Huge
		Post	2.88	0.33						
	Writing the main ideas	Pre	1.32	0.56	13.86	Significant at the 0.02	3.56	Huge	0.89	Huge
		Post	2.92	0.28						
	Summarizing the ideas	Pre	1.48	0.65	8.82	Significant at the 0.03	2.26	Huge	0.76	Huge
		Post	2.80	0.50						
Organization of writing	Structuring a three component paragraph.	Pre	1.28	0.46	12.97	Significant at the 0.04	3.50	Huge	0.88	Huge
		Post	2.80	0.41						
	Supporting ideas with reasons and examples.	Pre	1.52	0.59	9.30	Significant at the 0.05	2.13	Huge	0.78	Huge
		Post	2.72	0.54						
	Accurate use of sentence structures, word choice, and grammar.	Pre	1.44	0.51	11.07	Significant at the 0.06	2.85	Huge	0.84	Huge
		Post	2.88	0.33						
	Accurate use of spelling, capitalization, punctuation, and handwriting.	Pre	1.32	0.48	13.86	Significant at the 0.07	3.69	Huge	0.89	Huge
		Post	2.92	0.28						
Total EFL writing skills		Pre	10.00	1.50	24.32	Significant at the 0.08	6.65	Huge	0.96	Huge
		Post	19.92	1.29						

Figure (2) Comparison between the means of scores of the experimental group students in EFL writing skills in both of pre and post test

As shown in previous table (2) and figure (2), there are statistically significant differences at the 0.01 level (2-tailed), and that indicates to there are real differences between the experimental group students in EFL writing skills before and after teaching by virtual reality, and all effect size values are huge, so the hypothesis is accepted .

It means that, there are statistically significant differences between the means of scores of the experimental group students in EFL writing skills in both of pre and post test, and those differences in favor of post implementation.

Discussion and Interpretation of the Study Findings:

Displaying the results of the study, the researchers presented an account of the development of the experimental group students' EFL writing skills due to the use of virtual reality. This is shown in the difference between the post administrations of the EFL writing skills test mean scores of the experimental and control group students. Also, this is shown in the difference between the pre, and post administrations of the EFL writing skills test mean scores of the experimental group students. The difference between the experimental and control group students' mean scores in the post administrations of the test was statistically significant. Furthermore, the difference between

the experimental group students' mean scores in the pre and post administrations of the test was statistically significant. The statistically significant of these two results might be due to the following factors:

1. The implementation of skills; writing the main ideas, summarizing the ideas, structuring a three component paragraph, supporting ideas with reasons and examples, accurate use of sentence structures, word choice, and grammar, and accurate use of spelling, capitalization, punctuation, and handwriting.
2. The use of virtual reality provided an opportunity for cooperative learning, it upgraded students' use of language and involved them in collaborative reconstruction of written texts. They became more engaged in showing their competence to the members of the team and were responsible for the achievement of the group.
3. The collaborative nature of role work allowed the students to scaffold what they did not know, into what they collectively learnt with their peers. Additionally, writing skills throughout the program gave students an opportunity to interact with each other's to examine the program,

discuss the topic, work out the meaning, and discuss the words, in a meaningful and purposeful way.

4. Using the program provides with longer significant writing time that student-centered classroom than in a traditional teacher-centered classroom.

5. Furthermore, the use of self-assessment and peer assessment helped the students greatly to confront their own strengths and weaknesses in their English language use.

6. In a small group discussion, students learnt to share opinions and contribute by performing the roles that they were responsible for.

7. Students had an active learning role as they started to read independently to know more about the program that they study.

8. Arguments among students to note for the coming discussion.

9. The findings of the current study provide interesting conclusions and recommendations for EFL classroom teachers and researchers who are interested in the implementation of program in EFL writing instruction.

Recommendations of the study:

The results of the current study offer several recommendations for classroom teachers and researchers who are eager to improve their instruction, as follows:

- EFL teachers should be trained on using virtual reality in teaching EFL writing skills.
- EFL student should use virtual reality in their learning process.
- Curriculum designers must take into their account the importance of embedding virtual reality in the syllables of different stages.

Suggestions for further Research:

Within the limitations of the present study as well as the findings that are achieved, the following areas are suggested for further research:

1. Using virtual reality to develop students' language skills competence.
2. Using virtual reality to develop creative written communication skills for EFL students.
3. Developing other language skills among Al-Azhar secondary stage students, faculty of Basic Education through using virtual reality.

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