

Using Artificial Intelligence tools for developing EFL Students' Listening skills and reducing their Listening Anxiety

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Abstract

This study is an attempt to examine the effectiveness of using the Artificial Intelligence Tools to develop listening skills and reducing listening anxiety among EFL student's teachers. Sixty-seven from second -year prospective teachers enrolled in the English Section at the Faculty of Education, Benha University were randomly allocated into two groups: an experimental group [N=33] and a control group [N=34]. Instruments of the study comprised an EFL listening skills test and listening anxiety scale. A listening test and a listening anxiety scale both were administered before and after the treatment to the study participants. For 12 sessions, members in the experimental group were accomplished a training based on Artificial intelligence tools to develop their EFL listening skills and reduce their listening anxiety while those in the control group received their regular instruction. Results of the study showed that the experimental group students outperformed their control group peers; they showed high levels of listening skills as well as reducing their listening anxiety aspects compared to their control peers. Consequently, it could be concluded that the usage of artificial intelligence tools has a significant effect on second -year students at the English section, Faculty of Education. It was recommended to use the artificial intelligence tools into listening instruction programs.

Key words: *Artificial intelligence tools, EFL listening skills, listening anxiety, EFL students' Teachers.*

1. Introduction

Listening is a vital skill that plays a key role in how we communicate. It is essential for everyday life, helping us enjoy things, learn new things, and gather important information.

Whether we are having fun, studying, or working, listening is crucial. Listening is often mistaken for simply hearing, but it's a much more complex skill. It involves actively paying attention to what someone is saying, understanding their message, and responding thoughtfully. Listening is a cornerstone of effective communication, essential for building strong relationships, learning, and solving problems. It is especially important for language learners as it helps them communicate with others and improve their language skills.

Listening skills play a crucial role in communication and academic success, as highlighted in various research papers. Developing active listening abilities is essential for effective communication and improving academic performance. In today's world, characterized by challenges, the significance of listening skills is more pronounced than ever, as they are fundamental life skills critical for personal, academic, and professional success. It serves as the foundation for effective communication, facilitating the comprehension of spoken language across different contexts and has a great role in the enhancement of various language skills like speaking, reading, and writing (Rost,2018).

The act of listening requires complex cognitive processes that extend beyond simple auditory reception, including components such as attention, discrimination, comprehension, and interpretation. Thus, the cultivation of strong listening abilities is essential for English as a Foreign Language (EFL) learners to attain communicative proficiency and excel in academic and professional environments (Vandergrift, 2019). Acquiring strong listening skills enables individuals to access information, enhance empathy, critical thinking, and overall academic performance, while also fostering better communication and understanding among people.

Listening anxiety is a prevalent challenge faced by many EFL (English as a Foreign Language) students (Erlina,et.al.,2016). It refers to the fear or apprehension experienced when expected to perform in listening tasks. The ephemeral nature of spoken language, unlike written text, makes it difficult to process and comprehend. Factors such as speed, accent, and clarity of speech can significantly impact listening comprehension and induce anxiety (Golzadeh and Moiiinvaziri,2017). Unlike reading, listening lacks visual support, making it more challenging to understand the message. The pressure to perform well in listening assessments can heighten anxiety levels (Maaty,2018).

Artificial Intelligence (AI) demonstrates great potential in enhancing listening skills in English as a Foreign Language (EFL). Studies have shown that AI-based systems have had a positive impact on optimizing language skills, translation, assessment, and student satisfaction. Various AI approaches such as machine learning, neural networks, and natural language processing have been explored in EFL settings, underscoring the importance of detailed methodological descriptions in future research. The integration of artificial intelligence into education has become increasingly prevalent (Fitria, 2021). The AI systems enable individuals to learn with the assistance of educational tools like bots. The evolving landscape of education necessitates adaptation to technological advancements to enhance the quality of education, particularly in the realm of information and communication technology. The utilization of AI has made it possible to deliver modern digital learning content, transforming dense textbooks into more digitized formats (Akbarani, 2023).

Implementing AI tools like chatbots and podcasting has been found effective in improving EFL listening comprehension skills among students, encouraging engagement and autonomy

in language learning. Integrating AI technologies into EFL classrooms can address gaps in traditional pedagogies, offering innovative ways to develop listening proficiency and overall communicative competence, especially in academic English contexts (Men et al.,2022)

Correspondingly, EFL instructors should seek teaching and learning through digital technologies that enhance listening skills and reducing their students' listening anxiety in their classes. Therefore, Artificial intelligence tools (LINE Bot and Talk pal bot) will be used in this study.

1.1. Context of the Problem

Out of the researcher's experience, she found that most second-year English section students struggle with their EFL listening abilities. Students ' listening in EFL is fraught with difficulties. They misunderstand terms they are familiar with and forget what they hear. They are unable to comprehend what is supposed to be spoken. Additionally, they are unable to mentally represent words they hear and are unable to comprehend word phonetic variations (reduction, assimilation, and elision). Furthermore, second-year English section students are able to regulate speech rate but not the pace at which speakers adopt various accents.

Furthermore, a significant proportion of second-year English section students at Benha University's Faculty of Education suffer from listening anxiety. In an interview with the researcher, the aspiring teachers stated that they were experiencing anxiety for a variety of reasons. Furthermore, a significant proportion of second-year English section students at Benha University's Faculty of Education suffer from listening anxiety. During the interview, the researcher detected that the prospective teachers had a variety of causes for their worry.

English language programs do not provide students in Egypt with opportunities to practice EFL listening skills in interactive settings. In order to improve EFL listening abilities among students at various instructional stages, numerous researchers undertook numerous experiments. Former academics like Abdellateef (2018) created a podcasting-based curriculum to improve the listening comprehension skills of secondary school students. In order to improve the listening and higher order thinking skills of third-year basic education students, Ali (2021) designed a program based on the SAVI learning paradigm. Abdel Bar (2022) recently employed instructional scaffolding in a hybrid learning environment to help primary stage students improve their EFL critical listening abilities.

To document the problem of the study, the researcher conducted a pilot study on thirty students of second year registered in the English language section, Faculty of Education, Benha University. The pilot study comprised an EFL listening skills test adopted from Atwa (2023) (see appendix A) and listening anxiety scale adopted from Tahsildar, & Yusoff, (2014) (see appendix B). The pilot study was conducted through the first semester of the 2023/2024 academic year. First, the findings of the pilot study showed that the majority of the participants (85%) have a low level of EFL listening skills, as most of second year students at the faculty of Education lack listening skills. Moreover, they cannot understand the intended message of what is heard and focused only on the surface meaning of the audio text. Also, when they face difficult words, they stop listening to the conversation and deliberate the meaning of the unknown words some time, thus they slip the subsequent section of the conversation.

Second, the listening anxiety scale aimed at detecting students who have apprehension of listening. Its dimensions

were rated on a 5-point Likert scale alternating from Strongly disagree (1) to Strongly agree (5). After analyzing the students' responses on the scale items. It has been indicated that the majority of the participants (77%) have marked as have a listening anxiety. So the present study is an attempt to use a program based on the artificial intelligence tools (Talk pal and LINE Bots) to develop second year students' listening and reducing listening anxiety.

1.2. Statement of the problem

Despite the prominence of EFL listening skills, the second year students enrolled in English language section, Faculty of Education, Benha University, lack these skills. Consequently, they cannot prevent understand the recorded materials and respond to questions about the material. Consequently, the present study tries to aid them developing their EFL listening and reducing their listening anxiety through using the artificial intelligence tools- based program.

1.3. Questions of the Study

In an endeavor to overcome this problem, the researcher of the present study tried to answer the following questions:

- (a) What are the EFL listening skills required for the second – year Students' teachers?
- (b) What is the effectiveness of using the Artificial Intelligence tools for developing second-year students' teachers' EFL listening skills?
- (d) What is the effectiveness of the program based on artificial intelligence tools for reducing second -year prospective teachers' listening anxiety?

1.4. Hypotheses of the Study:

In the light of the review of literature and related studies, the following three hypotheses are formulated:

- 1- There is a statistically significant difference between the mean score of the experimental and control groups of the overall EFL listening skills and sub-skills on the post-administration of EFL listening skills test, in favour of the experimental group.
- 2- There is a statistically significant difference between the mean score of the experimental and control groups of the overall listening anxiety on the post- administration of listening anxiety scale, in favour of the control group
- 3- There is a statistically significant negative correlational relationship between experimental group students' scores in the post-assessment of the EFL listening skills and their scores in the listening anxiety scale.

1.5 Delimitations of the Study:

The present study was restricted to:

1. Sixty seven second year, English section students, Faculty of Education at Benha University.
2. Some EFL listening skills required for second year, English section students at Faculty of Education.
3. The second semester of the academic year 2023/2024.

1.6 Instruments and Materials:

The researcher prepared and used the following instruments and materials:

1. An EFL listening skills checklist
2. An EFL listening tests (pre and post)
3. A listening Anxiety scale (Adopted from, Tahsildar, & Yusoff, 2014).
4. A program based on artificial intelligence tools (AI Bots)

1.7 Significance of the study

The present study is substantial for:

1. **EFL Prospective teachers:** it aids them to enhance some EFL listening skills and reducing their listening anxiety.
2. **EFL instructors:** it affords them a program based on the artificial intelligence tools (AI Bots) to develop their students' EFL listening skills and reducing their listening anxiety.
3. **Curriculum planners:** it sheds light on the artificial intelligence tools (AI Bots) as an authentic and proficient instructional tools.

1.8 Definition of Terms

EFL listening Skills

The ability of second-year English section students to listen to and understand spoken language of various utterances is operationally described as listening skills.

Listening Anxiety

Listening anxiety is operationally defined as second year prospective teachers': The emotional state of trepidation, worry, or fear felt during or before listening exercises is referred to as listening anxiety. It can seriously impair one's capacity to efficiently understand and process auditory information.

Artificial Intelligence tools (AL Ts):

The current study defines artificial intelligence tools as the capacity of aspiring teachers to employ intelligent tutoring systems, adaptive learning systems, and AI-driven language learning applications to improve their listening skills and lessen their listening anxiety.

2. Literature Review

Listening is a cornerstone of English language proficiency. It underpins effective communication, enabling learners to understand spoken language in various contexts. Research underscores its significance in developing other language skills

such as speaking, reading, and writing (Rost, 2018). Buck (2001) defined listening as an active process in which meaning is created by applying prior knowledge to the incoming sound, which encompasses both linguistic and non-linguistic information. As highlighted by Vandergrift (2019), listening involves complex cognitive processes that go beyond mere auditory perception, encompassing attention, discrimination, comprehension, and interpretation. Consequently, developing robust listening skills is crucial for EFL learners to achieve communicative competence and succeed in academic and professional settings.

Along with speaking, reading, and writing, listening is a vital skill that is utilized in everyday communication. Being the most common communication skill and the first one people learn or acquire makes it essential (Hadijah, & Shalawati, 2016). A vital component of communication is listening. According to Zahra (2015), listening is the process by which people concentrate on a specific area of sensory information, interpret passages, and connect what they hear to what they already know. According to Rost (2013), listening is a method of duplicating spoken shapes instantly through oral invention. Listeners actively process the information in addition to taking it in order to fully understand the message. Listeners actively process the information in addition to taking it in order to fully understand the message. The ability of students to discuss and write about what they have heard is the goal of listening comprehension instruction. Moreover, our ability to combine new information from what we just heard with our prior knowledge and experience is what creates the "mental model" that is created as a representation of a spoken message. linguistic information.

According to Fathi and Hamidizadeh (2019), listening is a difficult task because people hear meaningless sounds when they listen to a foreign language. Students are understanding

some basics like phonemes and pitch more and more. Learners have reached the level of recognition, comprehension, and upkeep after they are outfitted with the phonological, syntactic, and semantic codes of the language. As listeners are tasked with forming the entire message, understanding its meaning, and connecting the novel information with what they already know or perceive, listening is said to be a creative activity.

There are many scholars who aimed to enhance EFL listening skills. Akdamar and Sütçü, (2021) aimed to examine how language learners' listening skills and attitudes regarding the usage of digital storytelling are affected by digital storytelling. The study included 64 secondary school students in Adana, Turkey. The study used a pretest-posttest control group in a quasi-experimental approach. The research's instruments for gathering data were the learners' attitude scale and the listening comprehension accomplishment test. The findings showed that participants' improvements in listening abilities were statistically significant, and the test group performed better in listening activities than the control group did.

Tai and Chen (2021) conducted a study to examine how mobile virtual reality (MVR) can aid in the development of EFL listening comprehension. Seventy-two Taiwanese seventh graders were divided into experimental and control groups at random. The MVR gamers used a head-mounted display that displayed mobile graphics to play the language learning VR software. The findings showed that the MVR reduced anxiety in apprentices by providing them with access to stimulating, engaging, and immersive virtual settings where they could conduct real-world learning tasks. This helped apprentices improve their listening comprehension.

Recently, Li (2023) examined the application of mobile-assisted language learning (MALL) to the improvement of listening skills in English as a foreign language (EFL) learners

The results indicated that a thorough meta-analysis of the effect indicating that MALL is a more successful approach than traditional techniques for developing listening skills in EFL learners. Different moderator effects of educational levels, software types, control conditions, intervention settings, assessed outcome types, and intervention durations were reported in relation to moderators for the total effect.

Foreign language anxiety (FLA) is thought to include L2 listening anxiety. FLA is defined as the uneasiness experienced by learners who are not proficient language users when a task or circumstance requires them to utilize L2 (MacIntyre & Gardner, 1994). It is asserted that FLA exists in all aspects of L2, including the four abilities (Horwitz et al., 1986; Vogely, 1999). When execution L2 listening accomplishments, listening anxiety is ubiquitous and is mostly caused by factors like intelligibility issues, perceived task difficulty, task unfamiliarity, and comprehension failure dread (Elkhafaifi, 2005).

A study by Fathi, Derakhshan, and Torabi (2020) examined the impact of listening strategy training on Iranian English as a foreign language (EFL) learners' listening comprehension skills, listening anxiety, and listening self-efficacy. The study involved 52 English major students from two Iranian universities, with an experimental group and a control group. Results showed that teaching listening strategies improved students' listening comprehension and decreased anxiety, but not significantly increased their L2 listening self-efficacy.

Thus, in light of reviewing studies that dealt with the listening skills and the listening anxiety, it can be determined that, these skills positively affect students' performance in EFL. Moreover, it is very essential for developing EFL students' performance in listening skills and reducing their listening anxiety. Therefore, the present study researcher designed a

program based on the artificial intelligence tools for developing listening skills and reducing listening anxiety among EFL second year students.

The term artificial intelligence or it can be shortened as AI was coined by John McCarthy in a very known Dartmouth College workshop, held in the summer of 1956 (Benko & Sik Lányi, 2011). Artificial intelligence is a feature of computer science that treaties with the modeling of intelligent machines that work and behave like humans. In philosophy, artificial intelligence includes the branch of mathematics which is presented by media as a substitute for the human intellect. It is considered as a branch of mathematics which would help to unravel intellectual problems as many branches helping (Chen, Chen, & Lin, 2020).

Artificial Intelligence (AI) is about creating machines that can think like humans. In the future, technology could handle many of a teacher's routine tasks, like grading papers and taking attendance. This would free up teachers to focus on inspiring and guiding students. While computers are great at following rules and doing repetitive work, they can't replace the creativity and understanding that teachers bring to the classroom. In fact, AI itself was invented by humans! (Fitria,2021). AI systems can provide immediate feedback on listening exercises, helping students identify their strengths and areas needing improvement. This feedback is essential for developing effective listening strategies (Wu & Wang, 2021).

AI can personalize EFL listening practice sessions by tailoring lessons to individual students' needs, providing real-time feedback, and enhancing efficiency. AI technologies like Chat GPT and intelligent personal tutors can offer personalized learning experiences by adapting content to students' proficiency levels and learning styles (Ghoneim, & Elghotmy, 2021). These AI tools can engage students in dynamic

interactions, offering immediate feedback to boost proficiency and confidence during listening practice sessions The integration of AI in EFL education not only enhances listening skills but also identifies knowledge gaps, learning styles, and facilitates continuous professional development, ultimately improving the quality of teacher education and maximizing learning outcomes for digital learners. By leveraging AI technologies in EFL listening instruction, educators can create engaging and interactive learning environments that cater to diverse student needs while upholding ethical considerations and data privacy (Yuanchao,et.al.,2013).

AI-powered communication technologies can be easily integrated into organizations' digital repertoires. One of such applications is AI-enabled social chatbots, commonly found on corporations' Facebook pages, mobile apps, and official websites. Once summoned by visitors for one-on-one conversations, these chatbots can listen to user input, search databases for potential answers, formulate responses to address inquiries, and direct them to external resources. These chatbots, as Men et al. (2022) argued, embody organizational listening's key features of "scale, delegation, and mediation" Chatbots play an essential role in collecting user inputs when stakeholders initiate conversations and ask questions in the online interface. Less understood and carrying more potential for the management of strategic communication is AI-enabled social chatbots' response process, the response process is an essential component of organizational listening.

The development of chatbots plays a crucial role in enhancing listening skills, especially in educational settings. Chatbots like Skillbot and interactive Science Chatbot have been designed to facilitate learning and skill development (Islam,et.al.,2022). These chatbots utilize various technologies such as Natural Language Processing, sentiment analysis, and

interactive features like quizzes and activities to engage users and improve their listening and comprehension abilities (Tyutyunnik, et.al.,2022). By providing a platform for self-paced learning, offering multimedia content, and enabling continuous assessment, chatbots like Skillbot and Science Chatbot contribute significantly to the enhancement of listening skills among users, making learning more accessible and engaging, particularly for uneducated and unskilled populations in both educational and vocational contexts.

The increasing use of AI chatbot technology has influenced the way modern ICT-based teaching and learning is designed and implemented. An educational chatbot aimed at promoting the study of computer science. A few chatbots have been created and designed for language learning. CLIVE is an intelligent chatbot for conversational language practice capable of language switching among any of the world's major languages. Gengobot is a chatbot-based grammar dictionary application for Japanese language learning that gives explanations and meanings in Japanese, Indonesian, and English (Wu & Wang, 2021). Mondly and Andy English Bot offer several possible responses so that learners can choose the most appropriate one. The CSIEC system generates communicative responses according to user input, dialogue context, user and personality knowledge, common-sense knowledge, and inference knowledge

As a useful artificial intelligence tool for English Foreign Language (EFL), bots help the students to improve language skills, especially listening skill. Chatbots have distinctive merits than other audios concerning its content, as the authentic listening material permits learners to listen to repository of real-life speaking materials of native speakers that allow scholars to study at their own time and pace. Tyutyunnik, et.al., (2022) discussed in their research the development, training,

improvement, and sentiment analysis of the Skillbot Chatbot. Data was collected from the UK government website using tools like GPT2 model. The project was tested and evaluated using technologies like Natural Language Processing, Vader model, TextBlob, Streamlit, Rasa, AI, and machine learning. The findings provide insights for future research and improvements in Skillbot's functionality.

Reviewing previous studies on the artificial intelligence tools have confirmed that this treatment is necessary for enhancing EFL listening skills among students and reducing their listening anxiety. Thus, the present study researcher will use some artificial intelligence tools (LINE Bot and Talk pal) chatbots for developing EFL listening skills and reducing listening anxiety among second year English language section students.

Thus, in light of reviewing studies that dealt with listening skills and listening anxiety, it can be concluded that it has become a major target for foreign language instruction. Thus, developing prospective teachers' listening skills enables learners to become more mindful communicators and reducing their foreign language anxiety in general and in listening in particular

3- Method

This section discusses the research methodology employed to assess the efficacy of artificial intelligence tools in enhancing EFL listening skills and alleviating listening anxiety among second-year students in the English language department at Benha University's Faculty of Education. The methodology encompasses the following components:

1) Participants

The participants involved in the present study consisted of 67 second-year students specializing in the English language department at the Faculty of Education, Benha University, during the second semester of the academic year 2023-2024. These participants were divided into two distinct groups, namely an experimental group (N=33) and a control group (N=34) as shown in table (1). Notably, the experimental group was provided with instruction using artificial intelligence tools, while the control group received education through traditional methods.

Table (1) The participants of the study

Group	Control	Experimental	Total
Pre	34	33	67
Post	34	33	67

Homogeneity of the groups:

Before the experiment, the experimental and control groups were similar in that they comprised students from similar socioeconomic backgrounds and roughly the same age range (20–22 years old). Prior initiating the treatment, the experimental group and the control group performed the EFL listening skills test and the listening anxiety scale to make sure that their scores on the listening anxiety and EFL listening skills measures were the same. The two groups' means, standard deviations, and "t" values were calculated.

Table (2): t-value and Level of Significance in the Pre-administration of EFL listening skills test between the experimental group and the control group

Skills	Group	No.	Mean	Std. Deviation	t-value	DF	A Sig
1	Control	34	.8235	.99911	0.329	65	0.281
	Experimental	33	.9091	1.12815			
2	Control	34	1.1176	1.40916	0.283	65	0.609
	Experimental	33	1.2121	1.31714			
3	Control	34	1.0588	1.12657	0.340	65	0.315
	Experimental	33	.9697	1.01504			
4	Control	34	.8824	1.12181	0.537	65	0.794
	Experimental	33	1.0303	1.13150			
5	Control	34	1.0000	1.12815	0.110	65	0.974
	Experimental	33	1.0303	1.13150			
6	Control	34	1.0588	1.22947	0.928	65	0.563
	Experimental	33	1.3333	1.19024			
7	Control	34	1.4706	1.23669	0.614	65	0.210
	Experimental	33	1.2727	1.39805			
8	Control	34	1.3529	1.82379	0.504	65	0.423
	Experimental	33	1.1515	1.41689			
9	Control	34	1.5882	1.07640	1.549	65	0.053

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Skills	Group	No.	Mean	Std. Deviation	t-value	DF	A Sig
	Experimental	33	1.1515	1.22783			
10	Control	34	1.7059	1.56727	1.227	65	0.404
	Experimental	33	1.2727	1.30558			
All Over Test	Experimental	33	12.2941	3.94300	1.145	65	0.209
	Control	34	11.3333	2.81366			

Table (2) indicates that there is no significant difference between the mean scores of the experimental and control groups on the overall EFL listening skills and its sub-skills, where "t" value for the overall skills not statistically significant at the level of (0.05); in each main and sub-skill, as well as in the test as a whole, which indicates the equivalence of the two groups in EFL listening skills as a whole and each sub-skill before the implementation of the treatment.

Also, to make sure that both groups were equal in listening anxiety, a listening anxiety scale was administered to the two groups before applying the treatment. Mean, standard deviation and "t" value of the two groups were calculated.

Table (3): t-value and Level of Significance in the Pre-administration of the listening anxiety scale between the experimental group and the control group

Item	Group	No.	Mean	Std. Deviation	t-value	DF	α Sig
Listening Anxiety	Control	34	76.5588	3.98627	2.034	65	0.261
	Experimental	33	78.8182	5.05875			

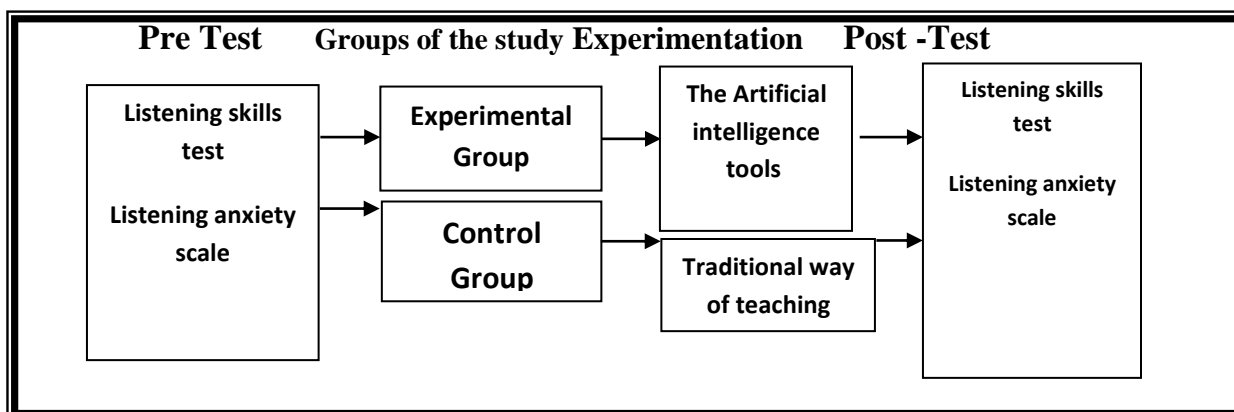
The data presented in Tables (2) indicate that there is no statistically significant difference between the mean scores of the experimental and control groups in terms of pre-treatment listening anxiety, with a 't' value of (2.034) suggesting insignificance at the (0.05) significance level. The analysis of the EFL listening skills test and the pre-treatment listening anxiety scale did not show any significant differences between the groups, as shown in Tables (2) and (3). This confirms that both groups had similar levels of listening skills and anxiety before the experimental intervention.

Table (2) demonstrate that there is no statistically significant discrepancy between the mean scores of the experimental and control groups in terms of pre-treatment listening anxiety, with a 't' value of (2.034) indicating insignificance at the (0.05) level. This suggests that the two groups had comparable levels of listening anxiety before the treatment.

2) Design of the study

The current inquiry primarily utilizes both quantitative and qualitative methodologies. The study's framework is quasi-experimental in nature, involving the manipulation of the independent variable to assess its influence on the dependent variable (Torchin, 2003:29). A descriptive methodology was employed to identify key EFL listening skills relevant to second-year students in the English section of the Faculty of Education at Benha University, drawing upon a comprehensive review of previous literature. The study used a pre-post control group design, with assessments carried out before and after the intervention. Moreover, a quasi-experimental approach was taken to investigate the impacts of utilizing artificial intelligence tools in improving EFL listening skills and reducing listening anxiety among second-year students in the English language section of the Faculty of Education at Benha University.

Figure (1): The experimental design of the study



3) Instruments of the study

The objective of this research was to utilize a program that utilizes artificial intelligence tools to enhance the development of English as a Foreign Language (EFL) listening skills and to alleviate listening anxiety in second-year students enrolled in the English language section at the Faculty of Education, Benha University. The subsequent tools and resources were specifically crafted by the researcher of this study to fulfill the research objectives.

- A. An EFL listening skills checklist.
- B. An EFL pre-post listening skills test.
- C. A listening anxiety scale (Adopted from Tahsildar, & Yusoff, 2014)
- D. Artificial intelligence - based program

A-The EFL listening Skills Checklist

The researcher initially explored the most recent literature on EFL listening skill (Al-Jurf,2021; Goh,2014; Graham,2017; Harmer,2004; Rost, 2011 and Vandergrift, 2002).Following this examination, a checklist for EFL listening was created, encompassing 13 distinct skills. Subsequently, a group of experts evaluated this checklist to determine the relevance of the chosen EFL listening skills for second-year English section students at the Faculty of Education. As a result of this assessment, 3 skills were removed as they duplicated others previously mentioned, resulting in the final version of the EFL listening skills checklist containing ten core skills (Appendix A).

B- EFL listening Skills Test :(pre-post test)

Upon completion of the literature review and finalization of the checklist, the researcher has formulated the EFL listening skills Test. Comprising three sections, the test features lengthy conversations accompanied by questions designed to evaluate

the listening skills of second-year students. A total of forty marks were allocated across ten EFL listening skills. Detailed instructions were presented to participants, as outlined in Appendix (B) for the EFL listening test.

-Validity of EFL listening test:

A-Face validity of the listening test:

The test was presented to a group of jury members specializing in EFL curricula and instruction (10) to assess its face validity (refer to appendix D). They were tasked with articulating their viewpoints on specific aspects: the lucidity of the test directions, appropriateness of the test for the students' proficiency level, and the clarity of the test queries. The jury members conveyed that the test items were relevant to the skills being evaluated. The adequacy of the test in alignment with the academic level of the students was highlighted. Additionally, feedback was provided on the straightforwardness of the test directions and queries, as well as the representation of the skills being targeted.

B-The internal consistency validity of the EFL listening test:

To assess the internal consistency validity of the EFL listening test, the researcher employed the SPSS V.25 software to calculate the internal consistency. Utilizing this tool, the Pearson Correlation coefficient between students' scores in individual skills and their overall test score was determined. The results of the correlation coefficient and the associated significance level are detailed in the subsequent table.

Table (4) Values of the Correlational Validity Coefficients for each skill and the total score targeted by listening test.

Item	Correlation	Item	Correlation	Item	Correlation	Item	Correlation
1	0.685**	2	0.466*	3	0.757**	4	0.422**
5	0.599**	6	0.533**	7	0.724**	8	0.658**
9	0.485**	10	0.517**				

*. Correlation is significant at the 0.05 level & **. Correlation is significant at the 0.01 level

As per the data presented in the table, the correlation coefficient between each skill assessed in the test and the overall score of the assessment demonstrated statistical significance at levels of (0.05) and (0.01). This suggests that the EFL listening test served as a reliable tool in terms of its internal reliability, with all test items aligning effectively with its intended objectives.

- Reliability of the EFL listening Skills Test:

The study employed two techniques to approximate the reliability of the EFL listening skills test:

(A) Test-Retest Method:

A random sample of thirty second-year English language section students from Benha University's Faculty of Education were given the test. Two weeks later, the same group was given the test once more. Table (5) displays the Pearson correlation coefficient for each test item across the two administrations as well as the test total

Table(5):Reliability of the EFL listening test

Skills	Skill 1	Skill 2	Skill 3	Skill 4	Skill 5	All Over The Test
Correlation	0.802**	0.905**	0.789**	0.813**	0.794**	
Skills	Skill 6	Skill 7	Skill 8	Skill 9	Skill 10	All Over The Test
Correlation	0.629**	0.736**	0.844**	0.923**	0.865**	

** . Correlation is significant at the 0.01 level

As a result, the correlation coefficients have high values and are all significant at (0.01), as the preceding table illustrates. This indicates a very high level of test reliability.

b. Cronbach's Alpha Method

The EFL listening skills test's reliability was also evaluated using Cronbach's alpha. The EFL listening skills test has an alpha coefficient of 0.858. because "it is appropriate [with alpha coefficient] to have a reliability coefficient of 0.70 or higher." The value shown here is acceptable, indicating that the EFL listening test is reliable and has internal consistency (Wells & Wollack, 2003, p. 4).

-Scoring and Piloting the EFL listening Test:

The EFL listening test comprises of three lengthy talks and twenty multiple-choice questions (MCQs), each worth two marks for the right answer. As a result, the test had a final score of 40 marks. At the conclusion of the first semester of the 2023–2024 academic year, the test was given to thirty students who were not research participants in order to assess the test's duration, appropriateness for the students' level, and clarity of instructions. The test took place for a total of thirty-five minutes.

B – The EFL Listening Anxiety Scale:

-Aim and description of the EFL listening anxiety scale:

The listening anxiety of second-year English section students at Benha University, Egypt's Faculty of Education was measured using the Tahsildar and Yusoff (2014) scale of listening anxiety (see appendix C). It served as a pre-post scale, meaning it was used both before and after the program had been conducted

Every item is designed to elicit responses from aspiring teachers along a continuum based on the five-point Likert scale. Each of the scale's twenty items has five possible answers. Strongly disagree, disagree, agree, I don't know, and disagree were the available alternatives. The responses were given a score of 1, 2, 3, 4, and 5. Students were to rate their level of listing anxiety using this scale.

The Validity of the listening anxiety Scale:

-Face validity of the listening anxiety Scale:

Ten members of the Jury were given the scale in order to assess its validity, item clarity, and appropriateness for the level and background of the students. Particular substances that are unrelated to students have undergone modifications. The validity of the scale items was reaffirmed by the jury panel.

- Internal consistency validity of the listening anxiety Scale:

By computing the consistency between the total score of each scale item and the scale's overall total score, the listening anxiety scale's internal consistency was ascertained. Utilizing the Pearson Correlation Coefficient, it was calculated. Table (7) displays the correlation coefficient and significance level in the following manner:

Table (7): The Correlation between the score of each item in the listening anxiety scale and the total score of the whole scale

Items of the Listening Anxiety scale							
Item	Correlation	Item	Correlation	Item	Correlation	Item	Correlation
1	0.425*	2	0.654**	3	0.554**	4	0.788**
5	0.452*	6	0.784**	7	0.822**	8	0.755**
9	0.758**	10	0.472*	11	0.656**	12	0.621**
Item	Correlation	Item	Correlation	Item	Correlation	Item	Correlation
13	0.712**	14	0.712**	15	0.778**	16	0.781**
17	0.600**	18	0.870**	19	0.603**	20	0.794**

*. Correlation is significant at the 0.05 level & **. Correlation is significant at the 0.01 level

Table 7 shows that the correlation coefficients for each scale item and the scale's overall score were statistically significant at (0.05) & (0.01). Additionally, each scale dimension's correlation coefficient as well as the scale's overall score were statistically significant at (0.01). This suggests that, in terms of internal consistency, the listening anxiety scale was a valid tool, and that all of its dimensions and items were allocated to achieve its primary goal.

The Reliability of The listening anxiety Scale:

For approaching the reliability of the listening anxiety scale, the researcher used the following two methods:

(A) Test-Retest Method:

During the second semester of the academic year (2023–2024), the scale was given to a random sample of thirty second-year English language section students at Benha University's Faculty of Education. Two weeks later, the same group was given the scale once more. Table (8) shows the Pearson correlation coefficient for each item on the scale as well as the overall scale between the two administrations.

Table(8): The Test-Retest Reliability Coefficient of the listening anxiety scale.

Method of Reliability	Number of subjects	Listening anxiety scale items
Test-retest	30	0.851**

** . Correlation is significant at the 0.01 level

b. Cronbach's Alpha Method

Cronbach's alpha was also used to assess the reliability of the listening anxiety scale. The Alpha coefficient of the Listening anxiety scale was calculated to the main dimensions of the scale and the total score of the scale as a whole. The value of the Alpha coefficient confirmed here to be acceptable revealing that the digital literacy scale is reliable and has internal consistency. It is evident in the following table.

Table(9): Alpha coefficient of the listening anxiety scale

items	Number of the subjects	Total items of listening anxiety scale
Cronbach's Alpha	30	0.817

** . Correlation is significant at the 0.01 level

Considering "it is appropriate [with alpha coefficient] to have a reliability coefficient of 0.70 or higher." The result shown in the preceding table is acceptable, indicating that the listening anxiety scale is dependable and has internal consistency (Wells & Wollack, 2003, p. 4).

Experimentation

Pre-administration

After drawing the participants of the study, the EFL listening skills and the Listening anxiety scale were pre-administered to them during the second semester of the academic year 2023/2024 at Faculty of Education, Benha University.

Experimentation

The experimental group's members were given access to a program that used artificial intelligence tools to improve their EFL listening skills and lessen their anxiety related to listening. During the practical hours of the teaching methods course offered to second-year English language section students at the Faculty of Education, Benha University, the experimental treatment was conducted. The experiment's first session lasted sixty minutes and was designed to familiarize participants with EFL listening techniques as well as strategies for overcoming listening anxiety. The artificial intelligence tools-based program was used to instruct the participants for the remaining experiment sessions. The trial went on for about half a month.

Based on artificial intelligence techniques, the program's main goals were to help EFL students improve their listening skills and lessen their hearing anxiety (catboats). The 14 sessions in the curriculum focused on employing different podcasts and chatbots in each session. The curriculum had a number of tasks covering the fundamental ideas of artificial intelligence in each session. The primary goal of the program is to train potential teachers at Benha University's Faculty of Education how to improve their EFL listening skills and lessen their listening anxiety.

The views of the aspiring instructors regarding the value of EFL listening and strategies for easing their own listening anxiety gradually began to shift. They also had a greater desire to participate in extracurricular activities. The goal of each program session was to improve one or two EFL listening subskills.

Post administration

After implementing the program based on the artificial intelligence tools, Post administration of the study instruments took place at the end of the second semester of the academic year 2023/2024.

C-Artificial intelligence tools- Based Program (AI T BP)

The Benha Faculty of Education's second-year English language students were the target audience for the artificial intelligence tools-based program, which was created to help them improve their EFL listening skills and lower their listening anxiety. It also included theoretical and practical exercises that taught the students how to practice these skills until they reached the mastery level. (See Appendix H)

a- Objectives of the program

- The purpose of the artificial intelligence tools-based program is to improve EFL listening abilities and lessen listening anxiety among second-year English language section students at Benha University's Faculty of Education. Throughout the sessions, the researcher employed a range of exercises, assignments, and tasks to enable the participants to fulfil the program's objectives. At the conclusion of the course, learners will be capable of:
 - Clarifying the role that artificial intelligence-based programs play in EFL instruction.
 - Demonstrating the importance of EFL listening skills and the need to help EFL learners feel less anxious while they listen.
Improving a few EFL listening subskills
 - Use an artificial intelligence tool-based program to disrupt the monotony of traditional classroom methods and create an engaging and joyful learning environment.

b- Content of the Program

The program included various tasks and activities that based on the artificial intelligence tools to enhance the prospective teachers' EFL

listening and reducing their listening anxiety. The program was adapted from numerous sources such as related studies and books as the following:

1-	Rebolledo, Fabian,(2023)	5-	Lu, (2018)
2-	Haristiani, (2019).	6-	Woo & Choi (2021)
3-	König (2021)	7-	Umar (2024)
4-	Choi, (2016)	8-	Yu (2018)

C- Description and Framework of the program

There were fourteen sessions in the program. The first introduction session covered the sub-skills of EFL listening skills and how to lessen research participants' listening anxiety. The instructional sessions that followed involved practicing the EFL listening subskills through listening (Talk pal and LINE Bots). Additionally, there were two revision sessions for the listening subskills. As a kind of formative program evaluation, every revision session was rehearsed and presented following the last five-skills exercise. (See Appendix H).

D- Principles of the Artificial Intelligence-Based Program (AI BP)

The present study was conducted to second year prospective teachers at the English section, Faculty of Education, Benha University, during the second academic year of 2023–2024. The major principles of artificial intelligence based program were collected through reviewing the related literature dealt with the (AI), activities and its practical applications. The program goes through certain principles as follows:

1. Immovability implies that the educational system can be saved and preserved permanently. This fact was clearly demonstrated in the materials that were recorded and utilized during the sessions, including various AI Bots. The researcher employed the Microsoft Teams Platform to share the titles AI Bots. Additionally, all sessions were recorded, and the materials were subsequently uploaded.

2- Availability: Participants had no trouble finding the program's information and materials. In addition, students saw and listened to the AI assistant as it spoke to them one-on-one, in pairs, or in small groups, depending on the session's objectives and the skill that was supposed to be practiced.

3-Interactivity: The learner's role during the program sessions has changed from being that of a passive recipient of knowledge or listener to one of collaboration and co-designer of knowledge with peers. Over the duration of the sessions, participants will be able to identify the primary idea and supporting information in the audio texts as well as summarise the content of TalkPal and LINE Bots.

4- Setting the scene for educational activities: The program's contents were real and included talks that one may have in a typical day. Following the listening, the participants were to use flow charts, diagrams, or mind maps to either verbally or in writing retell or paraphrase the topic. Participants discuss their solutions in small groups and pairs based on each challenge during the program's sessions.

5-Flexibility: Participants received program materials and information at the appropriate time and location. Participants in the advanced practice are able to recognize the sociolinguistic and pragmatic aspects of English in the speech produced by LINE Bots and Talk Pal.

6- Findings of the study

In order to answer the study questions and in light of the quantitative results of the post administration of the EFL listening skills test and listening anxiety scale to the study groups (the experimental and the control), this section presents the results in light of the study's hypotheses using the Statistical Package for Social Sciences (SPSS), Version 25. The findings are stated as follows:

6.1-Testing Hypothesis (1)

The first hypothesis states that “There is a statistically significant difference between the mean score of the experimental and control groups of the overall EFL listening skills and sub-skills on the post-administration of EFL listening skills test, in favour of the experimental group.

The independent sample T-test was used to compare the mean scores of the control group and experimental one in overall EFL listening skills and sub-skills on the post administration of EFL listening test. To calculate the total effect size of the experimental treatment on the listening skills as a whole, the effect size (η^2) was calculated. Table (9) presents the mean scores, standard deviation and level of significance.

Table (9): "t" test between the mean score of the experimental group and the control group in overall EFL listening skills and sub-skills

Skills	Group	No.	Mean	Std. Deviation	t-value	DF	α Sig	η^2
1(listen to get the gist and the general idea of what someone is saying.	Experimental	33	3.45	0.99	11.28	65	0.01	0.155
	Control	34	0.823	0.94				
2(listen to identify specific details from a spoken message	Experimental	33	3.21	0.992	7.01	65	0.01	0.377
	Control	34	1.11	1.40				
3(listen to gain the implied meaning	Experimental	33	3.33	1.19	8.03	65	0.01	0.155
	Control	34	1.05	1.12				
4(listen to identify the synonyms of the key words in a conversation	Experimental	33	3.39	1.05	8.00	65	0.01	0.123
	Control	34	1.29	1.08				
5(listen to identify the speaker's purpose	Experimental	33	3.63	0.92	7.338	65	0.01	0.295
	Control	34	1.35	1.53				

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6(listen to recognize the discourse markers	Experimental	33	3.51	0.87	8.526	65	0.01	0.245
	Control	34	1.35	1.17				
7(listen to identify speaker credibility	Experimental	33	3.63	0.92	7.119	65	0.01	0.129
	Control	34	1.82	1.140				
8(listen to identify the expressions of suggestions	Experimental	33	3.87	0.48	6.137	65	0.01	0.182
	Control	34	2.29	1.40				
9(Listen to determine what idioms mean.	Experimental	33	2.54	1.25	3.027	65	0.01	0.286
	Control	34	1.52	1.48				
10(listen to infer the speaker's attitudes	Experimental	33	3.09	1.23	2.256	65	0.01	0.289
	Control	34	2.35	1.43				
Over –all the Test	Experimental	33	33.69	2.69	25.289	65	0.01	0.782
	Control	34	15.00	3.31				

The means of the experimental and control groups' results on the post-application of the EFL listening test for the EFL listening overall skills show a statistically significant difference (Table 9). At the 0.001 level, every t-value is significant and favours the experimental group. This suggests that the experimental group has improved their EFL listening skills. As a result, the first hypothesis was verified.

Furthermore, the experimental treatment's effect size (η^2) on the total listening skills ranged between 0.155-0.782, indicating a high and appropriate value, with the exception of skill 4 and 5, which showed a moderate effect. This suggests that the experimental treatment is responsible for a significant amount of the difference. As a result, the experimental treatment has a very large impact on how well listening skills are developed overall. Figures 3 and 4 provide a graphic representation of these variations.

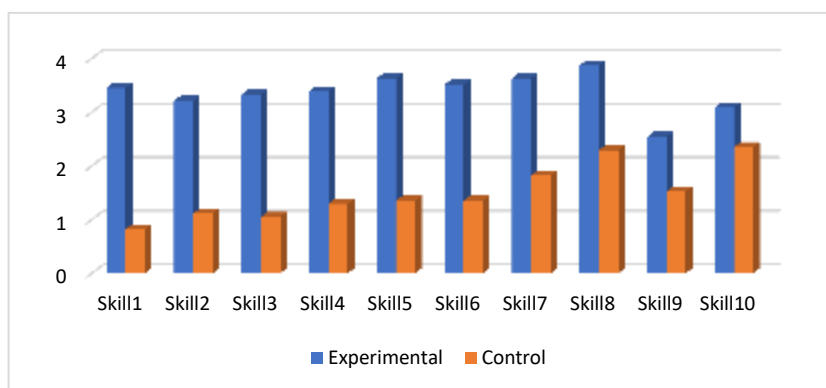


Figure (3) The Statistical Representation of the Study Participants' Mean Scores of listening sub-skills on the Post administration of the listening test.

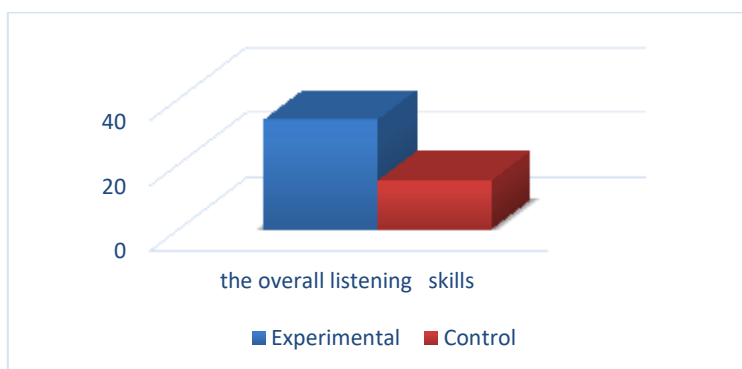


Figure (4) The Statistical Representation of the Study Participants' Mean Scores of listening overall skills on the Post administration of the listening test.

Testing Hypothesis (2)

-The second hypothesis states that” There is a statistically significant difference between the mean score of the experimental and control groups of the overall listening anxiety on the post- administration of listening anxiety scale, in favour of the control group.

For testing this hypothesis, the independent sample T-test was used to compare the mean scores of the control group and experimental one in overall items of listening anxiety on the post administration of listening anxiety scale. To calculate the total effect size of the experimental treatment on the listening anxiety as a whole, the effect size (η^2) was

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calculated. Table (10) presents the mean scores, standard deviation and level of significance.

Table (10): “t” test between the mean score of the experimental group and the control group in overall listening anxiety

Group	No.	Mean	Std. Deviation	t-value	DF	α Sig	η^2
Experimental	33	58.058	4.423	24.428	65	0.01	0.965
Control	34	34.575	3.392				

According to table(10), there is a statistically significant difference ($\alpha \leq 0.01$) between the mean scores of the study participants of the experimental group and control group in the overall items of listening anxiety, on the post administration of the listening anxiety scale in favour of the post-assessment. Thus the second hypothesis was verified. In addition, the effect size (η^2) of the experimental treatment on reducing the listening anxiety was (0.965) that was high and appropriate value. This indicates that a large proportion of the difference is due to the experimental treatment. Thus, there is a highly significant effect of the experimental treatment on the reducing of overall items of listening anxiety. Figure (5) shows these differences in a visual form.

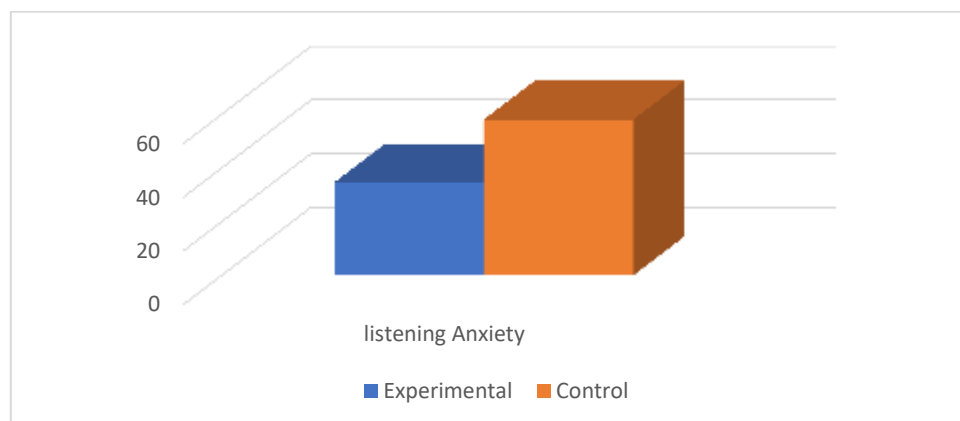


Figure (7) The Statistical Representation means score of the experimental group and control group in the listening anxiety scale in the post administration

Testing Hypothesis (3)

-The third hypothesis states that “There is a statistically significant negative correlational relationship between experimental group students’ scores in the post-assessment of the EFL listening skills and their scores in the listening anxiety scale.

The experimental group's scores on the post-assessment of the EFL listening skills test and the listening anxiety scale were compared using the Pearson correlation in order to test this hypothesis. The results show that the third hypothesis of the study was accepted, with the higher the experimental group's scores on the EFL listening skills test, the lower their scores on the listening anxiety scale (see Table 11).

Table (11):"the correlation between the scores of the experimental group in the post-test of the EFL listening skills and post-test of the listening anxiety scale.

Variables	Pearson Correlation	Sig.
EFL Listening skills	- 0912	- 0.001
Listening Anxiety		

The third hypothesis was confirmed and approved when table (11) shows a statistically significant negative correlation at ($\alpha \leq 0.01$) between the experimental group's scores on the listening anxiety scale and their scores on the EFL listening skills test. This indicates that participants who score highly on the listening skills test will also score low on the listening anxiety scale.

7- Discussion and Interpretation of the Study Findings:

This section provides a thorough explanation and discussion of the findings that were attempted in the previous research section. The study hypotheses are taken into consideration while interpreting and discussing the results.

With respect to the initial research hypothesis, the results demonstrated a statistically significant difference in the experimental group's mean scores on the overall EFL listening skills and sub-skills on the post-administration EFL listening skills test compared to the control group. T-value was 25.289, and at 0.01 it is significant. This indicates that the experimental group's EFL listening skills and related sub-skills were more enhanced than those of the control group. These findings provided statistical support for the first hypothesis.

The program's sessions provided a weekly exposure to auditory input, which was a crucial factor in the artificial intelligence technologies' efficacy (Talkpal and LINE Bots). Although students reported spending over an hour on their listening log job, which included listening to the talks for organizing the reviews, the bots or speeches they listened to in the current study had an average duration of roughly six minutes. Talkpal and LINE Bots are excellent digital resources for language learning because of their abundance of content. This outcome is in line with the research of

(Tushar, 2024 ; Al- Yuanchao, et.al. 2013)

Depending on the needs of the task, the individuals, couples, or small groups of participants in the experimental group watched and listened to the allotted audio materials. Students can view and listen to the course materials at home in synchronous or asynchronous online sessions, as well as in-person. During the listening portion of the session, participants made notes on certain terms and focused on identifying the type of data structure—cause-and-effect or comparisons-contrasts. They respond to questions about listening comprehension that cover the following topics: the main ideas and supporting details; the meaning of reduced forms; the inference about cause and effect; finding synonyms for key words; listening to

recognize expressions of uncertainty; understanding idioms; and listening to determine the speaker's attitude.

After their listening to the artificial intelligence materials, the students use flow charts, diagrams, and mind maps to both orally and in writing summarize and paraphrase the topic. The participants and the researcher talked about their responses. They talked about the answers to the questions in small groups, in pairs, and individually based on the objectives for each program session. They practiced pronouncing unusual words and talked about vocabulary and grammar issues with their instructor. In online sessions, answers and summaries were shared using the Microsoft Teams platform, and in-person discussions took place in classrooms.

Because of their qualities, which included several ELT classroom accomplishments, the researcher discovered that students in the experimental group had a strong desire to study English by using AI Bots conversations. Specifically, during the program's sessions, artificial intelligence tools gave the participants the chance to passionately answer the instructor's assignments. Following their podcast listening, the study sample was encouraged to apply creativity to enhance their listening abilities through a variety of assignments and activities. Students' excitement throughout the program sessions utilizing bots during the therapy time is a clear indicator of this improvement. Additionally, the artificial intelligence resources made available by AI Bots included real learning resources, simple downloads, sample access, and an interactive transcript function.

The results of this study demonstrated the need of giving apprentices access to appropriate materials so they can develop their English comprehension skills. The study participants were able to hear native speakers' speech thanks to the instructor's use of artificial intelligence bots. The artificial intelligence tools are

typically enjoyed by the participants. Learners perceive AI bots as a useful instrument that has marginally enhanced their listening performance in the English language. An interactive atmosphere was given for the participants. Because the material was pertinent and meaningful to the students, their listening skills improved. This outcome is in line with the research of (Joel, et.al., 2024 ; Kuleshova, et.al, 2021)

Regarding the third and fourth research hypotheses, the results indicated that the control group's mean scores in the post-assessment of EFL overall listening anxiety differed from those of the experimental group in a statistically significant way (T-value = 58.058, significant at 0.01; see figure 2). This indicates that the apprentices in the experimental group experienced less listening anxiety. These findings provided statistical support for the second and third hypothesis.

The artificial intelligence-based program has verified to be effective in reducing the listening anxiety for the experimental group. This can be certified to various sources. The researcher used authentic resources that were proper to students' performance and promote their interest in practicing listening skills. This result was consistent with the study of (Ghoneim & Elghotmy, 2021)

To sum up, it can be asserted that the artificial intelligence tools –based program was effective in developing prospective teachers' EFL listening and reducing their listening anxiety.

8- Conclusion

The study's findings demonstrated that the application of the artificial intelligence (tools)-based software improved the participants' EFL listening abilities. Furthermore, the program's materials, assignments, and activities fostered a collaborative environment that greatly aided in the development of EFL

listening skills and the reduction of listening anxiety among potential EFL second-year teachers. The results of this study demonstrated the need of giving EFL apprentices access to appropriate materials so they may practice having English-language conversations. Instructors can provide EFL apprentices with the opportunity to hear native speakers speak by employing AI bots. According to the study's findings, employing LINE Bot is one task that has a favorable impact.

Therefore, results of the present study indicted the effectiveness of the artificial intelligence tools (LINE Bot and Talk pal)-based program in developing prospective teachers' EFL listening skills and reducing listening anxiety.

9- Recommendations of the study:

Based on the previous results, the following recommendations can be proposed:

- EFL teachers should be trained on applying the artificial intelligence tools in classes.
- Investigating the effect of using the artificial intelligence - based program in TEFL.
- Curriculum designers must take into their account the significance of embedding the artificial intelligence implications in the syllables of diverse stages.
- EFL university instructors should encourage their students to use the AI Bots tools in their teaching.

10- Suggestions for further Research:

The following research topics are suggested for more investigation, given the constraints of the current study and the results obtained:

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- Two replications of the research variables were conducted: one with first-year students at the Faculty of Education, and the other with students pursuing higher education.
- The program based on artificial intelligence is being utilized to enhance the professional growth of aspiring teachers.
- Undertaking additional research to investigate how artificial intelligence may improve the vocabulary acquisition of EFL student teachers.
By using an artificial intelligence-based tool, EFL student teachers can improve their speaking abilities and other language skills.
- Examining the perspectives of EFL students regarding the utilization of artificial intelligence resources.

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