



**The Impact of an E- Environment Based on Virtual Language
Laboratory in Developing English Listening Comprehension
Skills for Secondary Stage Students**

By

Dalia Farouk Attia

Volume (79) Issue (Third) Part (1) July 2020

Introduction

One of man's unique assets is language. It serves as a communication method. A revision of the notion of communicative competence to include the notion of intercultural competence has also been triggered by the notion of English as a foreign language. It shifts the emphasis on learning how to communicate in cross-cultural environments, where native-speaker communication expectations might not be a priority. At the same time, it is now recognised that oral interaction models in classroom materials should not necessarily be based on textbook writers' intuitions, but should be guided by conversational research results and the analysis of actual speech analysis (Babae, 2017).

Listening is a dynamic process to be understood in spoken language. Because native speakers speak rapidly and unclearly, English language learners have difficulty catching the sounds of spoken English (Riskiana, 2015). Native speakers of English have the English language skills that English language learners are seeking to learn. Listening is a prerequisite for speaking, and speaking is the ultimate purpose of listening (Babae, 2017).

In language learning, listening takes precedence over everything else, since progress in speaking, reading and writing skills depends on the English language learner's listening abilities (Yasin, Faisal & Permatasari, 2018). A complicated ability that makes contact possible is listening (Mohamed, 2018; Sejdiu, 2017). The meaning of listening exceeds the sound of comprehension, which requires recognising, conveying and understanding to socialise with others (Mohamed, 2018). Effective listening facilitates improved communication and meaningful interactions (Picard & Velantham, 2016). Listening comprehension is important and should be specified a great primacy in teaching (Ahour & Bargool, 2015).

According to many studies on the significance of concentrating on listening skills, listening has been considered a fundamental skill because it is a prerequisite to speaking and writing (Bingol, 2017; Cakir, 2018; Nix, 2016). English language learners using bottom-up processing skills can be used as tape

recorders and they are model builders when they use top-down processing skills (Ahour & Bargool, 2015). Bottom-up comprehension skills are just as powerful as listening skills for English language learners since they are essential skills. Top-down processing skills, however, are part of the head knowledge that allows the learner to think about their thought and use multiple understanding techniques. This is an important factor because many variables, such as accent, speech speed, prosody and context information, make listening difficult (Ahour & Bargool, 2015; Basal, Gulozar & Demir, 2015). Using reduced forms, elisions and related streams of words, several native speakers speak (Ahour & Bargool, 2015).

Listening comprehension has been viewed in recent decades as an unassertive skill that has been unexpectedly acquired. Now, from a receptive skill into an engaging one, the notion of listening comprehension has shifted. This new notion of listening comprehension has prompted second language teachers to re-examine their listening strategy and find alternative ways to involve learners in the target language. The teaching of listening has attracted a greater level of interest in recent years than it did in the past. Now, university entrance exams, exit exams, and other examinations often include a listening component, acknowledging that listening skills are a core component of second-language proficiency, and also reflecting the assumption that if listening isn't tested, teachers won't teach it (Bingol, 2017).

For some purposes, listening comprehension was ignored in our Egyptian secondary level. This may be challenging, and it may be less appealing. With little attention to listening, teaching English in Egypt focuses on the skills needed for exams. Bear said that "listening was rarely taught in school because teachers believed that listening was acquired automatically along with almost everything else; it was developed naturally and skills needed to be developed like any other ability.

In our Egyptian background, Attia (2002:25) showed several reasons for neglecting listening awareness, as due to a number of mystical false conceptions about what means and whether it should

be created, the significance of listening was not recognised. The assumption that listening is a passive ability is one of these myths. Listening as a synonym of listening and speaking of it as a normal gift that requires no preparation are other myths.

Language teaching is intended to enable learners of the English language to understand and interact outside the classroom (Gunduz, Ozcan & Uzunboylu, 2017). Traditional teaching can teach grammar and vocabulary to learners, but even the best students struggle with listening (Cavus & Ibrahim, 2017). Traditional teaching approaches include lecturing for the English language learner, who lacks contact (Bingol, 2017).

The changes in the teaching of listening have led to three key developments: a shift in perspectives that leads to considering listening as an ability that takes precedence over language content details; a willingness to link the essence of listening practised in the classroom to genuine listening that takes place in real life; and the importance of providing inspiration and a focus on listening (Cavus & Ibrahim, 2017).. Teaching listening and the emphasis of listening instruction have now shifted. Listening methods were originally strongly influenced by written language models and a behaviourist approach. Later, the emphasis turned to developing listening as a ability required for meaning to be built and transmitted.

Among all types of students, teachers, educational goals, and educational designs, technology is consistently the common ground. Therefore, it only makes sense to recognise the unique technical methods which can be used in the service of foreign language teaching when analysing discipline-specific practise. Technology is a way in which we can relate the priorities of educational institutions to the needs of learners in the 21st century (Stephenson, 2018). Today's instructor is known as a simulation environment creator and manager. Learning-led training is in groups or individualised. Individualized services consist of learning environments tailored specifically for the desires and needs of the individual. (Mroz,2015)

The rise of eLearning technologies requires new forms and approaches to the design and creation of digital educational resources (DER), including virtual learning labs (VLL), which allow carrying out scientific experiments with the use of one or more pieces of expensive elaborate equipment and software in the remote access mode. But otherwise, the VLL can be considered as a supporting remote access distributed hard-software complex which can simulate any objects and processes. (Dukhanov, Alexey; Karpova, Maria; Bochenina, Klavdiya, 2014:2472-2482) Usually these products contain application software and packages for numerical simulation of various processes, data sources, results interpretation and visualization means, unique and expensive equipment, and other instruments for solving tasks usually in multi- and trans-disciplinary scientific areas.

Several studies on language labs have found that students generally have a positive attitude toward computer technology in the language classroom and such technology has a positive effect on language learning achievement. For example, In Yau and Cheng's study (2012) about students' confidence showed that integrating technological components in their courses enhanced students' confidence in language learning. Similarly, Oz (2015) stated that Turkish EFL students have positive attitudes towards Foreign Language Learning and integrating CALL-applications into language learning process.

In a study revealed in 2015, Manurung found that the implementation of contextual internet-based instructional materials improves the listening skill of the students. However, there are other studies having different results. For example, a study that aimed to search the effect of computer-assisted language learning (CALL) on the sophomore undergraduate students' success on the TOEFL exam was conducted on 34 students in EFL department in Middle East Technical University. The findings showed that there was no statistically significant difference between the control and experimental group in overall scores and on the structure section.

Implementing web resources in the virtual language laboratory will aid students to stun their dread and anxiety of listening in English. An extra advantage is that listening to songs was entertaining for students, in that these songs provided subtitles along with videos. The testing part that was held following using these materials eased students as well as the instructor in evaluating listening comprehension. However, 57.6% of the students stated that operating within the website without the instructor's supervision was difficult (Horzum & Kaymak,2015 and Horvat & Dobrota,2015). Dayag, (2018) claims that, the use of technology in English virtual laboratories, especially for English as Foreign Language (EFL) students, has many benefits. Students attend the laboratory can utter sounds correctly when compared to students taught in the classroom only. Teachers and students can do research in auditory, articulatory and acoustics phonetics. Other aspects of the prosodic features of English like the stress and intonation are better leaned and taught in the virtual language laboratory via the enormous synchronous or asynchronous tools beside the virtual library that cover a wide range of learning styles.

A probe into the researches carried out during the last three decades throw light on the fact that there has been little research attempted on the methods of teaching English at the secondary stage and particularly using Language Laboratory for teaching of English. The present research is an attempt in this direction. An experimental study in teaching of listening comprehension skills through Language Laboratory at the first grade of the secondary stage is a novel investigation.

Research Justification and Rationale

▪ Personal Experience

Throughout the researcher' experience in teaching ESL in Egypt ,she noticed the decline of students proficiency in listening and speaking skills whose main reason due to the lack of effective technological tools that enable students to enhance their English language skills especially listening and speaking

▪ **An exploratory study**

The researcher conducted an exploratory study consists of a test for English listening skills where students hear recorded sentences, students have studied before, followed by mcq as students are asked to choose the right answer.

The sample consisted of 31 students from the average first grade students in El-Sadat Secondary School in Tanta, El-Gharbia governate. The following tables show the tests results:

Results of listening test:

| EVALUATION GRADE | A (14-15) | B (13-12) | C (11-10) | D (8-9) | F (7-LESS) |
|------------------|--------------|--------------|--------------|------------|---------------|
| STUDENT NUMBER | 2 | 4 | 4 | 5 | 24 |
| 100% | 94,2 | 83,8 | 83,8 | 64,67 | 100% |

Out of schedules it is concluded that:

- The proportion of students gained (F) in listening test is approximately 68%
- These results indicate the weakness of secondary students in listening skills and demands for modern solutions to develop these skills

▪ **Previous researches**

- (Eleteiby,GihanEl-Sawat,2012) The Effect of using multimedia in developing English listening skills for the preparatory stage. This study used the multimedia in developing English listening skills for preparatory stage students by applying unequivalent groups design with pre and post- tests , the results support the effectiveness of using multimedia in developing English listening skills for the preparatory stage.

- (Shehata,Asmaa Gamal AbdelNaser,2015) The Effectiveness of Using Project Based Learning Integrated with ICT in Developing Second Year Prep-SchoolAuraj-Oral Communication Skills Preparatory School Students' Aural- Oral Communication Skills. The group of the study consisted of 50 students from Tahnasha Preparatory school, Minia governorate. A pre-post control group research design was used to achieve the research objectives. Fifty students were randomly assigned to two

groups; the treatment group and the non-treatment group (25 students each). The instruments of the study included a needs assessment check list of listening and speaking skills, Teacher's survey on the techniques they use in teaching English, Communicative Speaking Test and Communicative Listening Test. The treatment group was taught by using BPL integrated with ICT program to develop their oral-aural communication skills. The researcher designed an intensive ICT course as an orientation by the help of the ICT teachers in the school to help students acquire the ICT skills needed for conducting the experiment. Learning in the treatment group was based on conducting a project at the end of each unit using computers and other technical tools such as digital cameras, cell phones, and internet. On the other hand; the non-treatment group was taught using the conventional methods of teaching and learning. The program was conducted during the 2nd term 2013/2014, 45 minutes a day. Results of the study revealed that most of the PBL integrated with ICT participants achieved significantly higher levels in their aural-oral-communication skills than those of the non-treatment group on post-tests. Analysis of the data collected indicated that the treatment group showed obvious improvement in their Communicative Listening and Communicative Speaking skills.

- (Gheith Asmaa, Ghanem, 2015) Effectiveness of Using Reciprocal Teaching Strategies Developing for Secondary Students' Listening Comprehension. The purpose of this study was to examine the impact of using reciprocal teaching techniques to improve listening comprehension skills for secondary students. The researcher adopted the quasi-experimental method in order to achieve this objective. The study participants consisted of (45) female students in 1 year of secondary stage (Thanawya Banat girls' secondary school in the Senblawin educational zone). A program was developed based on mutual teaching techniques for improving skills for listening comprehension. A listening comprehension test was designed to be used by participants as a pre-/post test. By using the impact size technique (Eta square), the effect of using reciprocal teaching techniques for improving

listening comprehension skills was calculated. The findings showed that there were statistically significant variations between the overall mean pre / post test scores and each sub-skill in listening comprehension in favour of the post / test scores. There was a statistically significant difference between the mean pre-test teaching strategy training scores of the study community and the average post-test listening scores for the post-test teaching strategy training. In each listening sub-skill for the post-test, there was a statistically significant difference between the mean scores of the experimental group compared to the reciprocal teaching technique programme in the pre-test and the post-test. In view of these findings , the researcher suggested some suggestions that can assist designers, managers and teachers of the English language in improving comprehension skills in teaching listening.

- (Elbially,Ehab Abdallah Elsayed,2015) The Impact of Different Learning Styles and the Interaction Pattern in the virtual language Laboratory on the Development of the Preparatory Stage Studebts'English Language Skills. Researching the types of interaction in virtual laboratories is considered a contemporary concern which educators must be attentive to. The varied patterns of interaction in the virtual lab include: synchronous and asynchronous types of interaction. Synchronous is characterized by the simultaneous availability and exchange of educational and research issues between the learner and the teacher in real time for the purpose of teaching content. Descriptive analytical method and experimental approach were used to identify the impact of the types of interaction in virtual language laboratories on the development of e-reading skills. A sample of second grade secondary students was chosen from the Institute of Timai El-Amdîd Middle School and divided into to two experimental groups: Group 1, where e-reading is taught through synchronous in the virtual lab type; Group 2, where e-reading is taught through asynchronous in the virtual lab type. The statistical difference between the two types was in favor of Group 1. The study recommended to train 8th graders in e-reading of English language skills, and to incorporate the proposed virtual language laboratory

in order to improve learning and develop the various other cognitive aspects of learning.

- (Abo Elmaaty, Mohamed Abu Elmaaty, 2019) Designing digital learning objects based on blending between the interaction types and podcasting to develop listening skills among secondary stage students. This research aimed at identifying the listening skills and revealing the impact of designing digital learning objects based on blending between the interaction types and Web Podcasting on the development of English language skills among secondary school students. To achieve this objective the researcher divided the study sample which consisted of (60) students randomly and equally into two experimental groups: The first experimental group which consisted of (30) students learned by digital learning objects based on blending between the interaction types, the second experimental group which consisted of (30) students learned by digital learning objects based on blending between the interaction types and Podcasting to develop cognitive and performance aspects among secondary school students because they have deficiencies and weaknesses in these skills. The researcher used a range of tools such as the achievement test to measure the cognitive achievement of these skills, observation sheet to measure the performance of these skills. The results showed the presence of statistically significant differences between the two groups in favor of the second group in cognitive achievement and performance attributable to the teaching mode which included giving appropriate feedback and it took into account individual differences among the students and in favor of using digital learning objects based on blending between the interaction types and Podcasting. Besides, the subjects of the second experimental group reached the mastery level in both the cognitive domain and performance.

- (Ahmed, Said Ahmed Mahrous, 2018) The Effect of a Language Learning Strategies Based Model on Developing Secondary Stage Students' Listening Comprehension Skills and Attitudes towards Strategies Use. The purpose of the present study was to investigate the effect of a language learning strategies-based

model on developing listening comprehension skills and attitudes towards strategies use among first year secondary stage students. The design of the present study was a pre-post, quasi-experimental design. The participants of the study were forty-two first year secondary stage students. The participants were trained to use specific language learning strategies when responding to listening tasks. The instruments of the present study included a listening comprehension skills test for assessing the participants' listening comprehension skills, and a scale for measuring the participants' attitudes towards strategies use. The test and the scale were administered to the participants before and after the treatment. Data were treated statistically using SPSS (version 19). Results of the study revealed that the language learning strategies-based model was found to be effective in developing first year secondary stage students' listening comprehension skills and attitudes towards strategies use.

- (El-hameidy, Wasmiah Dent Souliman,2019) The Effectiveness of Virtual Language Laboratory in Developing English Listening and Reading Skills among the Second Grade of Secondary school students in Riyadh. The study aimed to recognize the effectiveness of design a virtual language lab on English language listening and reading skills development for secondary second year female students in Riyadh. To achieve the study goal, the researcher has used the semi experimental method in implementing the research procedures. The study sample consists of secondary second year female students during academic year 2016-2017; meanwhile the study population reaches (50 female students) who are randomly selected and then they are divided into two groups: a control group of (25 students), and an experimental group of (25 students). The study tool was a school achievement test to measure the cognitive aspects of reading and listening skills. while the application took 3 weeks, the study concluded that the use of a virtual language lab have a positive influence on reading and listening skills development for the students. The study reached to the following results: - There are differences of statistical significance at the level of ≤ 0.05 among averages scores

of students of the experimental group, and the control group in the in post-application of listening skills test and understand reading test in favor of the experimental group. - There are differences of statistical significance at the level of ≤ 0.05 among averages scores of students of the experimental group in the pre and post application of listening skills test and understand reading test in favor of post application. - The effectiveness of a virtual languages lab on developing English language reading skill for secondary second year students reached (0.87), while its effectiveness on developing English language listening skills for secondary second year reached (.93), indicating the effectiveness of use a virtual language lab in developing English language listening skill for the secondary second students.

These studies and researches have ensured that in acquiring and studying a foreign language, listening comprehension has an important role. In addition, in foreign and second languages in general and in the secondary stage in particular, they display many explanations for weak listening comprehension ability. It is possible to infer the most important features as follows:

1. Learners are poorly equipped with productive listening techniques, skills and activities.
2. While listening is the most commonly used communication skill, in comparison to writing, speaking or reading, it is also the skill in which individuals have had the least training.
3. Exercises and exercises for listening comprehension do not obtain enough time and effort from both teachers and students.
4. Most listening tools (such as audio tapes and computers, CDs presented in textbooks by the Ministry of Education (MOE)) are either not used at all or not used properly in schools, and even when teachers play their students' tapes and CDs, they replay them over and over because of the poor level of listening by students, which makes it pointless to listen to comprehension activity.
5. Many, if not all, teachers consider the waste of time and nonsense of playing audio tapes.

Thus, it can be concluded that virtual language laboratory is an effective E-learning environment as:

- 1- It allows students to participate efficiently to participate in role-play to take liability for their learning.
- 2- In the secondary level, it can be an efficient technique to help improve the understanding and self-confidence of students while developing their language skills.
- 3- It allows low-achievers to improve their listening comprehension skills and acquire language by engaging in learning activities.
- 4- The social interaction that provides learners with opportunities to enhance their cognitive , metacognitive and successful strategies can be featured and gives them opportunities to exchange ideas, increase trust, and learn from their more competent friends (Dayag, 2018).

Conferences Recommendations

- International Conference on learning in the age of digital Tripoli in April 2016 Technology ,some of its recommendations:
- The e-learning is one of the main factors supporting the development processes because it increases the capacity and develop skills and enhance opportunities for creativity and innovation, pushing towards a knowledge society, which its build need to create the structural conditions that support the deployment of e-learning in all aspects and expand and develop continuously to achieve escort for what is happening in the world .Considerable interest should be directed to digital technologies open source as they represent an effective and low-cost alternatives
- The third international conference of the Egyptian e-learning University titled with 'creative education in the digital age'

Research Problem Statement

The proficiency decline in English language listening skills of the first grade of secondary stage students that, from the researcher view, can be eliminated by using the E-environment based on virtual language lab.

Research Questions

This research will try to answer the following questions:

The research main question:

What is the effect of using an E- environment based on virtual language lab to develop English language listening comprehension skills for the first grade of secondary stage students?

The research sub Questions

1- What are the English language listening comprehension skills for the first grade of the secondary stage students?

2- What are the features of the suggested conception of the E-environment based on virtual language lab to develop English language listening comprehension skills for the first grade of secondary stage students?

3- To what extent do the students master the identified skills?

Research Aims

1- Identify the features of an E-environment based on virtual language lab to

develop the English listening comprehension skills for the first grade of the secondary stage students.

2- Identify the English language listening comprehension skills for the first grade of the secondary stage students.

3- Construct the E- environment based on virtual language lab to develop English language listening comprehension skills for the first grade of the secondary stage students.

4- Measure the effect of using the E- environment based on virtual language lab to

develop the English listening comprehension skills for the first grade of the secondary stage students.

Research Importance

- 1-Reduce many of the educational problems facing teachers during the teaching of the English language course.
- 2- Trying to provide developmental vision for the use of language lab in a scientific manner methodology.
- 3- Provide those in charge of the development of the English language curriculum modern ideas to help in the design of language lab
- 4- Urging the creation of special circulating teaches English electronic laboratories supported by networks of the Internet in schools Government (developed and regular) and private alike.
- 5- Raising attention of researchers to disclose the latest methods of teaching my skills to listen and speak the language.

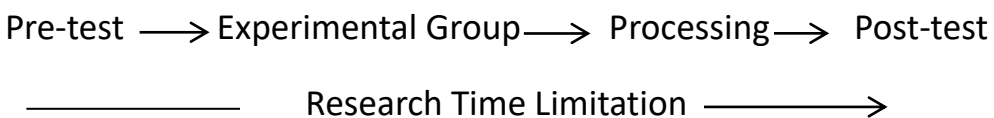
Research Hypotheses

Two hypotheses were tested in this research to compare the pre and post-test means score in listening comprehension skills as follow:

- 1- There is a statistically significant difference between the mean score of the pre-test and the post-test of the research participants in the overall listening comprehension skills in the favor of the post-test.
- 2- There is a statistically significant difference between the mean score of the pre-test and the post-test in each of the listening comprehension sub-skill in the favor of the post-test scores.

Research Methodology Research Design

The experimental quasi methodology will be adopted and used throughout this research in which one experimental group is used and pre/post test to measure the effect of using the E- environment based on virtual language lab to develop the English listening comprehension skills for the first grade of the secondary stage students.



Research Sample

The research sample consists of randomly selected 30 female students of the first grade of El-Sadat Secondary School students in Tanta, Gharbia Governate. They were nominated to formulate experimental treatment with one experimental group with a pre and post-test to identify the effect of using the E- environment based on virtual language lab on some of the listening comprehension skills.

Research Variables

Independent variable: An E- environment based on virtual language lab

Dependent variable: English listening comprehension skills for the first grade of the secondary stage students.

Research Tools

- 1- English listening comprehension test for the first grade of the secondary stage students.
- 2- The experimental processing material: E- environment based on virtual language lab for developing the English speaking and listening skills for Secondary-stage students.

Research Limitations and instruments

The present research is limited to:

- (N=45)1st year female student at the secondary stage.
- Some listening texts from the Egyptian Ministry of Education Curriculum of the 1st grade, secondary stage, the first semester of 2020-2021 and other audio materials.
- Listening comprehension sub- skills appropriate for learners in 1st year secondary stage as follows:

- Literal skills:
 - Identifying intonation and tone
 - Listening for details
 - Sentence comprehension
- Inferential skills
 - Listening for Gist
 - Guessing the meaning of words from context

Research Procedure

To investigate the effect of using the E- environment based on virtual language lab on developing English listening comprehension skills for the first grade of the secondary stage students, the following procedures were followed

1. Review literature and studies related to English listening comprehension for the first grade of the secondary stage students and E- environment based on virtual language laboratory.
2. Identify English listening comprehension skills of the first grade of the secondary stage students then display them to arbitrators and make modification based on their opinions.
3. Prepare the behavioral objectives based on the 1st grade of the secondary stage English curriculum in the view of listening comprehension skills of the secondary stage, then display them to arbitrators and make modification based on their opinions.
4. Prepare the instructional materials based on the behavioral objectives of 1st grade of the secondary stage English curriculum in the view of listening comprehension skills of the secondary stage, then display them to arbitrators and make modification based on their opinions.
5. Identify the features of E- environment based on virtual language lab then display them to arbitrators and make modification based on their opinions.
6. Design an E- environment based on virtual language lab to develop the English listening and speaking skills for the 1st grade of the secondary stage English curriculum in the view of listening comprehension skills of the secondary stage according to ADDIE instructional design.

7. Prepare the pre/post- test of listening comprehension skills of the first grade of the secondary stage students, and then display them to arbitrators and make modification based on their opinions.
8. Choose the research sample randomly from the first grade of El-Sadat secondary School students.
9. Apply a pilot study on an equivalent sample to the research sample to identify the listening comprehension pre/post-test timing and its internal consistency. Cronbach alpha test is employed in this study to measure internal consistency. After running the data using SPSS version 14 for windows, it was found that all the measures possess high reliability standard ranging from 0.713 to 0.956. This is in line with the benchmark that an instrument with coefficient of 0.60 is regarded to have an average reliability while the coefficient of 0.70 and above shows that the instrument has a high reliability standard. Karash, Emad. (2019).
10. Apply the listening comprehension pre-test on the research experimental group.
11. Train the research sample on the usage of the E- environment and the virtual language lab.
12. Apply the instructional materials through the E- environment based on virtual language lab on the experimental group.
13. Apply data derived from the listening comprehension post-test and post –test on the research group statistically.
14. Analyze, interpret and discuss the research results.
15. Present recommendations and suggestions for further researches

Research Definition Listening comprehension

According to Froiland & Mark (2020, P5) defined it: an active and positive mental process that the individual performs by passing the stage of understanding the vocal message and its content to reach the level of interaction with the audible text, including the information and thought it contains, to evaluate it and express opinion on it., and interpret it within the immediate as well as the larger socio-cultural context of the utterance". Thus, listening comprehension involves a great deal of mental activity on the part

of the listener. Froiland & Mark 's definition indicates that listening comprehension involves bottom-up and top-down processing of incoming speech.

Further, Teoh& Loghman (2019, p. 12) defined it as: “The educational outcome expected to be achieved by students who have studied in listening situations, and which expresses the students’ ability to master the skills of audible comprehension.”

Based on the above definitions the present study researcher defines listening comprehension as " An interactive constructive mental process that the listener practices during his interaction with the audible text through a virtual learning environment based on virtual language laboratory in order to understand the meaning of the heard speech, its interpretation, its evaluation and judgment, in light of the objective criteria appropriate to it, and this process is inferred, through the listener's possession of a set of behavioral indicators that express this understanding, and these skills are measured by the standards and tests prepared for this purpose."

Virtual Language Lab

According to the ‘Oxford Advanced Learners Dictionary’, Language laboratories are study rooms equipped with electronic sound-reproduction devices, enabling students to hear model pronunciations of foreign languages and to record and hear their own voices. Most laboratories provide a master control board that permits a teacher to listen to and correct any student individually. The purpose of a language lab is to enable students to actively participate in language learning exercises and get more practice than in a traditional classroom environment.(J. Kavitha,2012:2)

Olaita,(2016) described a Virtual Language Lab as a dynamic set of technical assistive devices, defined by conceptual priorities and implementations, which comprises a support network that helps me and my colleagues achieve college and departmental objectives when operating within our school's geographical and financial constraints. The Virtual Language Lab is a compact, interactive space opened up by learners and teachers individuality and finds expression in multi-dimensional, multi-channel technical applications."

The researcher defines it as "A fluid suite of assistive technological tools, determined by methodological goals and applications that comprise a support system presented as a portable, virtual, digital space that is liberated by the individuality of learners and teachers and finds expression in pluri-dimensional, multi-channel technological applications.

Results and Discussion

A T-test for a paired sample was used to assess the relative change promoted by the implementation of an e-environment based on a virtual language laboratory to test the first hypothesis, i.e. to analyze the differences between the mean score of the students on the pre- and post-application of the software listening comprehension test. The results of the paired sample test comparing the means of the scores of the students' listening comprehension skills before and after the treatment is introduced.

A. Results of Overall Listening Comprehension Skills

Table (1): T-test results comparing the mean of the pre- and post-test scores in the overall listening comprehension skills.

| Listening comprehension skills | Pre Results | | Post Results | | N | df | T-value | Sig. |
|---------------------------------|--------------|-------------|--------------|-------------|-----------|-----------|--------------|-------------|
| | Mean score | SD | Mean score | SD | | | | |
| Overall listening skills | 18.82 | 6.24 | 60.33 | 8.13 | 45 | 44 | 30.55 | 0.05 |

The findings in Table (1) showed that the mean score of the students was in the overall listening comprehension skills in the pre-listening comprehension test (18.82). On the other hand, their mean scores in the post listening comprehension test's overall listening comprehension skills was (60.33). The findings suggested that the higher average is for the listening comprehension test post administration. Therefore, since introducing the proposed program, the overall listening comprehension skills of students have been enhanced. The t-test of the paired sample findings on the difference between the mean scores of the overall listening

comprehension abilities of the pre-and post-application of the listening comprehension test by the students is statistically significant in favor of the post-test at 0.05 levels. This ensures the effect of e-learning environment based on virtual language laboratory in enhancing student's listening comprehension skills.

In terms of overall listening comprehension skills, the e-learning environment based on virtual language laboratory achieved greater competence than conventional teaching. In overall listening comprehension skills, the amount of growth between the pre- and post-test was important. This shift can be seen in the figure (1)

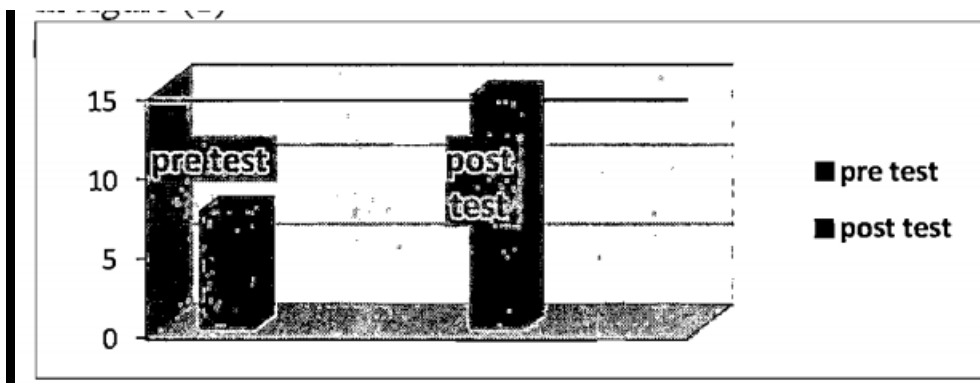


Table (2) compares the pre- and post-mean scores of the students of each listening comprehension sub-skill for more information about each sub-skill of the listening comprehension skill.

B. Results of each Sub-Skills for Listening Comprehension.

Table (2): T-test results of each student's average pre/post-test scores for sub skills for listening comprehension.

| Listening comprehension skills | Pre Results | | Post Results | | Df | T-Value | Sig. |
|--|-------------|------|--------------|------|----|---------|------|
| | Mean score | SD | Mean score | SD | | | |
| Identifying intonation and tone | 1.48 | 1.17 | 5.64 | 2.40 | 44 | 11.09 | 0.05 |
| Listening for details | 2.02 | 1.17 | 4.51 | 0.66 | 44 | 15.47 | 0.05 |
| Sentence comprehension | 2.02 | 1.42 | 7.62 | 2.75 | 44 | 12.67 | 0.05 |
| Listening for gist | 0.84 | 2.00 | 7.46 | 2.62 | 44 | 10.84 | 0.05 |
| Guessing the meaning of words from the context | 0.75 | 0.85 | 7.80 | 2.23 | 44 | 12.83 | 0.05 |

The findings in table (2) showed that the mean score of each listening comprehension sub-skill in the post-test application was improved by the students (5.64,4.51,7.62, 7.46, 7.80, 6.35,6.35,8.26 , 7.06). The findings suggested that the higher means are for the listening comprehension test post administration. Therefore each sub-skill of the listening comprehension skills of the learners was enhanced and developed due to the students' exposure to the proposed training programme. In support of the post-application of the listening comprehension test, T-test results of the students' pre- and post-test mean scores of each listening comprehension sub-skills were significant at 0.05 levels. To sum up, the t-test for paired samples showed that pre/test administration variations are statistically important, so the second hypothesis is accepted.

Research Findings

1. It provided the EFL secondary stage students with a list of suitable listening comprehension skills.
2. At 0.05 amounts, there was a statistically significant difference between the mean scores of the pre- and post-experimental group students using the listening skills test in favour of the post-experimental group students.
3. In the listening comprehension skills competence of the students, there was a statistically significant improvement.

4. The e-learning environment based on virtual language laboratory as a training program for listening comprehension was successful in improving the listening comprehension skills of the students.

Recommendations

Based on the results, the present research recommends the following:

- In order to improve in pre-university settings, particularly in the secondary stage, listening comprehension skills should receive more attention.
- The bulk of students are bad listeners by nature. Therefore through interactive mutual teaching methods, they can receive more effective treatment in EFL classrooms.
- In the Egyptian context, designing different instruments and the thorough recognition of listening comprehension skills should be emphasized in particular.
- Providing enough time in EFL secondary stage for practicing listening comprehension skills through the virtual language laboratory (VLL).
- For the identification of listening problems, formation assessment is important.
- It is a requirement for learning listening comprehension skills to provide classrooms with supplementary and instructional resources.
- When teaching listening skills, suitable teaching aids should be chosen carefully.

References

- Babae, H. (2017). *A comprehensive look into the instruction of listening skill in academic English programs: A case study of two state universities in Iran*. International Journal of Education & Literacy Skills, 5(2), 112-125. doi: 10.7575/aiac.ijels.v.5n.2p.112
- Badea G., Popescu E., Sterbini A., Temperini M. (2019) Integrating Enhanced Peer Assessment Features in Moodle Learning Management System. In: Chang M. et al. (eds) Foundations and Trends in Smart Learning. Lecture Notes in Educational Technology. Springer, Singapore. https://doi.org/10.1007/978-981-13-6908-7_19
- Bingol, M. A. &, Celik, B., & Yildiz, N., & Mart, C. T. (2014). *Listening comprehension difficulties encountered by students in second language learning class*. Journal of Educational and Instructional Studies in the World, 4(4), 1–6.
- Bogusevski, D., Muntean, C. & Muntean, G.M. (2020). Teaching and Learning Physics using 3D virtual learning environment: A case study of combined virtual reality and virtual laboratory in secondary school. Journal of computers in mathematics and science teaching, 39(1), 5-18.
- Candlin, C. N. (2016). *Sociolinguistics and communicative language teaching*. IJL International Journal of Applied Linguistics, 16(1), 37-44
- Dayag, J. (2018). *EFL Virtual Learning Environments: Perception, Concern and Challenges*. Teaching english with technology. Issue No: 4 Page Range: 20-33
- Demie, F. (2017). *English as an additional language and attainment in primary schools in England*. Jurnal article, *Journal of Multilingual and Multicultural Development* 1-14
- Dewi, R.C. (2018). *Utilizing authentic materials on students' listening comprehension: Does it have any influence?* Advances in Language and Literary Studies, 9(1), 70-74.
- Gunduz, N. (2016). *Contributions of e-audiobooks and podcast to EFL listening classes*. Selçuk Üniversitesi edebiyat fakültesi dergisi/ Journal of faculty of letters, 21, 249-259.
- Heradio, R., & Galan, D. (2016). *Virtual and remote labs in education: A bibliometric analysis*. Computers & Education. Volume 98, July 2016, Pages 14-38
- Hogan, T.P. & Adlof, S.M. & Alonzo, C.N. (2014). *On the importance of listening comprehension*. International Journal of Speech-Language Pathology. 16(3), 199–207. <http://doi.org/10.3109/17549507.2014.904441>.

- Horvat,A. & Dobrota,M. & Krsmanovic,M & Cudanov,M. (2015) Student perception of Moodle learning management system: a satisfaction and significance analysis. *Interactive Learning Environments*, 23:4, 515-527, DOI: 10.1080/10494820.2013.788033
- Horzum, M. B. (2017). *Interaction, Structure, Social Presence, and Satisfaction in Online Learning*. *Eurasia Journal of Mathematics, Science and Technology Education*, 11(3), 505-512. <https://doi.org/10.12973/eurasia.2017.1324a>
- Horzum,M. & Kaymak,Z. & Gungoren,O.(2015). *Structural Equation Modeling Towards Online Learning Readiness, Academic Motivations, and Perceived Learning*. *Educational Sciences: Theory & Practice: Vol. 15 No. 3* (2015)
- Hussein, E.T. (2016). *The Effectiveness of Using Blackboard in Improving the English Listening and Speaking Skills of the Female Students at the University of Hail*. *Advances in Social Sciences Research Journal*, 3(12) 81-93.
- Mohamed, M. (2018). *Using audiobooks for developing listening comprehension among Saudi EFL preparatory year students*. *Journal of Language Teaching and Research*, 9(1), 64-73. doi:10.17507/jltr.0901.08
- Mroz,A.(2015). *The development of second language critical thinking in a virtual language learning environment: A process-oriented mixed-method study*. *CALICO Journal* , Vol. 32, No. 3, *Qualitative Research in CALL* (2015), pp. 528-553
- Mohamed, M. (2018). *Using audiobooks for developing listening comprehension among Saudi EFL preparatory year students*. *Journal of Language Teaching and Research*, 9(1), 64-73. doi:10.17507/jltr.0901.08
- Mroz,A.(2015). *The development of second language critical thinking in a virtual language learning environment: A process-oriented mixed-method study*. *CALICO Journal* , Vol. 32, No. 3, *Qualitative Research in CALL* (2015), pp. 528-553
- Yulisa, D. (2018). *Learning to listen: Listening strategies and listening comprehension of Islamic senior high school students*. *Edukasi: Journal Pendidikan dan Pengajaran* 5(1), 22-30.