Developing listening comprehension skills of English majors at Aswan Faculty of Education through a cloud-computing based on the self-Regulated learning approach program

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Developing listening comprehension skills of English majors at Aswan Faculty of Education through a cloud-computing based on the self-Regulated learning approach program

The present study aimed at developing listening comprehension skills of English majors at Aswan Faculty of Education through a cloud-computing based on the self-Regulated learning approach program. The present study followed a pre-post quasi-experimental design. The participants of the study were thirty-seven third year English majors at the Faculty of Education, Aswan University. The study was a one group design. The participants were taught listening comprehension skills through using a Cloud-Computing based program. The study used a listening comprehension skills test. The test was administered to the participants before and after implementing the Cloud-Computing based program. The statistically analysis of the obtained data showed a remarkable effect size of using the Cloud-Computing based program on the participants' listening comprehension skills. The results of the study revealed that the participants' listening comprehension skills were developed after the implementation of the Cloud-Computing based program using the self-regulated learning approach. Accordingly, the Cloud-Computing based program was found to be effective in developing listening comprehension skills of English Department Faculty of Education students.

Key words: Cloud-Computing, Self-Regulated Learning Approach, Listening Comprehension, Faculty of Education Students

المستخلص

تنمية مهارات الفهم الاستماعى لدى طلاب قسم اللغة الانجليزية بكلية التربية بأسوان من خلال استخدام برنامج قائم على الحوسبة السحابية باستخدام مدخل التعلم المنظم ذاتي

هدفت الدراسة الحالية إلى تنمية مهارات الفهم الاستماعى لدى طلاب قسم اللغة الانجليزية بكلية التربية بأسوان من خلال استخدام برنامج قائم على الحوسبة السحابية باستخدام مدخل التعلم المنظم ذاتيا. وتكونت مجموعة الدراسة من طلاب شعبة اللغة الإنجليزية الفرقة الثالثة بلغ عددهم سبعة وثلاثين طالبًا يدرسون بالعام الجامعى ٢٠٢١-٢٠٢٢ م. وقد تم استخدام المنهج شبه التجريبى ذى المجموعة الواحدة، كما تم تدريس الفهم الاستماعى باستخدام برنامج قائم على الحوسبة السحابية باستخدام مدخل التعلم المنظم ذاتيا لمجموعة الدراسة. واشتملت أدوات الدراسة على اختبار مهارات الفهم الاستماعى باللغة الإنجليزية وذلك لتقييم مهارات الفهم الاستماعى لدى مجموعة الدراسة قبل وبعد التجربة. وتمت معالجة البيانات إحصائيا باستخدام برنامج (SPSS). وقد أشارت النتائج إلى التحسن الملحوظ فى مهارات الفهم الاستماعى فى اللغة الإنجليزية لدى مجموعة الدراسة بعد دراسة البرنامج القائم على الحوسبة السحابية باستخدام مدخل التعلم المنظم ذاتيا. وبالتالى أثبتت الدراسة فاعلية استخدام البرنامج القائم على الحوسبة السحابية باستخدام مدخل التعلم المنظم ذاتيا فى تنمية مهارات الفهم الاستماعى لدى طلاب كلية التربية.

الكلمات المفتاحية: الحوسبة السحابية ، مدخل التعلم المنظم ذاتيا ، مهارات الفهم الاستماعى ، طلاب كلية التربية شعبة اللغة الإنجليزية

Introduction

Listening is necessary for proper communication. It is the ability to receive and understand oral messages in the communication process. It comprehension is an important language skill for English as a Foreign Language (EFL) learners to help them make sense of the oral communication. Listening is the most used skill in the communication process. Moreover, it is linked with reading, writing and speaking, and it plays an important role in education.

Listening is a complex mental process that is important for language acquisition. Listening is the attentive receiving of the aural messages and giving meaning to them. The vital role of the listening skill in communication begins with the recognition that listening is the First Language (L1) skill which one should acquire. Language learners are expected to understand what the interlocutor is saying in order to continue the conversation. When learners have difficulty with listening comprehension, this will negatively affect their performance (Wolvin, 2009; Ko, 2010; Karatay, 2018; Al Omari, 2019).

Listening comprehension extends from the realization of the stimulus to an understanding of the oral message. Listening comprehension is constructing meaning from orally presented texts. It is making an interpretation that is reflected in accurate recall of what a speaker has said, and reasonably accurate predictions about what a speaker might say next. Much of the educational process at all levels is based on the comprehensive listening. Therefore, students are required to listen carefully to lectures and classroom discussions in order to understand and retain information (Madden, 2004; Wolvin, 2009).

Technological developments left a great effect on several aspects of people's life. Education is not an exception. As a result of the technological developments and distance education,

learning becomes more learner-centered with less instructor interaction, and learners need to find new ways of regulating and handling their learning (Winkler, 2011). Actually, self-regulatory learning requires learners select and regulate information and manage what they think about, how they process and organize information, and how they change their minds about issues, with new information and make a specified way of analyzing information based on a logical and reasonable procedure (Baird, 2018).

Self-regulatory processes help students achieve higher academic goals because they give learners control over their learning. It is concluded that self-regulated EFL learners can effectively comprehend what they are listening. Consequently, EFL instructors should implement the self-regulatory approach to develop their learners' listening comprehension (Fatemi, Alishahi, Khorasani & Seifi, 2014; Matric, 2018). Self-regulatory approach is an amazing umbrella under which a great number of variables influence learning such as volition, self-efficacy, and cognitive strategies which are studied within a comprehensive and holistic approach. Therefore, self-regulated learning has become one of the most essential domains of research within educational psychology (Panadero, 2017).

Cloud Computing is one of the most popular modern technologies that has become an integral portion of the computing world nowadays (Chandrasekaran, 2014). It is one of the most interesting and most revolutionary types of technology today that entered information technology strategies (Kumar, Jain, Maharwal, Jain & Dadhich, 2014). In the field of education, Cloud-Computing based technology is one of the new technologies that will likely have an essential effect in teaching and learning settings in future (Nofan &Sakran, 2015). Cloud-Computing provides the basic platform that can positively affect

the learning process. Through using Cloud Computing, educators can construct their own online teaching environment to teach effectively and students can study collaboratively (Jin et al., 2010; Almarazroi, Kabbar, Naser & Shen, 2019).

Considering the usefulness of using Cloud Computing in learning, the present study used a Cloud-Computing based program using the self-regulated approach in an attempt to investigate its effectiveness on developing students' listening comprehension and digital literacy skills.

Context of the Study

Despite the importance of listening comprehension skills, the researcher observed that many students had weaknesses in listening comprehension skills. These listening comprehension skills did not take due attention during teaching and learning processes. The need for developing listening comprehension skills of University students was evident in many Egyptian studies such as Sayed (2005); Zaher (2005); Mahmoud (2008); Ahmed (2013); Mohammed (2015) and Mahmoud (2017) recommended doing without traditional methods of teaching listening comprehension skills.

The problem of the current study sprang from the researcher's experience during her work as an assistant lecturer at Aswan Faculty of Education. The researcher noticed that third year English Department Faculty of Education students had weaknesses in their listening comprehension skills. The weaknesses in listening comprehension skills of these students were appeared in their inability to comprehend the main idea, make inferences, predictions and paraphrase the texts presented orally.

To document the problem, the researcher conducted an interview with a pilot sample of 50 third year English Department Faculty of Education students. The interview with

them was about the weaknesses that they face during listening to English oral texts. Regarding the weaknesses which they suffer from in listening comprehension, the interviewed students pointed out that these weaknesses could be traced back to the inappropriate strategies and methods of teaching tm English listening comprehension as these strategies did not help them develop their EFL listening comprehension skills and they need to be taught listening comprehension by using new strategies.

In addition, the researcher conducted a pilot study to make sure that the problem of the study is actually present among Faculty of Education students at Aswan University. It was conducted during the academic year 2020-2021 to a sample (N=50) from third year EFL students at Aswan Faculty of Education. The pilot study is based on listening comprehension skills test adopted from (Park, 2004). It contained two listening comprehension passages with 10 questions. The questions of the listening texts measured the following: "identifying specific stated information, making inferences, and identifying the best explanation". The results of this pilot study revealed that the average of the student's marks is (2) with percentage (20) %.

Statement of the Problem

Based on the results of the pilot study, it is obvious that third year English majors at the Faculty of Education lack listening comprehension skills. Therefore, the present research was carried out to develop listening comprehension skills of English majors at Aswan Faculty of Education through a cloud-computing based on the self-Regulated learning approach program

Questions of the Study

1-What are the listening comprehension skills necessary for third year English Department Faculty of Education students to develop?

2-What is the form of the Cloud-Computing based program using the self-regulated learning approach for developing listening comprehension skills of the study group?

3-What is the effectiveness of the Cloud Computing-based program using the self-regulated learning approach in developing listening comprehension skills of the study group?

Hypotheses of the Study

1- There is a statistically significant difference between the mean scores of the study group in the overall listening comprehension skills on the listening comprehension skills pre-, post- (LCT) in favor of the post LCT.

2-There is a statistically significant difference between the mean scores of the study group on the literal level of the pre-, post-LCT in favor of the post-LCT.

3- There is a statistically significant difference between the mean scores of the study group on the inferential level of the pre-, post-LCT in favor of the post-LCT.

4- There is a statistically significant difference between the mean scores of the study group on the critical and evaluative level of the pre-, post-LCT in favor of the post-LCT.

Aim of the Study

The aim of the study is to develop listening comprehension skills of third year English Department Faculty of Education students by using the Cloud-Computing based program using the self-regulated learning approach.

Delimitations of the Study

1- Aswan Faculty of Education, where the researcher works.

2- 37students of third year English Department Faculty of Education at Aswan University.

3- English literal, inferential, critical and evaluative listening comprehension skills required for English Department Faculty of Education students to develop.

4- Second semester of the academic year 2021/2022.

Variables of the Study

• Independent variable:

- Cloud-Computing based program.

• Dependent variable:

- Listening comprehension skills (literal, inferential, and critical &evaluative listening comprehension skills).

Definitions of Terms

1- Cloud Computing

The researcher operationally defined a Cloud -Computing as a new technology based on using the Internet that can help 3rd year college students improve listening comprehension and digital literacy skills by using listening data, content, information, images, videos and audio materials stored in the cloud at any time and place.

2- Self-Regulated learning Approach

The researcher operationally defined the Self-regulated learning approach as an approach that college students at Aswan can use to monitor and manage their learning process. It can lead them to better comprehension of listening texts and develop their digital literacy skills through using program based on cloud-computing.

3- Listening Comprehension

The researcher operationally defined Listening comprehension as the process of constructing meanings of what the speaker intends to convey to the listener and the ability to comprehend and interpret oral messages in the communication process.

Theoretical Framework

Section One: Listening Comprehension

Potential Listening Comprehension Problems

Listening comprehension is a difficult skill for EFL students to acquire. EFL students face many problems while listening to

texts presented orally. In order to solve these problems and enhance students' listening comprehension skills, it is necessary to identify what problems and obstacles students find during listening process.

Many EFL students face difficulties while listening to oral texts. This is because of the fact that educational environments pay more attention to structure, vocabulary, writing, and reading. Instructors think that listening is not an important part of many course books and they do not attach importance to listening while preparing their lesson plans. They believe that listening skills will be developed naturally within the language learning process. In fact, there are number of listening barriers based on message, audience, delivery and environment. There are also several problems which may appear during or before listening practice such as quality of the recorded material, accent, cultural differences, unfamiliar vocabulary, length and speed of the listening, physical conditions and lack of concentration (Bingol, Celik, Yildiz & Mart, 2014).

According to Subina and Balbuca (2016), there are obstacles to communication between the speaker and the listener such as linguistic barriers, communication barriers, speech and language difficulties, personality differences, boring classroom lessons, peer pressure, oral barriers, perception barriers, and cultural barriers.

Listening Comprehension Skills

Listening comprehension is one of the most difficult tasks that a student should do. In order to achieve comprehensive listening, students should acquire some listening comprehension skills such as, getting the main idea of spoken text, identifying the details involved in, and summarizing the oral text.

In academic settings, Educational Testing Service (ETS) (2009) indicated that learners should listen effectively to conversations and lectures.

Academic listening is usually done for one of the three following purposes;

- Listening for basic comprehension: to comprehend the general idea, main points, and specific details related to the main idea.
- Listening for pragmatic comprehension: to identify a speaker's attitude and degree of certainty, and to identify a speaker's function or purpose.
- Connecting and synthesizing information: to recognize the organization of the presented information, identify the relationships between ideas presented for example; cause/effect, compare/contrast, or steps in a process, make inferences and draw correct conclusions based on what is implied in the text, and make connections between pieces of information in the oral text.

According to Solak and Erdem (2016), listening comprehension has various types of listening sub-skills that allow listeners to understand the listening material. Listening sub-skills most commonly used in language classrooms are: listening for-gist such as listening to get a main idea, listening for specifics such as listening just to get a specific piece of information, listening for details such as listening to every detail, and try to comprehend as much as possible, listening to infer such as listening to comprehend how listeners feel, listening to questions and responding, and listening to descriptions.

Importance of Developing Listening Comprehension Skills

Because of the importance of listening comprehension in learning English language for EFL students, it is necessary to pay attention to develop EFL students' listening comprehension

skills. Therefore, it is essential to adopt effective strategies, approaches, and programs in order to improve these listening comprehension skills.

Listening comprehension includes many components. Listening comprehension is a basis component of other language skills. There is a significant relationship among listening comprehension and reading comprehension skills of learners (Sapoetra, 2017). Listening comprehension is regarded as a primary component in developing reading comprehension skills (Phalen, 2020). Furthermore, listening is the foundation for speaking process as individuals cannot develop their oral skills if they cannot listen effectively. This is because listening represents the oral input that one receives to be able to produce output, so listening comes before speaking (Vargas & Gonzalez, 2009).

Section Two: Self-Regulated Learning Approach

Structure and Function of the Self-Regulated Learning (SRL) Approach

The SRL approach improves from social sources and turns into self-sources by means of acquired learning strategies and the ability to guide enactment based on individual's own ability to reflect on information, reconstruct knowledge, and determine an outcome. Self-regulation also includes the process of acquiring beliefs and theories about one's own abilities and competencies and how an individual regulates strategies to solve problems (Baird, 2018).

According to Manganello, Falsetti, and Leo (2019), SRL approach is a recursive process which includes three different phases, they are as follows: forethought, performance, and self-reflection. In the forethought phase, learners determine their learning objectives, choose the appropriate learning strategies, and make an initial assessment of their capacity to achieve the targets and to activate their previous knowledge. In the

performance phase, learners monitor their learning process in terms of maintaining attention, use of self-learning strategies, management of time, management of the study environment, and search for help. In the third phase, learners evaluate their learning process, particularly the achievement of learning outcomes taking into consideration the objectives initially set and the strategies selected.

Importance of Using the Self-Regulated Learning Approach

It is important to be a self-regulated learner. Using self-regulation helps learners do tasks more effectively and independently. Successful students are able to check their own comprehension and monitor their learning process. Using the SRL approach allows learners to learn more effectively because they are able to set clear goals for themselves and monitor their progress based on their objectives they initially determined.

The SRL approach can be helpful to learners to improve their motivation and to better manage their learning. The independent learning process does not merely mean learners working alone, but it stresses the significant role that educators can play in enabling and supporting independent learning. Relatedly, Oxford suggests that successful independent learning relies on a number of factors. These factors include cognitive skills such as focusing of memory, problem-solving, metacognitive skills associated with an understanding of how learning occurs along with effective skills related to feelings and emotions (Latifi et al., 2014).

Based on the above discussion, acquiring listening comprehension skills is essential to EFL students as without the ability to listen effectively, messages will be easily misunderstood. Listening comprehension skills are very important for students to understand a spoken message in the best manner. Thus, because of the usefulness of listening

comprehension skills to EFL students, a lot of studies tried to find out approaches and programs to develop EFL students' listening comprehension skills. Among these programs is Cloud-Computing.

Section Three: Cloud Computing

Nature of Cloud Computing

At present, Cloud Computing is one of the most popular technologies which has turned into an integral part of the computing world. Using Cloud Computing is growing constantly and it is expected to increase further. Many frequent Internet users are greatly dependent on cloud-based applications for their daily activities in both professional and personal life. Cloud Computing has appeared as a technology to attain the utility of computing while using the Internet for accessing applications (Chandrasekaran, 2014). Cloud Computing is a core technology and a new computational model in the next generation of network computing platform. It presents reliable and secure data storage, convenient Internet services and computing power (Jin et al., 2010).

There are three kinds of cloud services which are: Software as a Service (SaaS), Platform as s a Service (PaaS), and Infrastructure as a Service (IaaS). Firstly, the SaaS is an integral application presented as a service on demand such as the Google Apps that offering of basic business services which includes email, word processing and other apps. Secondly, the PaaS encapsulates a layer of software and presents it as a service that can be used to build higher-level services. There are two perspectives on PaaS; the consumer and producer of the services. Thirdly, the IaaS delivers basic storage and compute capabilities as standardized services over the network. Servers, switches, storage systems, routers and other systems are pooled and make it available to handle workloads that range from application

components to high-performance computing applications (Sun Microsystems, 2009; Huth & Cebula, 2011; Chandrasekaran, 2014; Vanitha, Musthafa, Rahman & Rajan, 2019).

Cloud Computing is an advanced technology that provides services to individuals and organizations on demand via the Internet. Cloud Computing was implemented in several fields such as education, healthcare, commerce, and government. Implementing Cloud services in an organization which can improve performance and reduce cost related to computing services (Almarazroi et al., 2019). Cloud Computing refers to the use of a network of remote servers to carry out services and store files. The term Cloud Computing means that the network is as common as the clouds in the sky, indicating that the network is ubiquitous, easy to access, and readily available anywhere in the world (Foyle, 2015).

Benefits of Cloud Computing

Cloud Computing nowadays facilitates communication, collaboration, and essential online services during the COVID-19 crisis. Currently, the COVID-19 pandemic has compelled people to work and study from their homes, but they have to communicate and collaborate online. Therefore, Cloud Computing has an important role in taking up this big challenge of working and learning from home and delivering efficiently (Singh, Halem, Javid, Kataria & Singhal, 2021).

Cloud Computing has also many benefits for institutions and learners. It provides its users with beneficial factors such as mobility, security, scalability, availability, interoperability, and end user satisfaction while using software applications and other computing resources (Klug, 2014). The benefits of deploying applications that use Cloud Computing include reducing the risk of using physical infrastructure, minimizing run time and

response time, lowering the cost of entry, and increasing the pace of innovation (Sun Microsystems, 2009).

Using Cloud Computing in Education

The demand of education never goes down. It is one of the fastest-growing industries in the world. Using Cloud Computing in education opens fields for better research, collaboration, and discussion. Besides, Cloud Computing enables classrooms to be used on remote locations (Chopra, Mungi & Chopra, 2013). In the field of education, Cloud Computing provides the basic environment and platform to affect the learning environment positively. It also helps students build their personal networks, support educational institutions to build education network resources, and develop information systems (Jin et al., 2010).

Using modern technology in universities to support teaching and learning has clearly changed the way education is being conducted. Because of technology, educational institutions become able to collaborate, increase enrolment, and share resources. Over the world, educational institutions have become highly dependent on technology for teaching and learning as well as for conducting research. Therefore, there is a constant search for opportunities to rationalize the way they manage their resources. These opportunities have become even greater with the introduction of Cloud Computing technology. Many universities in the developed countries recognized the potential and efficiency of using a Cloud Computing program in higher education (Muhammed, 2019).

Method

Design of the Study

This study adopts the quasi-experimental design research of one group pre-, post-test that is used to examine the effectiveness of the independent variable which is the Cloud-Computing based program using the self-regulatory approach on the dependent

variable which is listening comprehension skills of third year English Department Faculty of Education students.

Participants of the Study

The participants of the present study represented one section from third year English Department Faculty of Education students at Aswan University. They were randomly selected from the sections of third year English Department studied at Aswan Faculty of Education. They were 37 students in the academic year 2021/2022. The present study followed the one group pre-, post-test quasi-experimental research design. The researcher taught the study group throughout the stages of the present study experiment.

Instruments and materials

The researcher prepared and used the following instruments and materials to fulfill the aim of the present study:

- A Listening Comprehension Skills Checklist.
- A Listening Comprehension Skills Test.
- A framework of a Cloud- Computing based Program which will be used to develop English listening comprehension skills among the study group. (Available upon request from the researcher)

Procedures of the Study

The following procedures were followed to carry out the present study:

1- Reviewing literature and previous studies related to listening comprehension skills, self-regulated learning approach and Cloud-Computing.

2- Selecting the participants from third year English Department students at Faculty of Education, Aswan University.

3- Preparing a checklist of listening comprehension skills required to be developed by third year English Department Faculty of Education students, Aswan University.

4- Designing the pre-, post-LCT to be used to assess the participants' listening comprehension skills before and after the experiment.
5- Verifying the validity and reliability of the LCT by submitting it to a group of jury members.
6- Designing a Cloud-Computing based program using the selected cloud applications (Google Sites, Google Forms, Google Chat) considering the various program dimensions in terms of objectives, content, activities, tasks and evaluation methods of the program.
7- Assessing the validity of the form of the Cloud-Computing based program and its suitability for the present study participants by submitting it to a group of jury members.
8- Submitting the LCT to the participants to assess their listening comprehension skills before implementing the Cloud-Computing based program.
9- Teaching the participants by using the Cloud-Computing based program using the self-regulated learning approach.
10- Submitting the LCT to the participants to assess their listening comprehension skills after implementing the Cloud-Computing based program.
11- Collecting data and treating it statistically.
12- Analyzing and interpreting the results of the study.
13- Providing recommendations, conclusions and suggestions for further research.

Results of the Study

Results of Hypothesis One

The first hypothesis stated that "there is a statistically significant difference between the mean scores of the participants on the overall listening comprehension skills on the pre-, post-LCT in favor of the post-LCT". The following table presents participants' mean scores, standard deviation, t-value and level of

significance on the overall listening comprehension skills pre-, post-LCT.

Table (1): t-value of the Difference between the Mean Score of the Participants on the Overall Listening Comprehension Skills on the Pre-, and Post-LCT

Skill	Test	N	Mean	S.D	T-value	D.F	Sig.
Overall Listening Comprehension Skills	Pre	37	5.67	2.01	10.99	36	0.01
	Post	37	9.29	2.23			

The results of Table (1) showed that the mean score of the study participants on the overall listening comprehension skills on the pre-LCT was 5.67 with a standard deviation of 2.01 while the mean score of the participants in the overall listening comprehension skills on the post-LCT was 9.29 with a standard deviation of 2.23. This result revealed that the difference in the mean scores of the participants on the overall listening comprehension skills between the pre- and post-LCT was statistically significant ($t = 10.99$, $p > 0.01$). Therefore, the first hypothesis was confirmed.

Results of Hypothesis Two

The second hypothesis stated that "there is a statistically significant difference between the mean scores of the participants on the literal level of the pre-, post-LCT in favor of the post-LCT". The following table presents participants' mean scores, standard deviation, t-value and level of significance in the literal level of the pre-, post-LCT.

Table (2): t-value of the Difference between the Mean Scores of the Participants in the Literal Level of the Pre-, and Post-LCT

Skill	Test	N	Mean	S.D	T-value	D.F	Sig.
Literal Listening Comprehension Skills	Pre	37	3.08	1.01	6.48	36	0.01
	Post	37	4.51	1.04			

The results in table (2) revealed that the mean score of the participants on the literal level of listening comprehension skills on the pre-LCT was 3.08 with a standard deviation of 1.01 while the mean score of the participants on the literal level of listening comprehension skills on the post-LCT was 4.51 with a standard deviation of 1.04. This result revealed that the difference between the mean scores of the participants on the literal level of listening comprehension skills of the pre-, and post-LCT was statistically significant ($t = 6.48$, $p > 0.01$). Hence, the second hypothesis was confirmed.

Results of Hypothesis Three

The third hypothesis stated that "there is a statistically significant difference between the mean scores of the participants on the inferential level of the pre-, post-LCT in favor of the post-LCT". The following table presents participants' mean scores, standard deviation, t-value and level of significance in the inferential level of the pre-, and post-LCT.

Table (3): t-value of the Difference between the Mean Scores of the Participants on the Inferential Level of the Pre-, and Post-LCT

Skill	Test	N	Mean	S.D	T-value	D.F	Sig.
Inferential Listening Comprehension Skills	Pre	37	1.37	1.16	5.55	36	0.01
	Post	37	2.62	1.21			

The results of table (3) indicated that the mean score of the participants on the inferential level of listening comprehension skills on the pre-LCT was 1.37 with a standard deviation of 1.16 while the mean score of the participants on the inferential level of listening comprehension skills on the post-LCT was 2.62 with a standard deviation of 1.21. This result showed that the difference between the mean scores of the participants on the inferential level of listening comprehension skills of the pre-, and post-LCT was statistically significant ($t = 5.55$, $p > 0.01$). Consequently, the third hypothesis was confirmed.

Results of Hypothesis Four

The fourth hypothesis stated that "there is a statistically significant difference between the mean scores of the participants on the critical and evaluative level of the pre-, post-LCT in favor of the post-LCT". The following table presents participants' mean scores, standard deviation, t-value and level of significance in the critical and evaluative level of the pre-, and post-LCT.

Table (4): t-value of the Difference between the Mean Scores of the Participants on the Critical and Evaluative Level of the Pre-, and Post-LCT

Skill	Test	N	Mean	S.D	T-value	D.F	Sig.
Critical and Evaluative Listening Comprehension Skills	Pre	37	1.19	0.99	4.71	36	0.01
	Post	37	2.19	0.85			

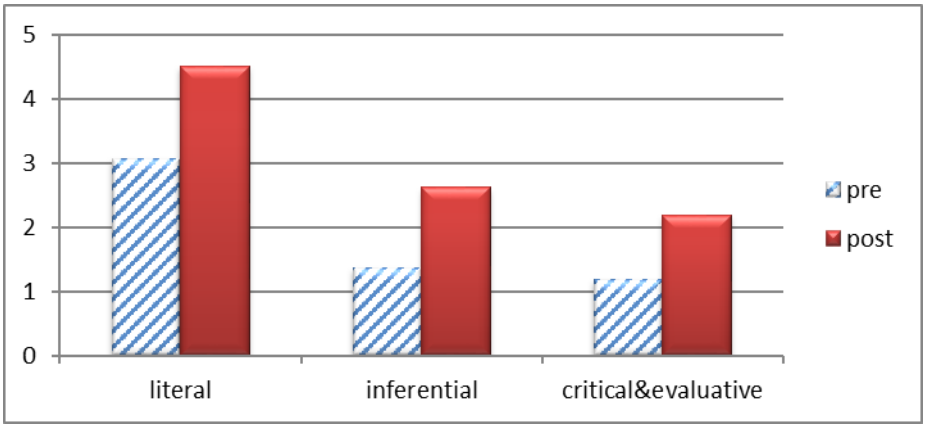
The results of table (4) revealed that the mean score of the participants on the critical and evaluative level of listening comprehension skills on the pre-LCT was 1.19 with a standard deviation of 0.99 while the mean score of the participants on the Critical and Evaluative level of listening comprehension skills on the post-LCT was 2.19 with a standard deviation of 0.85. This result showed that the difference between the mean scores of the participants on the critical and evaluative level of listening comprehension skills of the pre-, and post-LCT was statistically significant ($t = 4.71$, $p > 0.01$). Consequently, the fourth hypothesis was confirmed.

Discussion of the Study Results

The main aim of the present study is to develop listening comprehension skills of English Department Faculty of Education students through the implementation of the Cloud-Computing based program using the self-regulated learning approach. The Cloud-Computing based program included various authentic listening materials such as audios, activities and tasks that were introduced to the participants. The results of the present study showed that the Cloud-Computing based program has improved the participants' literal, inferential, and critical and

evaluative listening comprehension skills (Figure 1). This means that the participants achieved progress in their performance on the LCT. They achieved higher mean scores on the post- LCT than that on the pre-LCT.

Figure (1): The Mean Score of the Study Participants in the Literal, Inferential, and Critical and Evaluative Levels of the Pre-, Post-LCT



Challenges

There were some hindrances encountered by the participants during the study such as:

- The students' fear of participating in the program.
- Students' weaknesses in listening comprehension skills.
- Weak Internet connectivity.
- Students' Initial unfamiliarity with Cloud Computing applications.
- Initial lack of Internet access.
- Time consumption.

Conclusions

The Cloud-Computing based program using the self-regulated approach had a remarkable effectiveness on developing the

participants' listening comprehension skills. Based on the results of the present study, the following conclusions were drawn:

- The Cloud-Computing based program was effective in developing the study participants' listening comprehension skills. It helped enhance their ability to listen for the gist, identify details, recognize context, make inferences, make predictions, identify the overall purpose of the oral text, summarize the text, and other sub-skills.

- The Cloud-Computing based program using the self-regulated learning approach helped the participants interact actively and collaboratively while using the Cloud-Computing applications.

Recommendations of the Study

In the light of the results of the present study, the following recommendations are presented:

1- English listening comprehension skills which are literal, inferential, and critical and evaluative should be given more attention when designing EL programs.

2- Training EL instructors on the use of the Cloud-Computing based program in teaching listening comprehension to their students.

3- Using the Cloud-Computing applications in teaching English listening comprehension to students at Faculties of Education.

4- University instructors should clarify the importance of developing the listening comprehension skills to their students.

5- Developers of EL curriculum should benefit from the Cloud-Computing based program in e-learning education.

Suggestions for Further Research

Within the results of the present study, the following points are suggested for further research:

1- The effect of the Cloud-Computing based program on English listening comprehension skills of General secondary stage students.
2- The effect of using other new technologies on developing English Department Faculty of Education students' listening comprehension skills.
3- The use of the Cloud-Computing based program to improve other English language skills which are reading, speaking, and writing skills of English Department Faculty of Education students.
4- The effect of other Cloud-Computing applications and tools on developing English language skills.

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