

**MOBILE ASSISTED LANGUAGE LEARNING FOR
DEVELOPING CRITICAL READING SKILLS OF EFL
UNIVERSITY STUDENTS**

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ABSTRACT

The current study has investigated the effect of a mobile-assisted language learning (MALL) program on EFL students' critical reading skills. The study followed a quasi-experimental one-group design. The study participants were 40 third-year EFL majors at the Faculty of Education, Suez University during the second semester of 2017/2018. A pre/posttest was prepared by the researcher to measure participants' critical reading skills. At the beginning of the experiment, the participants were pretested. After the administration of the experiment for three months, the participants were post-tested. A paired samples t-test revealed that a statistically significant difference existed between the mean score of the pretest and that of the posttest ($t=14.807$, $p<0.05$) in favor of the posttest. This result indicated that the treatment program had a good impact on developing EFL critical reading skills of the study participants. It was concluded that mobile learning had a significant effect on third-year EFL majors' critical reading skills. The study, therefore, recommends mobile learning to be incorporated in EFL college reading courses.

KEYWORDS – Mobile-assisted language learning (MALL), critical reading skills, higher education.

تعلم اللغة باستخدام الهاتف النقال لتنمية مهارات القراءة الناقد لدى طلاب اللغة
الإنجليزية كلغة أجنبية
الملخص العربي

بحثت هذه الدراسة تأثير برنامج قائم على تعلم اللغة باستخدام الهاتف النقال على مهارات القراءة الناقد لدى طلاب الفرقة الثالثة قسم اللغة الإنجليزية. أجريت الدراسة على ٤٠ طالب من طلاب الفرقة الثالثة بكلية التربية قسم اللغة الإنجليزية خلال الفصل الدراسي الثاني من عام ٢٠١٧/٢٠١٨. ومن أجل تحديد أهم مهارات القراءة الناقد لطلاب اللغة الإنجليزية، تم توزيع استبيان على مجموعة من المحكمين من أعضاء هيئة تدريس اللغة الإنجليزية ومن ثم اختيار ست من مهارات القراءة الناقد، ثم قامت الباحثة بإعداد اختبار قبلي لقياس تلك المهارات. تم تطبيق الاختبار على مجموعة الدراسة ثم بدأت التجربة والتي استمرت حوالي ثلاثة أشهر، وبعد انتهاء التجربة تم إجراء الاختبار البعدي على الطلاب. وبتحليل نتائج الاختبار القبلي والبعدي باستخدام اختبار (ت) لعينتين مترابطتين Paired Sample T-Test تبين وجود فروق إحصائية ذات دلالة بين متوسط نتائج الاختبار القبلي والبعدي لمهارات القراءة النقدية لصالح الاختبار البعدي. وقد أظهرت نتائج الدراسة أن البرنامج كان له تأثير إيجابي على تطوير مهارات القراءة الناقد لدى الطلاب المشاركين في التجربة، وبذلك تم التوصل واستنتاج أن التعلم باستخدام الهاتف النقال كان له تأثير كبير وهام على تطوير مهارات القراءة الناقد لدى طلاب الفرقة الثالثة شعبة اللغة الإنجليزية. وفي ضوء هذه النتائج، أوصت الباحثة بضرورة تفعيل دور مثل هذه الأجهزة الذكية والمتطورة في العملية التعليمية في كافة المراحل والمقررات وتشجيع المعلمين والمتعلمين وتدريبهم عليها.

1 INTRODUCTION

1.1 Background of the Study

With the change of time and technology in the 21st century, the teaching and learning practices are also changed. New portable electronic devices take place of old text books (Singh-Bhullar, 2014). Mobile phones as a new addition to information and communication technologies have created new ways to help learners in the process of foreign language learning, especially English language learning (Alemi, Reza, & Anani, 2012). Mobile assisted language learning (MALL) is one approach that encompasses that opportunity with the multifunctional applications that students can access through their smartphones. The concept of mobile entertains the fact of knowledge availability “anywhere and anytime” (Geddes, 2004, p. 214), which suggests that the future will witness multiple changes in the educational system in general, specifically in its mobile format (Mekhzoumi, Hilmi, & Krishnasamy, 2018). There is, however, a gloomy side to this information revolution and knowledge availability with one touch and a free open access to means of knowledge production. With the emergence of social media as the primary source of information in the 21st century, this gives a chance to amateurs to misuse and sometimes abuse these means. People become more vulnerable to believing fake news. Aside from the problem it poses in public as misleading readers, false news has also been a concern in education, affecting the quality of academic outputs that are written by students (Castro, 2019). In such a data-saturated world, the fine line between information and misinformation is getting alarmingly blurry (Kharbach, 2018). In this respect, in order to use knowledge effectively and productively, students should not only understand and interpret it correctly but also question its validity, efficiency and necessity and this is where critical reading skills comes into the picture.

The function and quality of reading activity nowadays become a critical issue which necessitate the acquisition and development of critical reading skills. This urges teachers and educators to raise their students’ critical awareness to this informational dilemma. The need for preparing students with critical powers to cope with, direct, and even lead this change is remarkably increasing. It is important to ensure that they are equipped with the required skills, as Duncan (2006) calls them “essential survival skills for the new millennium”, to help the students to navigate and browse the web in a safe and productive way. Students should be able to identify the author’s ideas, compare them with others on the same

topic, criticize and evaluate the content they find online (Karabay, Kusdemir & Isik, 2015).

Surveying the literature of recent studies tackling the problem of critical reading skills for Egyptian students showed that many of them suffer from weaknesses in critical reading in the primary stage (e.g., Abdel Mageed, 2017; Al-Sayed, 2010; Bedeer, 2017), preparatory stage (Badawy, 2018; El-Mistikawy, 2016), secondary stage (Abu Zeid, 2017; Bahagat, 2015; El-Maleh, 2006), as well as at the college level (Ahmed, 2012; Barakat, 2018; Ellozy & Mostafa, 2010; El-Sakka, 2011; Gharib, 2012; Makhyoun, 2008). As a demonstrator in the curriculum and instruction department at Faculty of Education, Suez University, the researcher noticed that while reading, EFL students focus mostly on the first two levels in Bloom's Taxonomy of thinking processes. That is knowledge/remembering and comprehension/understanding. They were able to create and respond to questions on these levels more effectively than on the higher-order thinking ones; application, analysis, synthesis/creation, and evaluation.

1.2 PROBLEM STATEMENT

Based on the researcher's experience, a pilot study administered on 20 third-year EFL students at Faculty of Education, Suez University. The test consisted of 20 questions to measure some common critical reading skills (see Table 1 & Table 2) and the findings of the previous studies, the problem of this study was stated as there were some weaknesses in the critical reading skills of third year EFL students at Faculty of Education, Suez University. Therefore, a mobile-assisted language-learning program was proposed as a means of developing critical reading skills for those students.

Table 1: Mean Scores of Critical Reading Skills Pilot Test

Skills	Allotted Mark	Mean	Percentage
Identifying the Purpose	3	.95	31.7%
Evaluating Relevance	3	1.20	40%
Anticipating Intended Meanings	3	1.20	40%
Differentiating Facts & Opinions	4	2.60	65%
Drawing Inference	4	2.3	57.5%
Making Judgments	3	.70	23.3%
Total	20	8.95	44.75%

Table 2: Total Scores of Critical Reading Skills Pilot Test

Total	N	Mean	Median	Skewness	Kurtosis	Minimum	Maximum
	20	8.95	9	0.30	-0.317	6	13

1.3 QUESTIONS OF THE STUDY

The present study attempted to find out answers to the following main question:

"What is the effect of a mobile assisted language learning program on the critical reading skills of EFL students?", and to the following sub-questions:

1. What are the critical reading skills necessary for EFL students?
2. What are the components of a mobile assisted language-learning program for improving the critical reading skills of EFL major students?
3. What is the impact of the devised program on the critical reading skills of EFL major students?

1.4 HYPOTHESIS OF THE STUDY

To investigate the above questions of this study the following hypothesis was formulated:

There would be no statistically significant difference in the participants' mean scores between the pretest and the posttest of critical reading skills.

1.5 AIMS OF THE STUDY

This study aimed to:

1. identify the critical reading skills that EFL students need to improve,
2. identify some of the mobile applications most suitable for the development of the critical reading skills of EFL students,
3. design a mobile assisted language-learning program to develop the critical reading skills of EFL major students, and
4. study the effect of the program on the development of the critical reading skills of third-year EFL students at Faculty of Education, Suez University.

2 LITERATURE REVIEW

2.1 MOBILE ASSISTED LANGUAGE LEARNING

Without a doubt, technology plays a significant role in setting learning free from the constraints of time and place. Under the umbrellas of mobile learning and language learning, MALL has appeared as a field of

study since the 80s (Trinder, 2005) which involves that opportunity. MALL finds its promising, new spot on the surface of emerging trends in education (Al-Zahrani, 2015). O'Malley et al. (2005, p. 6) define MALL as “any sort of learning that happens when the learner is not in a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies.” In their study in 2013, Rodríguez-Arancón, Arús, and Calle define MALL as a teaching and learning methodology that uses mobile phones or other handheld devices with some form of wireless connectivity, such as phones, PDAs and tablets, among others. Valarmathi (2011) states that the term MALL is a subset of both mobile learning (M-Learning) and computer assisted language learning (CALL). MALL involves using a mobile device for the purpose of enhancing language skills in reading, writing, speaking and/or listening. It wins an advantage over CALL since it extends into daily activities. Accordingly, it provides applicable solutions to progressively move from traditional face-to-face learning lessons to mobile learning ones using hand-held devices (Al-Zahrani, 2015).

2.1.1 HISTORY OF MALL

All through the history of educational technology, there have been trends tackling size and capabilities of innovative technologies that support teaching in the classroom (Al-Zahrani, 2015). The invention of smart phones, mobile phones, iPods, tablet PCs, hand-held computer based devices, PDAs, and MP3 players gave rise to Mobile-Assisted Language Learning (AbuSa'aleek, 2014). Reviewing the history of MALL, a research by Twarog and Pereszlényi-Pintér in the 80s marks the emergence of MALL which looked at telephone assisted language study. They used telephones to provide distant language learners with assistance and feedback (Twarog & Preszlenyi Pinter, 1988). In the mid-1990s, one of the first published trends addressing MALL was a Canadian report by Callan (1994) which investigated the effect of word processing features with PDAs, compared to handwritten texts, to improve the English writing skills (Burston, 2013).

Apparently, over the past two decades from the beginning of the new millennium to the recent time, a publication of large amount of research remarkably existed which examined various mobile devices used in environments both inside and outside of formal language learning. There have been trials of MALL applications and the uses of multimedia on PDAs and iPods since 2001 (e.g., Belanger, 2005; Garcia Cabrere, 2002;

Kukulska-Hulme, 2005). What could be observed from these trials is that the focus has mostly been on delivering basic features such as vocabulary learning and quiz drills in text format over mobile phones. Additionally, there was also an effort by Kiernan and Aizawa (2004) to look at the use of mobile devices on task based learning. They believed that task based learning is the best way to enhance the acquisition of language.

Moreover, Thornton and Houser (2005) conducted several pioneering projects involving the use of mobile devices particularly mobile phones which one of them focused on the teaching of the English language, specifically on vocabulary acquisition. Their findings are similar to those found by Levy and Kennedy (2005) who studied their Italian learners. They sent vocabulary words and idioms, definitions and example sentences via SMS. Another study that studies vocabulary learning was conducted by Chen and Chung (2008).

Other than that, there were also several attempts to use specific functions of mobile devices in language teaching and learning settings. Rivers (2009), for example, required Japanese learners of English to scan Quick Response (QR) codes that were posted around the university in order to accomplish some information exchange tasks. QR codes are graphics scanned by mobile devices that automatically link to online information. In another study, Sandberg, Maris and de Geus (2011) provided young Dutch learners with mobile phones equipped with GPS capabilities in order to help them learn English vocabulary. Gromik (2012) required Japanese learners to use the video recording function of their mobile phones to produce short English monologues.

In December 2011 in Paris at the United Nations Educational, Scientific and Cultural Organization (UNESCO) headquarters, a number of experts from all over the world participated in a meeting to discuss the prevalence of MALL. This expert meeting was a cornerstone, indicating that m-learning is no longer a buzz word, but a concrete opportunity to reach the UNESCO goal of Education for All. (Ferreira, Klein, Freitas, & Schlemmer, 2015).

Thus, such small devices as mobile ones are capable of doing as much as, and sometimes more than, larger desktop machines. These features have paved the way for the development of mobile language learning tools, approaches and integration in education starting from recent history to the unlimited opportunities that could take place in the future (Al-Zahrani, 2015).

2.1.2 ADVANTAGES OF MALL

As Al-Zahrani (2015) states, the ever-growing and quickly changing pace of technology imposes the need for integrating new innovative technologies into education such as mobile learning technologies. In both K-12 and higher education domains, future generations, recently known by Prensky (2001) as digital natives, are more likely to own and be closely attached to mobile technologies more than ever. On the same trend, the UNESCO, in their guidelines in 2013, outlines a set of unique benefits of mobile learning that can be leveraged to advance progress towards Education for All. These benefits are: 1) expanding the reach and equity of education, 2) facilitating personalized learning, 3) providing immediate feedback and assessment, 4) enabling anytime, anywhere learning, 5) ensuring the productive use of time spent in classrooms, 6) building new communities of learners, 7) supporting situated learning, 8) enhancing seamless learning, 9) bridging formal and informal learning, 10) minimizing educational disruption in conflict and disaster areas, 11) assisting learners with disabilities, and 12) improving communication and administration. While mobile technology is not and never will be an educational solution for all challenges and difficulties, it is a powerful and often overlooked tool that can facilitate and support education in general and language learning in particular with many potentials that weren't possible earlier.

2.2 CRITICAL READING

Reading in general and critical reading in particular are considered among the most significant language skills (El-Maleh, 2006). As Abdel Halim (2011) indicates, our world is getting more complicated to understand, therefore helping students how to process information has become more critical than definite facts. The recent situation of web pages written in dozens of languages and instant messaging across the planet between people of various ethnic and cultural backgrounds impels higher education institutions to develop critical reading to stimulate global-level thinking (Abdel Halim, 2011) and to cope with the increase of knowledge and information which requires a critical reader not a naïve one (Alqatanani, 2017).

Wide-ranging definitions have been given to critical reading. Kurland (2002) defines critical reading as " a technique for discovering information and ideas within a text" (p. 1). McDonald (2004) considers critical reading as an alternative way of reading that goes beyond typical

approaches of reading. Collins (2018) assumes that critical reading implies making judgments about how a text is argued. Similarly, Wray and Wallace (2011) believe that critical reading is rarely about questioning the facts, it is about how the text works, how it is argued and how it reaches its conclusions (Collins, 2018). Arıcı (2012) defines critical reading as ideal reading. He claims that critical reading is being in a communicational interaction with the text and the ability to comment and evaluate the text. An individual's ability to keep what he has read in his mind for a long time can only be possible with critical reading (Akın, Koray, & Tavukçu, 2015). In their study on critical reading, Khodary and AbdAllah (2014) define it as a technique for evaluating what is read.

As for critical readers, as asserted by Rivers (2001) and Wolters, Pintrich and Karabenick (2005), critical readers have been identified as having the ability to easily switch with the most suitable reading skills, even mainly difficult ones, as demanded by the situation (Albeckay, 2014). According to Aşılıoğlu (2008), a reader who is not critical cannot exceed the level of perception in cognitive processes whereas a critical reader can acquire competencies at levels of analysis, synthesis and evaluation (Akın, Koray, & Tavukçu, 2015). Rog (2012) defines critical readers as those who read beyond what the author states to how and why the author states it, questioning the attitudes, values, and beliefs that lie beneath the surface of the writing. They interpret new facts against their background knowledge and bring a complete range of their thinking and feeling into the reading act (Cusipag et al., 2006) postponing judgment until they have considered all the material (Roe & Smith, 2011).

Critical reading skills in English Language are numerous. McClain (1985) points out that critical reading skills include reading material with an attentive and questioning mind, comparing and contrasting what has been read, considering the author's views and being aware of other viewpoints, detecting propaganda techniques, identifying relevant and irrelevant information and differentiating fact from opinion. Thistlethwaite (1992) reveals that critical reading skills are the writer qualification as an authority, the writer's bias and objectivity, the writer's purpose and tone, the up-to-datedness validity of the material, the writer's use of reasoning and support and the reader's own objectivity and biases. Critical reading proficiency are described by Carrigus (2002) at two levels of basic critical reading skills and high-level critical reading skills. The former focuses on paragraph analyzing while the latter on making inference and evaluating. Basic reading skills involve the ability to find the main idea of paragraphs, multi-paragraph units and articles, identify idea patterns of organization, distinguish topical organization from organization by idea, and recognize transitions that signal

relationships among pattern elements and supporting details. High-level critical reading skills require students to draw inference and state implied main idea, synthesize two or more sentences to formulate divided main ideas, distinguish fact and opinion, evaluate evidence, explain figurative language (e.g. analogy), identify basic logical fallacies and emotional appeals. As for Khodary and AbdAllah (2014), critical reading skills entail the ability to identify the main idea, find the evidence the text employs, show author's point of view, guess the meaning of words in context, guess the author's intended meaning, identify cause and effect relationships, recognize bias, draw conclusions, identify the audience, make inferences and recognize the tone. Based on the above views, critical reading skills revolve on three main skills: analyzing, synthesizing, and evaluating.

Critical reading is regarded as a very important life and learning skill (Nitsu, 2004). This may be due to many reasons. The nature of reading is rapidly changing as new technologies emerge (diSessa, 2000). Therefore, important is the ability to find the needed information among the vast amount of information available on the Internet, the ability to integrate information coming from multiple sources, and the ability to effectively use this information to solve problems (Leu & Kinzer, 2000). As Varga (2011) indicates, students need to develop not only skills how to find the necessary and valid pieces of information but also the skills to deal with them. Moreover, EFL students at the college level usually get surprised at the differences between high school and college reading requirements. Instead of reading a few pages in their English textbook each week, college students are required to read a variety of materials outside of the class session: textbooks, primary documents, newspapers, magazines, academic journals, or online materials. Therefore, college students are expected to analyze, synthesize, and evaluate materials they read; they are required to read critically (Ahmed, 2012). Consequently, critical reading skills could open real possibilities in students' future working and personal lives (Haneline & Aiex, 1997). Pirozzi (2003) best captures the significance of critical reading in regarding it as a necessity on the part of learners to uncover motivations and assess arguments, to consider options, products, advertisements and commercials, and to judge policies and programs offered by the various levels of government. It could help students analyze the written texts in terms of the author's main argument, sufficiency of the evidence provided to support this argument, tone and style employed by the author in the text and the overall credibility of the subject matter (Gulcat, 2014). To conclude, as Stamp (2012) asserts,

critical reading makes reading more than an act of gazing over a page of words, but a way to enhance analytical skills and expand intelligence. Therefore, it is crucial for teachers of English to help their students become critical readers (Khodary & AbdAllah, 2014).

3 METHOD

3.1 RESEARCH DESIGN

The current study employed a one-group pre-posttest quasi-experimental design. The participants were pre-tested, then received the MALL program, and finally post-tested.

3.2 VARIABLES

The study included an independent variable (the mobile-assisted language learning) as well as a dependent variable (critical reading). Operational definitions of both variables are listed below.

3.2.1 MOBILE ASSISTED LANGUAGE LEARNING

Mobile-assisted language learning was operationally defined by the researcher as a synchronous and asynchronous learning program, which includes the use of a number of mobile applications such as Google Classroom App and WhatsApp Messenger, for developing critical reading skills of EFL major students at Faculty of Education, Suez University.

3.2.2 CRITICAL READING

Critical reading was operationally defined by the researcher as an interactive process between the reader and the text in order to enhance the ability of determining the author's purpose of the text, anticipating his/her stated opinions and intended meanings, drawing inferences, differentiating between facts and opinions, recognizing bias, and evaluating the relevance of any sentence to the main topic.

3.3 PARTICIPANTS

Participants were 40 third-year EFL majors at the Faculty of Education, Suez University, during the second semester of 2017/2018 randomly chosen among a population of 82 students. Participants' ages ranged between 20 to 22 years. All participants spent at least 10 years

learning EFL. All the participants have mobile phones and use educational and social apps.

3.4 INSTRUMENT

A pre-post critical reading skills test (CRST) was designed by the researcher to measure the EFL majors' critical reading skills. The test consisted of 19 MCQs covering the six previously-assigned critical reading skills in the adopted definition of critical reading. The test is divided into three sections. The first section consisted of 7 MCQs in the form of short passages/sentences. The second section included a comic with 6 MCQs. The third section contained 6 MCQs under two long passage. Eleven experts in the field of TEFL were relied on for their opinions on the appropriateness of the test items. The test was administered to 30 third-year EFL major students, out of the sample of the study. Piloting aimed to ensure the clarity of the instructions of the CRST and to determine the time needed for completing the test. The researcher achieved construct validity through calculating Pearson's Coefficient of correlation between the scores of 30 third-year EFL students on CRST. The coefficient of correlation between the critical reading skills and the total score of the test ranged between (0.395 and 0.607) and all the values are significant at the level of (0.01). Test-retest reliability was achieved through administering the test twice, with a 14-day time span. Pearson's Coefficient of correlation between the two administrations was .573. The coefficient is significant at the 0.01 level.

3.5 PROCEDURES

The experimental procedures of the present study were carried out during the second semester of the 2017-2018 academic year in four successive stages: pretesting, setting the scene, implementing the mobile-assisted language learning program (MALLP), and post-testing. As for pretesting and posttesting, the critical reading test was administered to all participants before and after implementing the mobile-assisted language learning program, respectively. The two remainder stages are described below.

3.5.1 SETTING THE SCENE

Before the administration of the program, the researcher presented an orientation session at the Faculty of Education, Suez University in order

to introduce the program's aims, procedures, rules and apps. Participants were divided into small groups (five-member groups) and the researcher then assigned the roles of each member as the Timekeeper, the Questioner, the Reporter. Each small group were required to select a name and to install the required apps for the program such as (Adobe Acrobat Reader PDF app, Dictionary app, Google drive app, Google Classroom app, WhatsApp Messenger). The main app of the MALLP was Google Classroom. On the WhatsApp Messenger, the teacher created a group with each sub-group to follow up the program's sessions.

3.5.2 IMPLEMENTING THE MALLP

After the orientation session, participants were exposed to the MALLP twice a week during the second semester of the 2017-2018 academic year within the "*Using Technology in Teaching EFL*" course. Six asynchronous learning sessions on Google Classroom with three synchronous feedback sessions in between. The asynchronous sessions started with a warming activity to the assigned skill, which was either a video with caption, image, or a reading text posted on the Google Classroom App. After uploading the materials of the session from their folders on the app, students learned how this skill helps them become better critical readers. Later, the participants practiced some activities previously prepared by the researcher on the target skill by viewing them either through the Google Classroom app or sending links through WhatsApp messenger. In this stage, the students were independently practicing the target skill individually (Individual activities) and in small groups for cooperation competition (In-group activities). The teacher, in the following stage, assessed the learning outcomes and the acquisition of the skills taught to the students through sending different assessing tools such as checklists, home assignments, ...etc. to the participants' folders on the Google Classroom app with instant feedback.

4 RESULT

Paired-samples t-test was used to compare mean scores of the participants on the pretest and the posttest of critical reading skills. This dependent t-test revealed a statistically significant difference ($t=14.303$, $p<0.05$), in favor of the posttest; see Table 3. Additionally, the effect-size was found ($d=4.58$). This effect size is considered "large" according to Ellis (2010) who indicates that a large effect size corresponds to a range of 0.8 or more.

Table 3: The means of the EFL critical reading test items

Skills	Means of Test Items				
	Items	Q1	Q12	Q14	Q17
Purpose	Pre	.90	1.10	1.30	.05
	Post	.65	.45	1.65	1.70
Intended Meaning	Items	Q2	Q5	Q8	
	Pre	.05	.00	.10	
	Post	1.85	.10	1.55	
Inference	Items	Q6	Q11	Q19	
	Pre	1.25	.85	1.10	
	Post	1.65	1.20	1.20	
Facts Vs. Opinions	Items	Q7	Q10	Q15	
	Pre	.50	1.35	.65	
	Post	.85	1.60	1.10	
Bias	Items	Q3	Q13	Q16	
	Pre	1.50	.30	1.80	
	Post	1.30	.50	1.85	
Evaluation	Items	Q4	Q9	Q18	
	Pre	1.20	1.10	.75	
	Post	1.55	1.60	.90	

Table 4: Results of Paired-samples t-test on the pre-post administration of the EFL critical reading test

Skills	Measurement	N	Mean	SD	T
Purpose	Pre	40	3.35	1.889	2.959
	Post	40	4.45	1.600	
Intended Meaning	Pre	40	3.05	1.431	3.873
	Post	40	4.05	1.467	
Inference	Pre	40	.15	.533	20.154
	Post	40	3.50	.987	
Facts Vs. Opinions	Pre	40	2.50	1.617	3.280
	Post	40	3.55	1.535	
Bias	Pre	40	3.60	1.297	.172
	Post	40	3.65	1.494	
Evaluation	Pre	40	3.20	1.556	2.806
	Post	40	4.05	1.154	

Table 5: Paired-samples t-test of the difference between the means of scores of the participants on the pretest and the posttest of critical reading skills

	Mean	SD	T	df	Sig. (2-tailed)
Pre	16.30	3.67	14.303	39	Significant at 0.05
Post	25.70	3.911			

5 DISCUSSION

The hypothesis of the current study stated that “There would be no statistically significant difference in the participants' mean scores between the pretest and the posttest of critical reading skills test.” In order to test that hypothesis, the researcher used a dependent sample t-test to compare mean scores of both the pretest and the posttest of critical reading skills. This dependent t-test revealed a statistically significant difference ($t=14.303$, $p<0.05$), in favor of the posttest. Additionally, a large effect-size was found ($d=4.58$). This result suggested that the participants have achieved significant improvements in their critical reading skills during the period of the experiment.

In light of this result, the hypothesis was completely rejected. This significant finding can be attributed to the nature of the instructional program based on mobile technology. The participants' skills and their prior knowledge and experience with mobile devices for learning play a crucial role in the output quality of such a mobile-based program and the

overall result. Therefore, introducing a learning program using mobile apps, such as Google Classroom, was not an obstacle for most of the students. Another possible explanation might have been that using smart phones applications increased students' motivation towards learning and developed their critical reading skills. As Weinstein, Husman, and Dierking (2000) confirm, the probability of success in any learning activity is largely determined by students' motivation and learning strategies. Such an explanation is supported by the findings of most of the previous studies such as those of Abu Laban (2017), Böhm and Constantine (2016), Çetin (2015), Chen, Chang, and Wang (2008), Chen, Liu, and Hwang (2016), Huang, et al. (2016), Mellati and Khademi (2015), Singaravelu (2009), Su and Cheng (2015), Vibulphol (2016), Yilmaz (2015). All of these studies confirmed that Mobile Learning in general and Mobile Learning Applications in particular have a positive impact on developing students' interest, motivation and achievement.

6 CONCLUSION

Based on the analysis of the study results and the discussion mentioned above, it can be concluded that using mobile assisted language learning (MALL) inside the Egyptian Faculties could have a high impact on developing EFL critical reading skills for major students. To sum up, applying mobile technology inside and outside college environments pave the way for EFL learners to become advanced critical readers.

7 RECOMMENDATIONS AND SUGGESTIONS

Based on the results and the conclusions drawn from this study, the researcher recommends: 1) incorporating mobile device use in the language-learning curriculum and using technology inside classrooms as a top priority by both teachers and students to improve all EFL skill, 2) allowing teachers and students to communicate with each other in mobile-assisted language learning environments, such as WhatsApp, for extra support, assistance, instant feedback, consultations, etc., which could be very instrumental to the language learning process in enhancing t/s and s/s interaction, 3) holding workshops and more training sessions about new ways of teaching with technology between EFL instructors in schools and universities to benefit from technology in teaching English language skills, 4) emphasizing the importance of developing critical reading skills as one of the primary survival skills for the new millennium at Universities or other tertiary institutions. Furthermore, the following

suggestions can be considered for further research: 1) MALL for developing EFL critical writing skills, 2) developing critical reading skills through MALL in EFL instructions for different samples such as (pre-college EFL students, post-graduate students), 3) the effectiveness of MALL on EFL self-regulation, self-directed learning and self-efficacy, 4) a survey study on the EFL teachers' usages and perspectives of integrating MALL applications into language learning, 5) investigating the effectiveness of using new directions as (Massive Open Online Courses or MOOCs) on developing EFL skills.

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