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**Improving EFL Preparatory Stage Students'
Listening Skills and Motivation through Computer-
Based Interactive Multimedia Program**

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Abstract

This research aimed to study the effect of the Computer-Based Interactive Multimedia (CBIMM) program on improving EFL preparatory stage students' listening skills and motivation. The participants of this research were (72) second-year preparatory stage students at Shajarat Al-Dur Preparatory School for Girls, Mansoura City, Dakahlia Governorate, Egypt. The research adopted the quasi-experimental design using two groups: an experimental group (n = 36), and a control one (n =36). To collect data, the researcher used three instruments: 1) an EFL listening skills checklist, 2) an EFL listening skills test, and 3) a motivation scale. The researcher taught both groups: the experimental group was taught through the CBIMM program, while the control group was taught through the regular method of teaching. Research results revealed that there were statistically significant differences between the mean score of the experimental group and the control group students in the EFL listening test and the motivation scale in favor of the experimental group. Moreover, the effect size of the CBIMM program was found to be high. As a result, this research suggested integrating CBIMM programs into the processes of teaching and learning.

Keywords: *Interactive Multimedia, Computer-Based Interactive Multimedia Program, Listening Skills, Motivation, Preparatory Stage Students, EFL.*

Introduction

Learning English in today's globalized world is very essential. The ability of learners to understand and analyze listening activities and be motivated to engage in the educational process is necessary for preparatory-stage students. As a result, there is always a need to discover new educational trends to motivate students to properly engage in listening tasks.

Technology associated with computers has been considered one of the new trends that can increase students' active participation in the learning process, through engaging in meaningful listening tasks and motivational activities.

Listening is essential for individuals to maintain successful communication. It serves as the primary means of learning any language, the conduit for linguistic thoughts in the brain, and the starting point for developing all other skills (Renukadevi, 2014).

To understand a spoken language, listening is the most crucial skill to be developed (Ahmadi, 2016). As an ancient proverb said, "*We have been given two ears but one single mouth, so that we may listen more and talk less*" (Rynders, 1999, p.13).

Despite the importance of listening skills, it has been ignored for a long time in EFL classrooms and EFL teachers' professional development courses. Which leads to most students facing many problems in listening classes. According to Abu Hatab (2010), EFL students struggle because they do not have enough opportunities to listen to the English language as it is spoken by native speakers. As a result, students frequently struggle to understand native speakers when they speak quickly and without pausing.

According to Hamouda (2013), the causes of students' difficulties with listening comprehension can be divided into three categories: a) problems with listening texts (unfamiliar words, difficult grammar, limited vocabulary, and long spoken text), b) problems with tasks and activities (quality of the recording, lack of visual support, inability to get repeated), and c) problems with listeners themselves (anxious, less motivated, fear of making mistakes).

Therefore, teachers should increase students' desire to listen and be delighted about their learning by creating a supportive learning atmosphere and giving engaging learning opportunities. This will be achieved by using the CBIMM program.

Interactive multimedia was characterized by Vaughan (2011) as a blend of text, art, sound, animation, and video that is presented to students by using a computer or other electronic and digital manipulation tools. Through the use of these media, the learning process is conducted dynamically and interactively (p.1).

The use of multimedia, according to Ariani and Haryanto (2010), has a significant influence on students' learning processes, including: 1) creating an enjoyable and attractive learning atmosphere, 2) boosting students' motivation, 3) allowing students to learn at anytime and anywhere, 4) promoting students' learning whether independently or in groups.

Topală (2014) emphasized that implementing multimedia technology into the learning process enhances the educational process by: a) Increasing contact between professors and students. b) Helping students understand the content being taught. c) Overcoming time and size constraints.

Therefore, this research designed a computer-based interactive multimedia program to enhance listening skills and motivation for EFL second year-preparatory stage students.

Review of Literature and Related Studies

Listening Skills

Listening is a crucial skill for people to maintain successful communication. It is the capacity of an individual to comprehend spoken language. The act of listening entails more than just hearing sounds; it involves recognizing, comprehending, and interpreting spoken languages.

The Nature of Listening

Listening is regarded as the first skill to be acquired in any mother language. Listening is not just sitting quietly while others speak it is an active process in which learners accurately receive and analyze information during a conversation.

Latifi, Mobalegh, and Mohammadi (2011) described listening as a complex and multidimensional skill that begins with an awareness of sounds and images moves on to the recognition and memory of the audio-visual stimuli, and concludes with the interpretation of the meaning. Sever (2011) stated that listening is a key method of communication and learning process that requires the listener to pay attention to the speakers and grasp the information to understand what the speakers are saying.

Rost (2011) stated that listening is "the deliberate act of hearing, comprehending, and retaining aural symbols." In addition, he stated that constructing, producing, and negotiating meanings are all parts of the process of comprehending what the speaker is saying. Moreover, he noted that listening is an internal cognitive process that transforms notions in the listener's mind and activates prior knowledge.

Importance of Listening Skills

Listening is the cornerstone of learning both first and foreign languages. Listening is regarded as the primary skill among the four language skills —listening, speaking, reading, and writing. Moulesong (2010) stated that listening skills enable people to comprehend what is being said. Kurita (2012) argued that the ability to use listening as a learning tool is the main distinction between more and less successful learners.

Ergin and Birol (2014) argued that listening skill plays a significant part in the acquisition of all other language skills. Jafari and Hashim (2015) stressed that listening is a route for understandable input and more than fifty percent (50%) of the time that students spend learning a foreign language is

spent in listening. Ulum (2015) claimed that if we do not care to learn how to listen we would never learn how to use language in oral communication.

Therefore, listening is a vital skill for effective learning, communication, language acquisition, and developing other language skills.

Listening Comprehension Processes

Vandergrift (1997) categorizes listening comprehension processes as; Bottom-up Processes, Top-down Processes, and Interactive Processes.

Bottom-up Process

Vandergrift (1997) stated that bottom-up processing is used by listeners who associate meaning to texts based on their linguistic features. They employ their long-term memory schemata, which are collections of grammatical or syntactic rules. In this process, listeners must understand the meaning of individual words in the audio texts before merging these smaller words into bigger ones.

Top-down Process

On the contrary, listeners who often employ schematic knowledge effectively to analyze and interpret the texts are using top-down processing (Vandergrift, 1997). For understanding, they are using information from their memories or an interpretation of the text's meaning. According to Graham (2003), top-down processing enables students to create expectations for the text's meaning based on their real-world schematic knowledge. It implies anticipating, assuming, elaborating, and visualizing.

Interactive Process

The interactive process takes place when listeners use both bottom-up and top-down processing. Gilakjani and Ahmadi (2011) defined interactive process as the fusion of bottom-up and top-down processing that is seen as a more successful strategy than its predecessor. According to Graham (2017), more professional listeners employ a wider variety of flexible strategies and are more likely to strategically employ both top-down and bottom-up processing.

Listening Comprehension Sub-Skills

Many different attempts have been made to categorize listening comprehension in terms of sub-skill taxonomies. Many listening taxonomies have been created by researchers.

According to Vandergrift and Goh (2012); and Goh (2014), the listening process depends on six basic skills: 1) listening for supporting details, 2) listening for specific information, 3) listening for global understanding, 4) listening for main ideas, 5) listening and infer, 6) listening and predict.

Solak and Erdem (2016) listed some listening sub-skills that are most frequently used: a) listening for gist, b) listening for specific information, c) listening in detail, d) listening to infer, e) listening to questions and responding, and f) listening to descriptions.

Listening Strategies

O'Malley and Chamot (1990) declared that there are three different types of listening comprehension strategies: cognitive, metacognitive, and socio-affective strategies. Depending on the skill level of the students, these strategies may differ.

Metacognitive Strategies

O'Malley and Chamot (1990); and Vandergrift (1997) defined metacognitive strategies as mental processes for controlling language acquisition that include planning, observing, and assessing one's comprehension. They involve analyzing concepts related to the learning process, such as evaluating understanding and paying attention. According to Ratebi and Amirian (2013), these strategies call for planning, monitoring, and assessing the learning activity (p. 141).

Cognitive Strategies

Vandergrift (2003) defined cognitive strategies as mental actions that involve employing language to complete a task, including applying specific techniques for learning tasks like justification and deduction. According to Huy (2015, p. 25), cognitive strategies were employed to assist learners in learning new information and comprehending the linguistic system. For instance, students can infer a word's meaning from its context and relate new knowledge to existing one.

Socio-Affective Strategies

According to Vandergrift (2003), listeners utilize socio-affective strategies to collaborate with others, assess their understanding, and lessen their stress. They involve actions like asking clarifying questions, working together, reducing anxiety, and encouraging oneself. Wilson (2003) argued that students' interactions with other speakers and their attitudes toward learning are related to their use of socio-affective strategies.

Listening Challenges

Even though listening skill is a vital skill for learning the English language, EFL students frequently struggle with it. Golchi (2012, p. 115) argued that poor listening capabilities are caused by a variety of problems, including inadequate listening instruction, ineffective listening techniques, immature teaching methodologies, and a lack of students' vocabulary.

Ulum (2015) stated that students struggle to comprehend the listening text related to; unfamiliar accents, the ability to understand the meanings of words that are not spoken clearly, and recall words or sentences that they have recently heard. Asmawati (2017) stated three elements affect students' listening: the listening material, the listener factor, and the physical environment.

In the Egyptian context, listening is difficult for students because preparatory schools in Egypt allow students to learn English five sessions per week. According to the Ministry of Education (MOE), course sequence mandates that teachers complete their courses within a particular amount of time, however, this is insufficient to impart to learners the expected knowledge or skills to be obtained (EIMeshad, 2012).

Even though the Student's Book includes activities for speaking, listening, reading, writing, grammar, vocabulary, and pronunciation, teachers often focus on the tested skills; they often say "We teach what we test" In this system listening skills have been ignored (El-Tawila, 2009)

Studies Related to Listening Skills

Many researchers have attempted to enhance the listening skills of EFL students by utilizing various techniques, strategies, and methods. Here are some of them.

Elewah (2023) studied the impact of the triangle listening strategy on improving EFL Listening Comprehension Skills for students at the preparation level. The study sample was Sixty-four first-year preparation stage students from Kafr Salmoon Preparation School in El Beheira Governorate, Egypt. The study tools were; An EFL listening comprehension checklist, an EFL listening comprehension test, and a teacher's guide. The results showed that employing the triangle listening strategy was beneficial in enhancing EFL listening comprehension skills in English as a foreign language in preliminary stage students.

Othman (2023) investigated the effects of YouTube Videos on improving listening skills in Sudanese secondary school Students. The study included 47 students from Sharq Al Neel province in Khartoum, Sudan's capital. The data was collected by a questionnaire that was made up of five axes to investigate the influence of watching YouTube on listening skills. The findings demonstrated the great effect of watching YouTube videos created by native speakers in improving listening skills for EFL secondary stage students.

Mustapha (2023) studied the effect of employing online task-based learning in improving EFL listening skills for secondary school students in

Nigeria. Fifty (50) Nigerian students were chosen to participate in the study. The instrument of the study was an EFL listening skills test. According to the findings, adopting online task-based learning increased students' EFL secondary-stage students' listening skills.

Jafar (2023) evaluated the impact of the dictogloss technique on improving EFL listening comprehension and writing skills, as well as the motivation among secondary school students in Nigeria. The study included two entire classes of second-year secondary school students in Nigeria (one experimental and one control). The research instruments included an EFL listening comprehension test, an EFL writing skills test, and two motivation scales for developing listening comprehension and writing skills. The study's findings demonstrated that the dictogloss technique was beneficial in enhancing EFL listening comprehension, EFL writing skills, and participant motivation.

Fares (2021) examined the impact of a flipped learning strategy on improving third-year English majors' oral communication and higher-order thinking skills. Participants of the study were (60) third-year English major students, Faculty of Education, Minia University. The study's tools included a needs assessment questionnaire, pre-post speaking test, pre-post listening test, and higher order thinking skills tests, as well as a speaking rubric. The study's findings demonstrated that the flipped learning strategy proved to be successful in fostering both oral communication and higher-order thinking skills.

Akl (2020) aimed to improve preparatory school students' EFL oral communication skills via the use of some enriching video clips. The participants of the study were one hundred first-year preparatory students from Omar Shaheen Preparatory School, El Behera Governorate, Egypt. The instrument of the study was a test of oral communication skills. The study's conclusions showed that incorporating those educational video clips while teaching English as a foreign language had a substantial impact on the first-year preparatory stage students' oral communication skills development.

Eventually, listening skills may be enjoyable or boring to students. Although some students find these communication skills interesting, others find them difficult and boring; this relates to their level of motivation. Motivation is an essential aspect in assisting learners in learning any language.

Motivation

Motivation is the urge to engage in and participate in the learning process. It is the key to learners' academic success and what allows for effective learning. Motivated learners always possess an enthusiastic attitude towards learning.

The Nature of Motivation

Motivation is the reason behind the success or failure of any task. It is a psychological factor that directs students' behavior. Hong and Ganapathy (2017) defined motivation as "a process that cannot be directly observed but may be inferred from actions and behavior". Dörnyei (2018, p.1) described motivation as the human behavior that guides and explains the cause for choosing a certain action, as well as the effort invested to achieve the main goal of this behavior.

The Importance of Motivation

The importance of motivation in learning any language cannot be denied. All aspects of human behavior are motivated, which helps to explain why people act the way they do. Alizadeh (2016) claimed that motivation gives students a goal and a path to pursue. As a result, it is crucial for raising students' motivation towards language learning. Dörnyei (2018) stated that a student who is motivated in a classroom would act appropriately, make good decisions, and make many efforts to learn a language.

Because motivation is the prominent factor that supports language learning and acquisition, EFL teachers must cultivate it in their students. Thus, teachers and educators must apply different types of motivation to raise students' motivation.

Types of Motivation

Increasing students' motivation to achieve the desired goals or to complete different tasks is a crucial element. Therefore, teachers should apply different types of motivation in the classroom. These types are classified into many categories, which are addressed in the following lines.

Integrative and instrumental motivation

Integrative motivation, as described by Gilakjani, Leong, and Sabouri (2012), is the desire to acquire a language to integrate into the target language community as well as for personal growth and cultural enrichment. Ismail, Ahmadi, and Gilakjani (2012) defined interactive motivation as the desire to learn a language to participate in a speech community. On the other hand, Ismail, Ahmadi, and Gilakjani (2012) stated that students with

instrumental motivation study a language to achieve practical goals like gaining a wage bonus or getting accepted into a university.

Intrinsic and extrinsic motivation

Lai (2011) described intrinsic motivation as a drive that is fueled by pleasure, interest, or personal gratification. Intrinsic motivation, as defined by Ismail, Ahmadi, and Gilakjani (2012), is an action that is motivated by internal rewards. Usher (2012) defined intrinsic motivation as “the need to accomplish or achieve something that raises a genuine sense of desire or fulfillment”. As opposed to that, extrinsic motivation, according to McGeown, Norgate, and Warhurst (2012), is the term that is used to describe the outside forces that might motivate learners. Scores, awards, adulation, or a drive to outperform others are some examples of extrinsic motivation.

Factors Affecting Motivation

Motivational factors are an essential component of any school. Understanding the appropriate factors can aid in increasing overall student achievement.

Jafari (2013) stated that students' motivation towards learning a language is influenced by their peers since they are more motivated to learn a language if their friends do. Additionally, learners' prior learning experiences have an impact on their current learning results.

Drew and Sørheim (2016) stated that the teaching style, resources, and methods used by teachers have a significant impact on students' motivation to learn a language. They also noted that a variety of activities, encouragement, direction, and constructive criticism are required to raise students' motivation.

Studies Related to Motivation

Numerous studies on teaching English as a foreign language aim to boost students' motivation to learn the language by utilizing various methods and approaches. Here are some of these studies:

Amalia, Inayati, and Marini (2023) evaluated the influence of gamification on enhancing students' motivation towards learning English. The study's participants were 36 third-year preparatory-stage students, and the instruments used were a questionnaire, an interview, and observation data. The study's findings shed light on the benefits of gamification in raising students' level of motivation towards learning English.

Sitepu et al., (2023) investigated the impact of song lyrics on seventh-grade students' motivation toward learning vocabulary in Indonesia. The study's participants were 20 Indonesian seventh-grade students at SMP

Citra Bangsa. The study's instruments included observations, questionnaires, and documentation. The study found that song lyrics had a significant effect on raising seventh-grade students' motivation and vocabulary achievement.

Makhlouf (2020) employed online collaboration to boost students' motivation for language learning, as well as improve their reading and writing skills in the EFL preparation stage. The participants of the study were (64) second-year preparatory school students from Somoha Al Azhar Institute, Alexandria, Egypt. The instruments of the study were; a reading and writing skills checklist, a pre-post reading and writing skills test, a motivation scale, and a reading and writing skills rubric. The findings of the study indicated that online collaboration had a significant effect in improving the students' reading and writing skills as well as increasing their motivation towards learning.

Abdallah and El-Naggar (2020) examined the effect of utilizing a task-based learning technique for improving the writing skills and motivation of students in the second-year preparation stage. The participants of the study were (80) EFL second-year preparatory stage students from Dr. Ahmed Shalaby Preparatory School, Sharkia Governorate, Egypt. The EFL writing skills test and a writing motivation scale served as the study's instruments. The findings of the study showed that the task-based learning technique was successful in raising the students' motivation and improving their EFL writing skills.

The Nature of Multimedia

Multimedia is a type that allows users to integrate different types of text, graphics, images, animations, videos, and music into one platform. Multimedia language teaching is a vital and practical tool for involving students in EFL language acquisition. Its ultimate purpose is to stimulate their enthusiasm and interest in learning.

Gunawardhana and Palaniappan (2016) defined multimedia as modern digital communication by combining both hardware and software technology. Kumar and Ramani (2017) stated that interactive multimedia is the interaction between the user and the program or medium that denotes a reciprocal interaction where the user responds to the display programs. In this situation, the students must be actively involved in computer-assisted learning.

Basic Elements of Interactive Multimedia and its Characteristics

Numerous scholars contend that text, graphics, animation, sound, and video are the basic elements of multimedia such as: Zhen (2016);

Pavithra, Aathilingam and Prakash (2018); and Banerjee (2019). These elements have positive effects on how well students learn the subject matter.

- **Text:** is the basis of any multimedia program. That presents the greatest amount of data. There are several font styles, and sizes, for the information to be shown.
- **Graphics:** This term refers to still images, like charts, diagrams, and photographs.
- **Animation:** It is a rapid display of a series of images in 2-D or 3-D to create the illusion of movement.
- **Sound:** related to any audio that is recorded and created by computers, including voice, music, and other sounds.
- **Video:** It sends visual pictures of still or moving objects and is the viewable portion of television transmissions.

There are various characteristics that allow interactive multimedia to be an efficient teaching technology. We should be aware of these characteristics to better comprehend the notion of interactive multimedia and its components.

Adeniyi, Olowoyeye, and Onuoha (2016) stated that the most important characteristic of interactive multimedia is to be under the users' control. This control allows users to learn according to their needs. Shinde (2018) asserts that interactive multimedia has the following characteristics: created for a specific target group, has particular goals, is under learner control, self- instructional technique, prompts feedback and reinforcement, increases and sustains learners' interest

Idrisova, Alikhadzhiev, and Alisultanova (2021) categorized the multimedia characteristics as follows 1) interactive: it gives the user greater control and flexibility over how the material is presented. 2) In real time: Audio, motion video, and animation are all forms of multimedia information that are strongly tied to time. 3) Editing prowess: Digital compression and decompression technology are the foundation of multimedia. 4) Information accessibility: Depending on their needs, and interests, users can use the information in many ways.

Role of Interactive Multimedia in Improving Listening Skills and Motivation

a) Listening and Interactive Multimedia

In traditional classroom listening tasks, students often listen to the teacher while reading a text aloud, and then students engage in completing the task. With multimedia, students may practice listening both alone and in groups by using audio and video texts. After listening to the audio scripts,

students save them on their personal computers. Students can also download a range of audio to listen to while they are not in the classroom.

Kirana (2016) stated that listening sessions will be more enjoyable for the students when they adopt the audio-visual method which improves the teaching-learning process and makes it easier to meet and even exceed teaching goals.

Soleimani and Mirsayafi (2019) pointed out that there is a strong positive correlation between the use of multimedia resources and the development of students' listening skills. This relationship is related to the nature of interactive multimedia that presents the lesson in a fun, delightful, and exciting way. According to Gunbas and Gozukucuk (2020), visual learning environments based on multimedia that include listening texts greatly increase students' listening comprehension compared to those that do not.

b) Motivation and Interactive Multimedia

Due to the characteristics of interactive multimedia that draw learners' attention and make the educational process more engaging and entertaining, integrating it into the teaching and learning process has a positive influence on enhancing EFL learners' motivation towards the language learning process.

Ambarini, Setyaji, and Zahraini (2018) noted that the use of interactive multimedia in the learning process has been shown to have a variety of advantages; one of these advantages is that it makes the classroom more engaging as well as motivates students to learn. Alhawad, Bedri, and Alhafian (2018) revealed that multimedia has a substantial influence on promoting students' motivation and innovation.

Cárdenas Gómez (2019) stressed that multimedia enhances language learning and boosts the motivation of both teachers and students by giving them chances to practice communication skills for the target language in real-world situations.

Interactive Multimedia Benefits and Challenges

First: Benefits of Interactive Multimedia

Interactive multimedia is a combination of text, audio, video, animations, images, sound, and other elements that are used to establish a reliable line of communication between the user and the computer. It refers to the use of technology in the educational field to improve the learning process.

Mukherjee (2018) revealed that multimedia encompasses a variety of technological devices, including video cameras, instructional games,

computer software, and audio components. These tools enable teachers and students to work together to actively accomplish the learning objectives. The incorporation of such media encourages student engagement and promotes active learning.

Saputri, Rukayah, and Indriayu (2018) stressed that interactive multimedia has a substantial influence on the student's way of learning, acquiring knowledge, and altering that information. Interactive multimedia, according to Rachmadtullah, Zulela, and Sumantri (2019), enables students to manage learning activities, determine the chain of learning activities, and set the pace of learning according to their requirements.

Lin and Wu (2020) added that interactive multimedia has a great influence on students including; increasing their vocabulary acquisition, utilizing interesting video clips, making connections to their daily lives, and promoting students' motivation towards language learning.

Second: Challenges of Interactive Multimedia

To address the shortcomings of conventional education, multimedia shatters the traditional model—the "blackboard + chalk" model—and develops new, contemporary techniques. The learning material is transformed into an engaging one that is vibrant, intriguing, visual, auditory, and active. However, there are some challenges with using multimedia in the classroom.

Zhen (2016) emphasized that multimedia has some challenges. These challenges include the complete reliance on multimedia in some English classrooms, neglect of the role of teachers, a lack of technological expertise among teachers, a lack of classroom interaction, and more focus on this technology rather than the students.

The drawbacks of multimedia, according to Pavithra, Aathilingam, and Prakash (2018), are as follows: 1) it requires a certain amount of electricity, which may not be available in some places. 2) Its attractive forms may confuse the students to focus on the main point of the lesson. 3) The design of multimedia software is more expensive than other types. 4) It consumes the user's time and effort because it requires continuous, prolonged practice to be perfect. 5) Its equipment needs to be handled carefully.

Aljazzaf (2020) stated that integrating multimedia into the teaching and learning process has major limitations including, multimedia software being very costly and expensive, teachers lacking the necessary technological skills, and the design of multimedia requiring a lot of time.

Studies Related to the Multimedia

Tahir (2023) examined the impact of an English for Specific Purposes Web-based program on improving listening comprehension and speaking for EFL Iraqi Police Academy Cadets as well as their motivation to learn the English language. Sixty Iraqi Police Academy Cadets in their third year were chosen to participate in the study. The study used an EFL speaking and listening test as well as a questionnaire-based motivation scale. The study results suggested that the ESP online education program significantly influenced the growth of EFL speaking and listening skills as well as their motivation to learn the language.

Mohamed (2023) used a proposed program based on Web 3.0 tools to strengthen EFL listening and writing skills for first-year secondary-stage students at Al-Azhar institutions. 50 first-year secondary students from Tema AL-Azhar Secondary Institute for Boys participated in the study. The study instruments were; a writing scoring rubric, an EFL listening and writing skills test, and an EFL listening and writing skills checklist. The study's findings provided support for the usefulness of the Web 3.0 program in enhancing the EFL writing and listening skills of Al-Azhar secondary school students.

Elkhabery, Aly, and Abdel Fatah (2023) investigated the impact of an authentic digital dialogues program on improving listening skills for third-year English major students. The participants of the study were (60) third-year English major students at the Faculty of Education, Beni-Suef University. The instruments of the study include; a listening skills checklist and a pre-post listening test. The results demonstrated that adopting the program based on authentic digital dialogues program helps to improve third-year English major students' listening skills at the Faculty of Education.

Sayed (2023) attempted to determine how well gamification-based electronic programs would enhance vocabulary acquisition and motivation for elementary school students. The study sample included 50 sixth-grade elementary stage students selected randomly from Balat Primary School, New Valley, Egypt. The instruments of the study were; a pre-post vocabulary achievement test and a pre-post motivation scale. The results of the study indicated that gamification-based electronic program has a great effect on improving elementary-stage students' vocabulary acquisition and motivation.

Ahmad and Saif (2021) looked into how an electronic software program can improve Jordanian elementary school students' speaking and

listening skills. The sample was made up of (50) sixth-grade elementary school students from Jordan's ASamiah International School. Pre-post achievement tests were used as the study's instrument. The study showed that using computer software has a great effect in improving elementary school students' speaking and listening skills.

Rassul and Wali (2020) aimed to find out the effect of multimedia on enhancing the conversational listening sub-skills for EFL second-year University students in Iraq. The participants of the study were (40) second-year university students in Iraq. The instrument of the study was pre-post conversational listening sub-skills tests. The study findings revealed that the multimedia technique was successful in enhancing EFL learners' conversational listening sub-skills.

Al-Otaibi (2019) aimed to investigate the effect of utilizing multimedia technology in improving preparatory school students' listening skills in Saudi. The participants of the study were (72) second-year preparatory female students in Taif city. A listening accomplishment test was used as the study's tool. The study's findings showed that multimedia is effective in helping preparatory students strengthen their listening skills.

In summary, interactive multimedia has demonstrated efficacy in increasing students' willingness to engage in listening practice. Because of this, the researcher designed a computer-based interactive multimedia program as an instructional method in the classroom to help EFL preparatory stage students become better listeners and become more motivated to learn.

Pilot Study

To provide evidence for the problem of the present research, the researcher conducted a pilot study to determine second-year preparatory stage students' actual level of listening skills and their motivation towards learning. A pilot study was conducted on a sample of 15 students from Al-Ayoubeya Preparatory School for Girls, Al-Mansoura, Al-Dakahlia Governorate, Egypt. The students were asked to answer some listening questions to measure some listening sub-skills such as word recognition skills and comprehension skills. Table (1) reveals the results.

Table 1: Results of the EFL Listening Skills Pilot Study Test

Main Skills of the Listening Test	Skill Score	Max. Score	Min. Score	Mean Score	SD	Percentage
Word Recognition Skills	2	1	0	0.8	0.41	40 %
Comprehension Skills	6	3	2	2.33	0.49	38.8%
Total	8	4	2	3.13	0.9	39.1%

Table (1) shows that the percentage of the sample scores on the EFL listening skills pilot study test was 39.1%. This means that there are numerous challenges in EFL second-year preparatory school students' teaching/learning which affect their listening skills. Therefore, it is essential to investigate this problem and find a proper remedy for it to develop second-year preparatory school students' listening and motivation.

Statement of the Problem

Based on the review of literature and the pilot study results, the problem of the research can be stated as follows: EFL second-year preparatory school students lack some listening sub-skills such as; word recognition skills and comprehension skills. In addition, they have a low level of motivation towards learning English. Thus, the current research suggested that using a computer-based interactive multimedia program, as one of the new instructional technologies, might help to improve the EFL listening skills of preparatory stage students and their motivation towards learning.

Research Questions

This research attempted to answer the following questions:

- 1) What are the components of a computer-based interactive multimedia program that improve EFL preparatory stage listening skills and their motivation towards learning?
- 2) What is the impact of using the computer-based interactive multimedia program on improving EFL preparatory stage students' listening skills?
- 3) What is the impact of using the computer-based interactive multimedia program on improving EFL preparatory stage students' motivation towards learning?
- 4) What is the relationship between improving preparatory stage students' listening skills and their motivation towards the learning process?

Hypotheses

This research attempted to verify the following hypotheses:

1. There are no statistically significant differences at the ($\alpha \leq 0.05$) level between the mean scores of the experimental group and that of

-
-
- the control group on the post-administration of the listening skills test"
2. There are no statistically significant differences at the ($\alpha \leq 0.05$) level between the mean scores of the experimental group on the pre and post-administration of the EFL listening skills test and the total score
 3. There are no statistically significant differences at the ($\alpha \leq 0.05$) level between the mean scores of the experimental group and that of the control group on the post-administration of the EFL motivation scale".
 4. There are no statistically significant differences at the ($\alpha \leq 0.05$) level between the mean scores of the experimental group on the pre and post-administration of the motivation scale.

Purpose

The purpose of this research was to determine to what extent using a Computer-based Interactive Multimedia Program is effective in improving EFL students' listening skills and their motivation towards learning.

Significance

The present research would contribute to:

1. Incorporate new innovative methods for improving EFL preparatory school students' listening skills through the use of educational technology.
2. Giving students new experiences to improve their listening skills as well as increase students' motivation towards the learning process.
3. Providing teachers and curriculum designers with a list of the listening skills that are necessary for EFL preparatory stage students.
4. Providing exemplary interactive multimedia to improve EFL preparatory stage students' listening skills.

Methodology

The Participants

The participants of the current research were second-year preparatory school pupils. 72 pupils were selected from Shajarat Al-Dur Preparatory School for Girls, Mansoura City, Dakahlia Governorate. The participants were divided into two groups: experimental (n=36) and control (n=36). The pupils were between the ages of 14 and 15. Regarding their education and level of English, the participants formed a nearly homogenous group.

Design

The current research adopted the quasi-experimental design to apply the CBIMM Program. The experimental group was taught through the proposed CBIMM Program to improve their listening skills and their motivation towards learning. The control group continued to study according to the regular method set out in the teacher's guide by the Ministry of Education.

Instruments and Materials

The present research applied the following instruments, designed by the researcher:

1. An EFL listening skills checklist to identify the most crucial listening skills to be improved for EFL second-year preparatory stage pupils.
2. An EFL listening skills test to measure pupils' levels of mastering listening skills.
3. An EFL motivation scale to measure pupils' motivation level towards learning.
4. A reflective log to identify pupils' opinions about the program.
5. Material Developed in the Research: A Computer-Based Interactive Multimedia Program.

Definition of terms:

Interactive Multimedia

For this research, Interactive Multimedia is defined as "the integration of many forms of texts, images, audios, animated videos, songs, games and activities into one application whose purpose is to make the educational process more enjoyable and exciting to improve EFL preparatory school students' listening and motivation towards learning.

Listening Skills

This research defined listening skills as "The ability of learners to understand and analyze the spoken language as a result of using an interactive learning program".

Motivation

The researcher defined motivation as "EFL preparatory stage students' anticipated interest and a keen desire to participate and interact in the educational process while using the computer-based interactive multimedia program".

Results and Statistical Analysis

The results of the research are statistically analyzed in terms of its hypotheses and they are discussed in the light of the theoretical background and related studies. Research results were reported as follows:

Verifying the First Hypothesis

To test the first hypothesis of the research, which states that: "There are no statistically significant differences at the ($\alpha \leq 0.05$) level between the mean scores of the experimental group and that of the control group on the post-administration of the listening skills test"

The "t" test was used for the two independent groups to compare the mean score and the total score in the post-administration, as well as the effect size was calculated by using the Eta square equation, findings are shown in Table 2.

Table 2
Comparing the Performance of the Experimental and Control Groups on the Post-Administration of the EFL Listening Skills Test

Skills	Groups	N	M	SD	t	df	Sign.	η^2
Word Recognition skills	Exp.	36	4.7778	.76012	11.713	70	0.01	0.66
	Control	36	2.6944	.74907				
Comprehension skills	Exp.	36	13.5556	1.02663	22.955	70	0.01	0.88
	Control	36	8.5556	.80868				
Total	Exp.	36	18.3333	1.30931	23.472	70	0.01	0.89
	Control	36	11.2500	1.25071				

Table 2 shows that the t-values were (11.713 and 22.955, respectively) and they were statistically significant at the 0.01 level in favor of the experimental group, which means that there is a growth in the listening skills among the experimental group students' compared to their peers in the control group after receiving the experimental treatment.

It also indicated that all " η^2 " values for the effect size of the treatment were greater than 0.14 *, which means that the CBIMM was effective in improving listening skills, as the treatment contributed to the total variance of listening skills by 89%. Thus, the first null hypothesis was rejected and the following directed alternative hypothesis was accepted: "There are statistically significant differences at the ($\alpha = 0.01$) level between the mean scores of the experimental group and of the control group on the post-administration of the listening skills test in favor of the experimental group".

Verifying the Second Hypothesis

To test the second hypothesis, which states that: "There are no statistically significant differences at the ($\alpha \leq 0.05$) level between the mean scores of the experimental group on the pre and post-administration of the EFL listening skills test and the total score."

The "t" test for dependent samples was used to assess the difference between the experimental group students' mean score in the EFL listening

skills test before and after implementing the CBIMM program, and the effect size was estimated using Cohen's equation; the findings are displayed in Table 3.

Table 3
Comparing the Performance of the Experimental Group on the Pre-Post Administration of the EFL Listening Skills Test (n = 36)

Skills	Test	N	M	SD	t	df	Sign.	d
Word recognition skills	Pre	36	1.9167	.84092	15.258	35	0.01	2.54
	Post	36	4.7778	.76012				
Comprehension skills	Pre	36	7.2500	.93732	31.147	35	0.01	5.19
	Post	36	13.5556	1.02663				
Total	Pre	36	9.1667	.94112	35.293	35	0.01	5.88
	Post	36	18.3333	1.30931				

Results in Table 3 reveal that the mean score in the post-administration of the listening skills test was greater than that of the pre-administration in all EFL listening skills. And the t- values of listening skills were (15.258 and 31.147 respectively) and they were statistically significant at the 0.01 level for the listening skills (word recognition skills and comprehension skills). In addition, all differences were in favor of the post-administration of the EFL listening skills test.

It also revealed that the "d" values for the effect size of the treatment were greater than 0.8*, which means that the program was effective in improving EFL listening skills. Then, the second null hypothesis was rejected and the following alternative hypothesis was accepted: There are statistically significant differences at the ($\alpha = 0.01$) level between the mean scores of the experimental group on the pre and post-administration of the EFL listening skills test in favor of the post-administration.

Verifying the Third Hypothesis

To test the third hypothesis, which states that: " There are no statistically significant differences at the ($\alpha \leq 0.05$) level between the mean scores of the experimental group and that of the control group on the post-administration of the EFL motivation scale".

The "t" test was used to compare the mean scores of the two independent groups, and the Eta-square equation was employed to compute the effect size. Table 4 summarizes the findings.

Table 4
Comparing the Level of the Control and Experimental Groups on the Post-Administration of the EFL Motivation Scale

Groups	N	M	SD	t	df	Sign.	η^2
Exp.	36	88.0833	3.18366	38.514	70	0.01	0.955
Control	36	58.0000	3.43927				

Table 4 shows that the "t" value for the difference in mean scores between the experimental and control groups on the motivation scale was statistically significant at the 0.01 level in favor of the experimental group, indicating that students in the experimental group are more motivated than their peers in the control group after receiving the experimental treatment. This demonstrates that the CBIMM program contributed to increase the level of motivation of the experimental group.

It is also reported that the " η^2 " value for the effect size of the treatment was greater than 0.14*, which means that the CBIMM program has a great effect on improving motivation, as the treatment contributed to the total variance of motivation by 95.5%.

Thus, the third null hypothesis was rejected and the following guided alternative hypothesis was accepted: There are statistically significant differences at the ($\alpha = 0.01$) level between the mean scores of the experimental group and that of the control group on the post-administration of the EFL motivation scale in favor of the experimental group.

Verifying the Fourth Hypothesis

To test the fourth hypothesis of the research, which states that: There are no statistically significant differences at the ($\alpha \leq 0.05$) level between the mean scores of the experimental group on the pre and post-administration of the motivation scale.

The t-test for dependent samples was used to compare the difference in the mean score of the experimental group students on the motivation scale before and after implementing the CBIMM program, as well as to calculate the effect size of the two groups using Cohen's equation. Table 5 reveals the results.

Table 5
Comparing the Level of the Experimental Group on the Pre- Post Administration of the EFL Motivation Scale (N=36)

Test	N	M	SD	t	df	Sign.	d
Pre	36	57.3333	3.83219	40.105	35	0.01	6.684
Post	36	88.0833	3.18366				

Table 5 shows that the "t" value was statistically significant at the 0.01 level; moreover, the difference was in favor of the post-administration of the motivation scale, indicating that the experimental group's motivation level increased after receiving the CBIMM program.

It also shows that the "d" value for the effect size of the experimental treatment was larger than 0.8 *, indicating that the experimental treatment is successful in improving students' motivation. Then, the fourth null hypothesis was rejected and the following alternative hypothesis was accepted:

There are statistically significant differences at the ($\alpha = 0.01$) level between the mean scores of the experimental group on the pre and post-administration of the motivation scale in favor of the post-administration.

Discussion of the Results

a) Results Related to the Experimental and Control Groups' Performance on the EFL Listening Skills Posttest

According to the statistical analysis of the EFL listening skills hypothesis, the experimental group students outperformed the control group students in all of the EFL listening skills, and the t-values were highly significant at the 0.01 level. Furthermore, the posttest results of the experimental group were significantly better than the pretest results, and the effect size was great (89%). These results show that the computer-based interactive multimedia program was more effective at increasing participants' capacity to listen better and improve their EFL listening skills.

The CBIMM program guided students through the following features: listening to native speakers, watching interactive videos, playing exciting games and practicing many activities after listening to audio. These results were consistent with previous studies which proved the significant important of interactive multimedia program in improving listening skills such as: Elkhbery, Aly, & Abdel Fatah (2023); Mohamed (2023); Tahir (2023); Rassul & Wali (2020); and Al-Otaibi (2019).

b) Results Related to the Experimental and Control Groups' Performance on the Post-Administration of the Motivation Scale

The statistical analysis of the motivation hypothesis indicated that the level of motivation for the experimental group participants was higher on the motivation scale than the control group, and the t-value was significant at the 0.01 level.

Furthermore, the results of the motivation scale of the experimental group's posttest were significantly higher than the pretest results, and the effect size was large (95.5%). These results indicated that the computer-

based interactive multimedia program was helpful in increasing the participants' level of motivation, as they appeared to take pleasure in the process of learning by using this program.

The experimental group participants were interested, completely involved in the listening tasks, and exercised self-control in the majority of cases. This is because students felt they truly understood what they were expected to complete which gave them the impression that they were in control of the activities. Furthermore, the results demonstrated that the students thoroughly enjoyed their time studying through a CBIMM program. These results were consistent with previous studies which proved the efficacy of the CBIMM program in raising students' motivation such as: Tahir (2023); and Sayed (2023).

Conclusion

Based on the statistical analysis of the listening skills and motivation hypotheses, it was clear that the experimental group students outperformed the control group students in the listening test and motivation scale, and the t-values were highly significant at 0.01 level. Besides, the experimental group's post-administration results were much better than the pre-administration results. These findings indicate that computer-based interactive multimedia program proved to be more effective in improving the participants' listening skills and raising their motivational level.

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