

**The Effectiveness of a Program Based on Post-Constructivist  
Theory Using Web Applications to Develop English  
Language Proficiency among Al- Quds Open University  
Students**

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## فاعلية برنامج قائم على نظرية ما بعد البنائية باستخدام تطبيقات الويب لتطوير كفاءة اللغة الإنجليزية لدى طلاب جامعة القدس المفتوحة

### المستخلص:

هدفت الدراسة إلى فاعلية برنامج قائم على نظرية ما بعد البنائية باستخدام تطبيقات الويب لتطوير كفاءة اللغة الإنجليزية لدى طلاب جامعة القدس المفتوحة. تبدأ الدراسة بمراجعة الأدبيات والدراسات المرتبطة بنظرية ما بعد البنائية، تطبيقات الويب بالإضافة إلى كفاءة اللغة الإنجليزية المناسبة لطلاب المرحلة الجامعية. من ناحية أخرى، صممت الباحثة اختبار تواصل شفهي، مقياس متدرج لتقييم مهارات التواصل الشفهي والبرنامج المقترح. ثم قامت الباحثة بترشيح مجموعة عشوائية من طلاب اللغة الإنجليزية بجامعة القدس المفتوحة للمشاركة في الدراسة والانخراط في أنشطتها. تم تقديم المشاركين للاختبار القبلي والبعدي. ثم تم تحليل النتائج من الناحيتين الكمية والكيفية. في النهاية أظهرت النتائج أن البرنامج كان فعالاً للغاية لتطوير كفاءة اللغة الإنجليزية لدى طلاب جامعة القدس المفتوحة.

**الكلمات المفتاحية:** نظرية ما بعد البنائية، تطبيقات الويب، كفاءات اللغة الإنجليزية.

## **The Effectiveness of a Program Based on Post-Constructivist Theory Using Web Applications to Develop English Language Proficiency among Al-Quds Open University Students**

### **Abstract**

The purpose of this study was to assess the effectiveness of a program based on post constructivist theory using web applications to develop English language proficiency among Al-Quds Open University Students in Palestine. In order to achieve the aim of the study the researcher adopted experimental research design. The sample of this study consists of (60) English –major students from Al-Quds Open University. The participants students were assigned randomly to a control and experimental group (30 and 30 students respectively).

Data collection tools included: a critical reading and an academic writing test, a questionnaire, and interviews . The results of the study showed that there is a significant difference in the mean scores of the post-test between the control group and experimental group in favor of experimental group.

The results also indicated that students in the experimental group improved their critical reading and academic writing due to the use of web applications WizIQ and increased their positive attitude towards learning through web applications. In addition, the findings showed that students in the experimental group were more engaged and motivated to learn compared to their counterparts in the control group.

**Keywords:** Post- Constructivist; Web Applications (WizIQ); English Language Proficiency; Critical Reading; Academic Writing.

## Introduction

Teaching and learning English in the traditional classrooms where students learn inside the classroom with traditional methods is boring for a lot of learners, so the researcher is trying to find something exciting and more interesting for the learners to learn English well. Web applications in teaching are the order of the day. Thus more and more educators are expressing interest in bringing the best of it inside the classrooms. Hoping that better outcomes will be achieved, the researcher thinks that one of the most important and useful in technology and web applications is the WizIQ program.

English language proficiency is very important in teaching and learning English. Because of the importance of critical reading and academic writing in teaching and learning English well, they should be improved by using web applications WizIQ and that not just inside the university, but also outside in which students are able to acquire and learn information via the WizIQ easily. A lot of previous studies indicate that the importance of web applications WizIQ in teaching and learning English, Ahmed & Osman (2020), indicated that WizIQ can improve not only the student's academic achievement, but also promote their motivation.

Therefore, there must be a recent research study that explores the impact of computer-based and Internet-based web applications WizIQ to help learners acquire knowledge, and e-learning is a term used to describe online education and training based on web applications. Teaching students to read and academically write to develop their skills early in their education is essential because writing proficiency takes considerable time to develop. In order to help students develop academic writing skills web applications can be used to effectively facilitate the academic teaching process and critical reading.

Critical reading is an essential daily life skill needed to develop our thoughts and abilities to understand nearly every aspect of human life. It is a dynamic global skill that requires proficiency development among non-English-speaking countries to be able to communicate, transform human activities, values, meaningful ideas, and knowledge in support of global education. The huge amount of information is accessible through the internet in digital form. Now readers can read any information without any cost and without going anywhere. So, technology changes the reading practice and reading behavior of people.

According to Guthrie, Benneth & McGough (2007) "Reading is the act of getting meaning from printed or written words, which is the basis for learning and one of the most important skills in everyday life". The development of students' critical reading skills is an important and urgent issue facing institutions of higher education today. The goal of the present study is to investigate the effectiveness of using a web applications- based program in developing critical reading and academic writing among university students. The researcher focuses on web applications WizIQ that she believes the students should engage in, and how to actually use them in the classroom.

Critical reading requires a deep and active engagement with the text. It has been defined as "an approach where the reader uses higher-order cognitive skills such as the ability to analyze, synthesize, solve problems, and thinks meta-cognitively in order to negotiate meanings to construct new meanings from the text" (Hermida, 2009, p. 21). While most people agree that critical reading is essential for students to succeed in college, it is not easy to pinpoint what exactly people mean by critical reading, as the term can be considered a "catchall" term. "Critical reading could mean everything from knowing the definitions of the words to understanding the

structure to understanding how the sentences are put together.

In every discipline, writing helps us learn to think critically about our own ideas and the ideas of others. Academic writing is closely linked to reading- so we are rarely asked to write about something without first being expected to read some appropriate texts. In academic writing, learners always draw on the work of others , so it is essential to learn to read critically and draw relevant material from other texts.

### **Context of the problem**

Developing adequate English as a Foreign Language (EFL) academic writing skills is of paramount importance for students' success in university education in Palestine. Arab learners of English need to improve their writing proficient levels to meet the academic requirements of those universities. Palestinian EFL learners often encounter difficulties in organizing and planning for their writing when they start learning English. In addition, they may have negative attitudes towards writing because of the challenges they encounter with this specific skill.

Academic writing, which refers to the ability to write texts for academic and professional purposes, is key to the success of students in school, in university courses, on tests that they take to academically progress and transfer to the next part or phase. Academic writing has not been a focus in many adult education programs, and teachers receive limited professional development and instructional support in implementing it (Peyton& Schaetzel, 2016).

Writing is not an easy thing to do. Writing activity involves a number of things to be mastered, including lexical and grammatical knowledge, which can be very complex, coherence, cohesion, and mechanics. Writers need to also have to think about ideas as well as the logical organization of ideas. Academic writing refers to all writing which is created for the purpose

of study (Chin et al. 2012). All university students will be especially evaluated based on their writing, so writing skills are

essential for students' academic success. Chan (2013) strengthens this idea, saying that when we write argumentative essays, our goal is to persuade others to adopt our view. We do that not by twisting the audience's arms, absolutely, but by putting forward convincing evidence, sensible reasoning, and effective rebuttals. There are many students who do not like academic writing, because they think that it is very difficult.

Huwari and Al-Kasawneh (2013) confirmed that EFL learners have many problems with writing English because they often do not have enough practice. Their background and previous knowledge impacts how they are able to learn. Moreover, Gul (2016) reviewed several studies and showed that constructivist ways of teaching English are better when compared to the traditional approach. For instance, he mentioned that Al Muhaimed (2013) found that using a constructivist technique helped students in schools in Saudi Arabia increase reading comprehension more than that of the traditional teaching method of the English language.

In addition, that constructivist practice was a better way for English language teaching when compared to the traditional teaching method of the English language and stated that Nikitina (2010) also found noticeable evidence that when the students were allowed to do constructivist activities such as using visuals and preparing a video project with teamwork, they learned a foreign language better.

Knowledge evolves through the process of social negotiation and evaluation of the viability of individual understanding. Social constructivism teaches that all knowledge develops as a result of social interaction and language use, and is therefore a shared, rather than an individual, experience. Knowledge is additionally not a result of observing the world; it results from many social processes and interactions. We

therefore find that constructivist learning attaches as much meaning to the process of learning as it does to the acquisition of new knowledge.

### **Pilot Study**

To confirm the need to conduct an in- depth research regarding the poor performance of students while academic writing and critical reading at the university level, the researcher conducted a pilot study of a sample of (23) students during the first semester of 2020 at Al-Quds Open university. Academic writing and critical reading exam was distributed for the purpose of collecting information about the problems students face when they write and read in English.

The pilot study was implemented on a sample of 23 students who are English majors at Al-Quds Open university. After performing a diagnostic test for academic writing and critical reading skills on the study sample that was randomly selected for students, the results of the exam reflect their lack of academic writing skills, analysis and critical thinking, using context clues, making connections to prior knowledge and understanding the text while reading. The result of the exam showed several reasons for the weakness of academic writing among English – major students at Al –Quds Open University. The primary cause of weakness in academic writing and critical reading is lack of practice and ineffective teaching methods. The students confirmed that they do not practice the writing and reading skills sufficiently either inside or outside of the classroom.

The low-test result obtained by the students after applying for the test showed weakness of university students in writing skills and weakness in the ability to connect words , form ideas , mistakes in grammar and arrangement of paragraphs. And revealed students' weakness in the skill of reading by analyzing the obtained results to diagnose students' ability to read. Based on the previous results of the pilot study, there should be studies



on how to develop academic writing and critical reading skills among university students majoring in the English language. So, there is a need to pursue the issue with further investigation and conduct a study to advance

the teaching writing and reading strategies using e-learning applications to develop critical reading and academic writing. The researcher opted for E-Learning programs based on web applications (WizIQ) and the internet to help learners progress and develop academic writing and reading skills. to employ the three thinking levels of reading (literal, interpretive , and critical) among learners at AL-Quds Open University Palestine.

### **Statement of the problem**

Palestinian university students have poor reading performance and academic writing which hinders them from becoming active readers and having academic writing correctly. This weakness hinders their academic progress and development of their skills. Hence, this study will be carried out to adapt existing program WizIQ to developing English language proficiency among Al-Quds Open University students in Palestine.

### **Study Questions**

In order to tackle this problem, the study attempted to answer the following questions:

### **What is the Effectiveness of a Program Based on Post-Constructivist Theory Using Web Applications to Develop English Language Proficiency among Al- Quds Open University Students?**

For achieving the purpose of the study, the researcher addressed the following sub- questions:

- 1- What are the necessary skills that can be used to develop English language proficiency among Al-Quds Open University students?
- 2- What are the characteristics of the proposed program in developing

English language proficiency among Al-Quds Open University students?

- 3- What are the appropriate applications that can be used to develop English language proficiency among Al-Quds Open University students?
- 4- What is the effectiveness of a program based on post-constructivist theory for developing English language proficiency among AlQuds Open University students?
- 5- The degree of satisfaction of the participating students with the web-based program to develop English language proficiency?

### **Aim of the Study**

This current study might be of significance to a community of learners and practitioners of the English language, which includes students, teachers and researchers.

### **For students**

- Improving students' performance in the skills of critical reading and academic writing through a web application- based WizIQ program and awareness of their importance.

### **For teachers**

- Increasing Al-Quds Open University teachers' awareness of the importance of using modern technology, means to teach English as a foreign language.

### **For researchers**

- Encouraging new researchers to conduct more studies on the modern strategies to develop English language skills.

## Study Hypothesis

The following hypotheses were tested statistically to address the research questions

1. There is a statistically significant difference at ( $\alpha < 0.05$ ) level of student's mean scores in critical reading between the experimental group on pre-test and post- test.
2. There is a statistically significant difference at ( $\alpha < 0.05$ ) level of student's mean scores in academic writing between the experimental group on pre-test and post- test.
3. There is a statistically significant difference at ( $\alpha < 0.05$ ) level between the student's mean scores of the control group and experimental group on the posttest in the critical reading achievements.
4. There is a statistically significant difference at ( $\alpha < 0.05$ ) level between the students' mean scores of the control group and experimental group on the post-test in the academic writing achievements.

## Delimitations of the Study

The study was delimited to:

1. An experimental and control group consisting of students at AlQuds Open University, Palestine.
2. English language proficiency ( academic writing and critical reading).
3. The study is limited to adopting a program based on web applications such as WizIQ program.
4. The study population of Al-Quds Open University students identified the English language major.

## Review of literature and related studies Definitions of Post-Constructivism.

Constructivism is "an approach to learning that holds that people actively construct or make their own knowledge and that reality is

determined by the experiences of the learner" (Elliott et al., 2000, p. 256). In constructivism, learning is a mental process and people learn from previously built knowledge by building on that knowledge in collaborative environments. Constructivism places the vast majority

of the learning process on learners while constructionism puts much of the work's focus on teachers and instruction. In constructivism, learners are provided with minimal instruction and are required to figure out the essential information to be acquired. (Alanazi, 2019).

In elaborating constructivists' ideas, Arends (1998) states that constructivism believes in personal construction of meaning by the learner through experience, and that meaning is influenced by the interaction of prior knowledge and new events. Latour argues that for "the critical mind to become relevant again", social scientist researchers need a new realist attitude (Latour 2004). This requires a renewed empiricism for our studies. Although the researcher would rather not generalize such a statement for the entire field of sociology as Latour does, the researcher supports the call to move beyond the social construction – realism dichotomy when we study, for example, controversies in environmental governance.

"Post-constructivism" might be a confusing concept, partly because this is yet another "post-something" (post-structuralism, post-modernism, etc), and partly because – in my view – it should not necessarily be seen as a reaction or response to social constructivism. It is something different, and it is applied to issues that are inherently different from traditional sociological research objects.

### **Importance of Post- Constructivist Theory:**

Constructivism holds important lessons for how to interpret the results of learning and for how to design environments to support learning. According to the constructivist views of learning, as individuals bring different background knowledge, experience, and interests to the learning

situation, they make unique connections in building their knowledge.

Constructivism is a meta-theoretical label that has been used in a wide variety of disciplines including philosophy, sociology, art, mathematics, and architecture, having different meanings in each of these disciplines. Since constructivism can be considered as a label that is given to a variety of research approaches and philosophies about reality and truth, it is unhelpful to start out with an all-embracing definition of the concept. What unites “constructivist” scholars, though, is that they have moved away from trying to explain an objective reality.

### **The Second Domain: Web Applications Definitions of Web Application:**

A web application (or web app) is application software that runs on a web server, unlike computer-based software programs that are run locally on the operating system of the device. Web applications are accessed by the user through a web browser with an active network connection. These applications are programmed using a client–server modeled structure—the user ("client") is provided services through an off-site server that is hosted by a third-party. Examples of commonly used web applications include webmail, online retail sales, online banking, and online auctions. A web application or "web app" is a software program that runs on a web server. Unlike traditional desktop applications, which are launched by your operating system, web apps must be accessed through a web browser. Web apps have several advantages over desktop applications.

Since they run inside web browsers, developers do not need to develop web apps for multiple platforms. From a user standpoint, a web app may provide a more consistent user interface across multiple platforms because the appearance is dependent on the browser rather than the operating system. Additionally, the data you enter into a web app is processed and saved

remotely. This allows access to the same data from multiple devices, rather than transferring files between computer systems.

### **Importance of Web Applications:**

The technology context synthesizes the experience of the participating students and the course instructor when engaging in the web application that supports the learning environment. The instructor felt that the majority of the participants could accept the use of the web applications in the class since the web applications have been widely used by them daily. Moreover, a significant benefit of the web applications is that all of the web applications can support each other; therefore, users can easily apply each web application to support different activities based on their requirements.

Furthermore, the instructor indicated that the use of the web applications in the class is very convenient to him because she could easily check the students' documents and projects anytime and anywhere through the Internet and various devices. In addition, she also observed that several students could use Google documents to edit their reflection notes after-school. This implies that the web applications were convenient and useful, and so most students actively used them, which motivated them to reflect on their learning after participating in the course.

### **Advantages of Using Web Application**

The most significant examples of web applications are Microsoft Office Live, Google Reader, Google Apps, etc. It is developed by a Web application framework that is written in a certain programming language that facilitates programming the main issues of the web application. Instead of writing the main scripts of the application of classes, etc., these frameworks save the time spent in programming these issues because they

are ready. Each programming language has a design framework for web applications (Elshaby, 2013).

### **The Third Domain: English Language Proficiency (Critical reading and Academic writing).**

#### **Critical reading**

Critical reading is an interactive process that involves different level of thought that act together concurrently such as analyzing information into constituent parts, synthesizing the relevant components in a coherent manner; evaluating ideas, attitudes, purposes by making judgments in regard to standards that are established by the reader to detect its rationality.

"Critical reading" refers to the reading that entails: (1) Acquisition of correct and clear understanding of the texts meaning; (2) Accurate perception of the expressed and implied relationships of the read text; (3) Careful evaluation of the content in terms of validity, accuracy, and usefulness according to the reader's intention. In a similar manner, Dale (1967, p. 23) proposed that critical reading is "reading beyond the lines" as a high level of thinking that includes interpreting intentions and viewpoints and differs from the two low levels of comprehension "reading the lines" (literal comprehension) and "reading between the lines" (inferential comprehension).

#### **Academic Writing**

Academic writing is any writing given to fulfill a requirement in an academic setting, such as a college or university. It is also used for publications that are read by teachers and researchers or presented at conferences. Additionally, it is a kind of writing which has its own set of rules and practices. These rules and practices may be organized around a formal order or structure in which to present ideas, which should be supported by author citations in the literature. It is the style of writing

the writer is expected to use for academic work which is likely to be different from other styles one uses every day. Academic writing (AW) is the type of writing that is used to write dissertations, articles, essays, research papers according to the academic requirement.“

It is obvious that the previous studies were divided into three domains. The first domain, studies related to web application. The researcher assured that web applications can play a vital and important role in the learning and teaching process. The second one, studies related to critical reading skill. The researcher concluded that implementing critical reading in the English language and other subjects has positive results on students' achievement and their motivation towards the teaching and learning process and towards the language.

### **Research Design**

The researcher adopted the experimental approach in which two groups assigned as the participants of the current study from Al-Quds Open University students major in English language: the experimental group, and the control one.

The researcher of the current study applied the WizIQ program to find out the effect of WizIQ on development critical reading and academic writing on the experimental group, this group was pre-tested, then it had taught them via WizIQ through the online live classes and make use of various tools such as : whiteboard, online PowerPoint, word presentation, PDF, audio and video conferencing, and text chatting which prepared by the researcher. The posttest was attempted for the group and the results were calculated.

### **Participants**

The study population consists of Al- Quds Open University students, majoring in the English language in Palestine year 2022-2023.



### **Instruments of the Study Achievement Test :**

An achievement test was designed and prepared by the researcher, to measure the learners' achievement in English language proficiency (critical reading and academic writing) by adopting the post-constructivism social theory, which was applied before implementing the experiment as a pre-test and it was applied after implementing the experiment as a post-test.

### **The Interview:**

Secondly, in-depth, semi-structured, face-to-face interviews with five of lecturers and professors who teach English language at Al- Quds Open University about the benefits of using technology in teaching were employed. All the interviews incorporated open-ended questions that enabled the researcher to probe for more information at various intervals and to seek clarification.

The interview questions were formulated by the researcher according to the objectives of the study. Such questions were prepared in advance and studied before the actual interviews took place.

### **The Questionnaire:**

The questionnaire for students consisted of (30) items which included both open-ended and closed questions. Closed questions mainly employed a five-point Likert scale. The first section of each questionnaire constituted demographic questions to gather information regarding students' gender and level of study. The questionnaire had content validity because it consisted of questions that were relevant to the subject under study, and they were guided by the research questions of the study and the literature review.

## **Results**

### **Testing the First Hypothesis**

**The Result of the First Hypothesis** The first hypothesis stated: "There is a statistically significant difference at ( $\alpha \leq 0.05$ ) level of student's mean

score in critical reading between the experimental group on pre-test and post-test” To test this hypothesis, the mean and standard deviation scores of the experimental group of the pre-post critical reading skills test were calculated, and Paired Sample T-Test was used to test the hypothesis in Table (1).

Table 1: Differences between the Pre-test and Post-test in the critical reading skills of the experimental group

	Application	N	Mean	Std. Deviation	t. value	.Sig Value
Identifying the main and supporting idea	Pre-test	30	9.33	2.62	4.782	0.000
	Post- test	30	12.08	1.75	-	
Identifying cause and effect relationships	Pre-test	30	5.08	2.41	7.540	0.000
	Post- test	30	8.83	1.27	-	
Distinguish between facts and opinions	Pre-test	30	7.75	2.31	8.530	0.000
	Post- test	30	12.42	1.91	-	
Making inferences	Pre-test	30	4.58	2.94	7.264	0.000
	Post- test	30	8.92	1.42	-	
Total scores of critical reading skills	Pre-test	30	26.75	6.89	-	0.000
					10.909	

According to the result in Table (1), the p-value (0.000) for the differences between the mean critical reading skills scores of the students in the pre-test and post-test of the experimental group is less than the significant level ( $\alpha=0.05$ ), so there is a significant difference between the student's scores in pre-test and post-test of the experimental group, which consequently indicates that applying for the web applications (WizIQ) program on the post-constructivist theory enhancing the critical reading skills for the experimental group in favor of the post-test.

### The Result of the Second Hypothesis

The second hypothesis stated: “There is a statistically significant difference at ( $\alpha \leq 0.05$ ) level of student's mean score in Academic writing

between the experimental group on pre-test and post-test”.

To test this hypothesis, the mean and standard deviation scores of the experimental group of the pre-post academic writing skills test were calculated, and Paired Sample T-Test was used to test the hypothesis in Table (2).

Table 2: Differences between the Pre-test and Post-test in the academic writing skills of the experimental group.

	Application	N	Mean	Std. Deviation	t. value	.Sig Value
Topic development	Pre-test	30	2.30	0.95	-	0.000
	Post-test	30	6.57	0.63	20.505	
Organization	Pre-test	30	2.37	0.61	-	0.000
	Post-test	30	6.63	0.81	23.002	
Vocabulary	Pre-test	30	2.10	0.31	-	0.000
	Post-test	30	5.73	0.78	23.631	
Discourse control	Pre-test	30	2.03	0.18	-	0.000
	Post-test	30	6.13	0.78	28.167	
Sentence structure	Pre-test	30	2.27	0.64	-	0.000
	Post-test	30	5.20	0.71	16.755	
Mechanics	Pre-test	30	2.27	0.64	-	0.000
	Post-test	30	4.27	0.45	14.009	
Total scores of academic writing skills	Pre-test	30	13.33	2.06	-	0.000
					31.905	

According to the result in Table (4.2), the p-value (0.000) for the differences between the mean academic writing kills scores of the students in the pre-test and post-test of the experimental group is less than the significant level ( $\alpha=0.05$ ), so there is a significant difference between the student's scores in pre-test and post-test of the experimental group, which consequently indicates that applying for the web applications (WizIQ) program on the post-constructivist theory enhancing the academic writing skills for the experimental group in favor of the posttest.

### The Result of the Third Hypothesis

The third hypothesis stated: “There is a statistically significant

difference at ( $\alpha \leq 0.05$ ) level between the students mean scores of the control group and experimental group on the post-test in the critical reading achievements” To test this hypothesis, the mean and standard deviation scores of pre and post-test on critical reading skills were calculated in Table (3).

Table 3: Means and standard deviation for the pre and posttests in the critical reading skills between experimental and control groups.

	Group	N	Pre-test		Post-test	
			Mean	Std. Deviation	Mean	Std. Deviation
	Experimental	30	9.33	2.62	12.08	1.75
Identifying the main and supporting idea	Control	30	9.08	3.31	10.25	2.31
Identifying cause and effect relationships	Experimental	30	5.08	2.41	8.83	1.27
	Control	30	5.33	2.34	6.75	2.38
Distinguish between facts and opinions	Experimental	30	7.75	2.31	12.42	1.91
	Control	30	7.67	3.14	9.83	3.07
Making inferences	Experimental	30	4.58	2.94	8.92	1.42
	Control	30	4.50	2.12	6.42	2.43
Total scores of critical reading skills	Experimental	30	26.75	6.89	42.25	3.62
	Control	30	26.58	8.52	33.25	7.55

According to the result in Table (4.3), it is clear that there are considerable clear differences between the mean score of the students of the study sample as to their achievement in critical reading skills by using web applications (WizIQ) program on the post-constructivist theory, according to the pre and post-test.

### **The Result of the Fourth Hypothesis**

The Fourth hypothesis stated: “There is a statistically significant difference at ( $\alpha \leq 0.05$ ) level between the students mean scores of the control group and experimental group on the post-test in the academic writing achievements” To test this hypothesis, the mean and standard

deviation scores of pre and post-test on academic writing skills were calculated in Table (4).

Table 4: Means and standard deviation for the pre and posttests in the academic writing skills between experimental and control groups.

Critical reading skills	Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	2
	Pre-test	35.749	1	35.749	9.836	0.003	0.147
Identifying the main and supporting idea	Group	46.784	1	46.784	12.872	0.001	0.184
	Error	207.168	57	3.635			
	Corrected total	293.333	59				
Identifying cause and effect relationships	Pre-test	50.911	1	50.911	18.122	0.000	0.241
	Group	71.205	1	71.205	25.346	0.000	0.308
	Error	160.13	57	2.809			
	Corrected total	276.146	59				
Distinguish between facts and opinions	Pre-test	70.6	1	70.6	12.998	0.001	0.186
	Group	97.514	1	97.514	17.953	0.000	0.24
	Error	309.608	57	5.432			
	Corrected total	480.313	59				
Making inferences	Pre-test	55.336	1	55.336	18.102	0	0.241
	Group	91.358	1	91.358	29.885	0	0.344
	Error	174.247	57	3.057			
	Corrected total	323.333	59				
Total scores of critical reading skills	Pre-test	419.498	1	419.498	14.836	0	0.207
	Group	1199.289	1	1199.289	42.413	0	0.427
	Error	1611.752	57	28.276			
	Corrected total	3246.25	59				

Table (4) shows that the F value is (63,812) for the differences between the mean academic writing skills scores of students in the two groups, and the

p-value (0.000) is less than the significant level ( $\alpha=0.05$ ), so there is a significant difference between students score in the two groups.

### **Discussion of Findings:**

The experiment was designed to determine if the students would develop their English language proficiency and increase their motivation for English as a result of the use of the web application WizIQ program. All students of the experimental group showed an increase in their performance on English language proficiency (critical reading and academic writing) achievement posttest. This means that the students who studied by WizIQ where tables show statically significant at (0.05) between the average score of the pretest and posttest in English language proficiency.

Therefore, the WizIQ program has a significant effect on improving students' English language proficiency. This is what (Falode, & Alhassan,2019) approved of their study. Furthermore, the experimental group also showed that the learners' motivation increased after the implementation of the web application WizIQ program. (Abdelrahman , & Mohamed , 2020). Such positive change was very clear through students' responses to the motivation scale. This means that using the WizIQ program in developing the learners' critical reading and academic writing and their motivation for English was very effective.

### **Conclusions**

Based on the current study findings, the following conclusions were derived:

1. WizIQ is more effective and has superiority over the traditional method in teaching English language in general and English language proficiency in particular.
2. WizIQ provided students with a better learning environment, which affected their academic writing achievement and critical reading performance in English.

3. WizIQ tools allowed students to easily work in groups and learn from each other.
4. The simplicity of WizIQ as an e-learning tool contributed to enhancing student academic writing performance and critical reading.

### **Recommendations**

#### **to the Ministry of Education:**

The Ministry of Education is recommended: It was therefore recommended based on the findings findings that WizIQ application should be made as one of the major teaching strategies for educational technology courses in the universities since findings of this study ascertained that they are very effective

1. To conduct workshops and training programs on web applications such as WizIQ aimed at introducing lecturers to web applications and using them in teaching all English language skills and areas (e.g. vocabulary, reading, writing structure, listening. phonology and functions).
2. To develop new applications on the web such as WizIQ and Microsoft Teams to suit different courses.

#### **Recommendations to English Language Lecturers**

English language lecturers are recommended

1. To keep in touch with the latest trends in the field of TEFL and benefit from the findings of the educational research.
2. To select effective methods and techniques which activate students' motivation, participation and the degree of competition and challenge among students.

#### **Recommendations for Further Studies:**

The researcher suggested the following recommendations for further studies:

1. The effectiveness of using web applications WizIQ program on other university subjects.
2. Investigating the effectiveness of web applications (WizIQ) on students' attitude towards English language.
3. Investigating the effectiveness of using WizIQ program on all English language skills (Listening, Reading, Writing and Speaking).
4. The efficiency of universities in implementing technologies that are related to web applications WizIQ program.

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