

**A Program Based on Artificial Intelligence to Enhance  
Prospective Teachers' English Pronunciation**

**By**

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**Abstract**

The current study investigated the effect of using a program based on Artificial Intelligence (AI) to enhance prospective teachers' English pronunciation. The researcher used English Language Speech Assistant (ELSA) Speak Application as one of the AI applications that is proved to be effective in teaching pronunciation. A quasi-experimental pre-post test control group design was employed. A stratified random sample of third - year Faculty of Education English majors enrolled in the first semester of the academic year 2023-2024 was assigned to the study. The study was conducted in the phonology course; one session a week. Each session, according to the faculty byelaw, lasted for three and a half hours. Fifty participants were divided into two intact groups: an experimental group and a control one. A program was designed by the researcher in the light of ELSA Speak Application and was used with the experimental group, whereas, the control group received regular instruction. Data were collected by a pre-post English pronunciation test. Analysis of data obtained showed that the experimental group achieved a higher degree of improvement in the post testing than the control group in the English pronunciation test. Recommendations and suggestions for further research were presented.

**Key words:** Artificial Intelligence, English Pronunciation.

برنامج قائم علي الذكاء الاصطناعي لتحسين نطق معلمي اللغة الإنجليزية المستقبلين  
إعداد

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أستاذ المناهج وطرق تدريس اللغة الإنجليزية المساعد

كلية التربية- جامعة المنيا

هدفت الدراسة الحالية إلي قياس أثر استخدام برنامج قائم علي الذكاء الاصطناعي لتحسين نطق معلمي اللغة الإنجليزية المستقبلين. استخدمت الباحثة تطبيق مساعد النطق للغة الإنجليزية (ELSA Speak) كأحد تطبيقات الذكاء الاصطناعي التي أثبتت فعاليتها في تعليم النطق. وقد استخدمت الباحثة المنهج شبه التجريبي الذي يقوم علي استخدام مجموعتين: إحداهما ضابطة , والأخرى تجريبية. تم إختيار عينة عشوائية طبقية من طلاب الفرقة الثالثة بكلية التربية تخصص اللغة الإنجليزية المسجلين في الفصل الدراسي الأول من العام الجامعي 2023-2024. تم تطبيق الدراسة في مقرر الصوتيات بمعدل محاضرة واحدة إسبوعيا. استغرقت كل محاضرة حسب لائحة الكلية ثلاث ساعات ونصف. تم تقسيم خمسين مشاركا إلي مجموعتين متساويتين: مجموعة تجريبية وأخرى ضابطة. وقد صممت الباحثة برنامج قائم علي الذكاء الاصطناعي في ضوء تطبيق ELSA Speak وتم استخدامه مع المجموعة التجريبية, بينما تلقت المجموعة الضابطة الطريقة المعتادة في التدريس. تم جمع البيانات عن طريق اختبار النطق باللغة الانجليزية القبلي- البعدي. وقد أظهر تحليل البيانات التي حصلت عليها الباحثة أن المجموعة التجريبية حققت درجة أعلي من التحسن في الإختبار البعدي مقارنة بالمجموعة الضابطة في إختبار النطق باللغة الإنجليزية. وتم تقديم التوصيات والمقترحات لمزيد من البحث.

**الكلمات المفتاحية:** الذكاء الاصطناعي , نطق اللغة الإنجليزية

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**Introduction**

The role of English as an international language highlighted the need for learning the language to pursue international competitiveness in labor market and in the world of research and science. English is endorsed for scientific, technological and cultural interaction, as well as economic, political and strategic cooperation, spreading also through mass media, communications, and multinational corporations. English has grown in importance, where it is perceived as an indispensable skill for people to access employment in international and global companies.

The ability to speak is very dependent on the correct pronunciation (Vasbieva, et al, 2016). An important micro skill in dealing with the communication process is pronunciation. In contrast, bad pronunciation might make communication difficult. Due to its complex phonological structure, English pronunciation appears to be a challenging skill for EFL learners to master (Giba & Ribes, 2011).

English pronunciation is a crucial component in language learning, as it directly impacts a learner's ability to communicate effectively in English. Although grammar and vocabulary are essential elements of successful communication, they would be of no or little use if the speaker is not able to pronounce the target language properly. Furthermore , intelligible pronunciation does not only include the ability to pronounce isolated sounds but also other types of competencies including stress, rhythm, linking and assimilation (Celce-Murcia et.al , 2010).

Teaching pronunciation in foreign language classes has become an important element to achieve an intelligible communication and to improve students' oral competences. Most of the English teachers and Nonnative English teachers overlook pronunciation as they focus their teaching in other English areas, which are deemed to be more important. Even though, one of the key requirements for language proficiency is to secure understandable pronunciation for the language learners (Gilakjani, 2012).

Darcy (2018) highlighted that pronunciation skills refer to a speaker's ability to articulate and produce the sounds of a language accurately and intelligibly. These skills encompass various aspects of spoken language, including the correct pronunciation of individual phonemes (speech

sounds), stress patterns, rhythm, intonation, and the overall fluency and clarity of speech. Effective pronunciation skills are crucial for clear and effective communication in a given language, as they impact the listener's comprehension and the speaker's intelligibility. Pronunciation skills can be a key component of language learning, as they contribute to the learner's ability to convey meaning and engage in effective oral communication.

Kissova (2019) emphasized that pronunciation is of the most difficult aspects of English to acquire and the target of comfortable intelligibility. Pronunciation is vital to develop proper listener friendly and intelligible communication because the incorrect use of pronunciation inevitably leads to the message being misunderstood by the recipient. Pronunciation of the letter sounds in words as well as syllable emphasis on parts of words will often change the words meaning and context drastically thereby irreversibly altering the meaning of the sentence being communicated.

Nushi and Sadeghi (2021) highlighted that one of the most significant aspects in speaking skills is pronunciation. Yet, there are still many people who do not pay attention to pronunciation due to a number of reasons such as teacher's lack of confidence or training of teaching the skill, perceived lack of importance of pronunciation teaching and lack of sufficient and easy-to-use materials.

Gilakjani (2012) emphasized that pronunciation tends to be neglected in foreign language classroom, and EFL teachers are frightened by the idea of teaching pronunciation. Yet, pronunciation instruction does not have a secure place in most language curriculums. Most teachers do not provide instruction at all and those few that do generally adopt a hit or miss approach rely on materials that lack grounding and the desired results. This situation is worsened by the fact that pronunciation is marginalized and treated superficially.

Research has been telling us that there is a need for continued research in this area of phonology and phonetics if we are to fully understand how native-like accents are achieved in foreign language acquisition and how teachers, on the practical level can help students develop proficient foreign language pronunciation. Phonological awareness is essentially how the language acquirer learns to identify and understand the system and patterns of speech sounds. Because of the abstract and complex nature of phonology the nonnative speaker needs to learn to deal with the mental aspects of the target language system. In contrast to phonological awareness is phonetical awareness, which is learning to understand the

physical sounds or articulatory structures of the target language. (Yule 2006)

Teaching pronunciation has passed a shift from a narrow approach focusing on segmental features like phonetics and phonology to a comprehensive one stressed on suprasegmental features like stress, intonation, rhythm and sounds (Tergujeff, 2012). Empirical research and pronunciation materials writer suggest that teaching suprasegmentals before segmentals to intermediate and advanced levels could be more beneficial in a shorter period of time. (Gilakjani, 2012).

Kissova (2019) emphasized that modern teaching pronunciation approaches refer to the dominant influence of the learner's mother tongue language on the process of learning pronunciation in foreign language classes. The researcher goes in accordance with Kissova because, in Egypt, we have a good example of such a case where passive transfer of Egyptians' mother tongue makes learners replace the pronunciation of /ð/, /θ/, /p/ and /v/ by /z/, /s/, /b/ and /f/. This assures that the effect of mother tongue on learning English pronunciation must never be left unresearched.

Gilakjani (2012) introduced the following goals for learners to develop their pronunciation and better-spoken in foreign language learning:

1. Developing communicative competence as it is perceived the main aim of pronunciation teaching and learning.
2. Focusing on intelligibility and comprehensibility.
3. Developing spoken English that is easy to understand for listeners.
4. Developing spoken language that serves communicative needs effectively and increases self-confidence.
5. Developing a positive self-image.
6. Promoting speech monitoring abilities and speech modification strategies that will allow students to develop intelligibility, communicability and confidence outside the classrooms.

Technology has been created to enhance human productivity and simplify everyday tasks. The integration of technology has had a significant influence on the field of education, shaping it into what it is today. Dahaya and Kanthavel (2022) mentioned that modern technology has transformed traditional teaching and learning methods, making education more engaging, interactive, and personalized. They further stated that with the availability of online learning platforms, educational apps, and digital resources, students and teachers can access a vast range of educational materials with ease.

Recent approaches to teaching in computer - based contexts follow the communicative approach in teaching pronunciation. Increasing attention has been placed on providing pronunciation instruction that meets the communicative needs of non-native speakers. The technologies related to pronunciation learning include Computer-Assisted Pronunciation Teaching (CAPT) tools, websites, social network services, software, mobile services and applications. (Agarwal & Chakraborty, 2019).

One technology that is being developed intensively is Artificial Intelligence (AI). The word AI consists of the words "Artificial" and "Intelligence" (Ahmet, 2018). The term "Artificial" refers to something simulated or not entirely genuine, but necessarily untrue, while "Intelligence" is something that can replace genuine items because the former has qualities in a certain context. Intelligence is a very complex term. It includes different forms, such as reasoning, self-knowledge understanding, emotional awareness, preparation, consciousness, and creativity. Artificial intelligence (AI) has been greatly enhanced, and the focus of artificial intelligence during this period is to make intelligent boards that can help learners practice AI applications.

Over time, technology began to dominate all aspects of human life, and has a significant impact on changing the world today. The development of technology of smart phone applications, for instance, English Language Speech Assistant (ELSA) speak application, an integrated artificial intelligence (AI) speech recognition program, may support teaching and learning, especially for improving students' pronunciation ability (Pinontoean et al., 2022). Located in San Fransisco established in 2015 by Vu Van, it is one of the smart artificial intelligence technologies for language learning to speak and pronounce. This app. is also categorized as the Mobile-Assisted Language Learning (MALL). (Khoils, 2021)

Kholis (2021) highlighted that nowadays, artificial intelligence (AI) became a special concern in language teaching for the reason that it can assist and enhance language learning for supplementing language teaching like ELSA Speak App one of Automatic Speech Recognition (ASR) used for teaching pronunciation. It studied how students heard, voiced, vocalized and asserted the English words in the oral language, but the students often pronounced incorrect words with the result that the uttered words had faulty meaning.

The ELSA speak application is highly recommended for students to improve their speaking skills because it provides several facilities and features, including speech recognition technology, a custom , test curriculum, a free online dictionary, pronunciation and intonation

checker, and free assessment exams throughout the program. It is designed to help learners to speak English clearly, fluently, and confidently (Samad & Aminullah, 2019).

ELSA Speak App. provides learners with instant feedback on their pronunciation accuracy at both segmental and suprasegmental levels. Perhaps this is the reason the app website names it "the world's smartest artificial pronunciation coach". The app. provides learners with a detailed evaluation of their pronunciation and areas of improvement. (Nushi & Sadegi, 2021).

Furthermore, ELSA speak App. makes learning English fun memorable and provides various kinds of themes that can be adapted to user's training needs. Moreover, ELSA speak provides some learning levels, ranging from beginner to advanced level, and determines whether or not the user's speech is accurate. Learners are free to voice their thoughts and ask questions about subject being discussed. (Hanna et al., 2022).

Nushi and Sadeghi (2021) emphasized that ELSA speak app. can be beneficial and serve as a supplementary teaching aid for teachers. Furthermore, it can provide language learners with opportunity to enhance their pronunciation on their own and become more autonomous in learning the skill. The feature that distinguishes ELSA from other pronunciation development apps is its built-in speech recognition technology, and the way it provides learners with instant feedback on their pronunciation accuracy at both segmental and suprasegmental levels. The app. provides learners with a detailed evaluation of their pronunciation of words and sounds giving them a clear picture of their strengths and areas of improvement.

To conclude, the role of teaching pronunciation in teaching English is not just only a cognitive 'knowing -that' but it is also a physical 'knowing -how' confirming the success of practical training with adequate theoretical information. The researcher in the current research tried to fulfill this target with the use of ELSA Speak App.

### **Literature Review and Related Studies**

The integration of technology in pronunciation instruction has gained considerable attention. Karim et. al (2023) attempted to examine EFL students' speaking performance by using ELSA speak app., they further explored their perceptions, and found out the inhibiting factors influencing low performance in their speaking. A mixed method research was applied to obtain both quantitative and qualitative data. Twenty one students were involved in the data gathering process which was collected by using a test, questionnaire, and semi-structured interview. Furthermore, pre-test and post-test were conducted to examine their

speaking ability, and a questionnaire using a 5-point Likert scale. In addition, a semi-structured interview was conducted to further explore the inhibiting factors of their low speaking performance. It was concluded that students' speaking ability had significantly improved after using ELSA application.

Akhmad and Munawir (2022) conducted a study to determine the improvement of students' pronunciation skills (Supra-segmental) in English using the ELSA Speak application and to determine student perceptions of the use of the ELSA Speak application. The location of this research was at the University of West Sulawesi. The approach used in this research was quantitative. The One Group Pre-experimental design was used. The population in this study was class D class 2021 majoring in English at the University of West Sulawesi. The sampling method used in this study was a simple random sampling method. The research sample used was 20 participants. The research data was collected through a pronunciation test given to students using pre-test and post-test as well as distributing perception questionnaires to students. The results indicated that ELSA Speak application could significantly improve students' pronunciation skills in English additionally students responded well to the use of ELSA speak application.

Nushi and Sadeghi (2021) presented a critical review of ELSA speak App. They indicated that ELSA can be beneficial and serve as supplementary teaching aid for teachers. Furthermore, it can provide language learners with their pronunciation on their own and become more autonomous in learning the skill. It is worth noting that the feature that distinguishes ELSA from other pronunciation development apps is its built in speech recognition technology, which has made it rank among the world's top five artificial intelligence apps.

Darsih and Wihadi (2021) conducted a study to survey students' perceptions of ELSA Speak app. Four classes of students from English Education program were surveyed by using a questionnaire adopted from Martins , Levis and Borges (2016) it was revealed that the majority of the students agreed that ELSA Speak app. was a useful tool to improve their speaking ability particularly pronunciation aspect.

Chen and Li (2016) reviewed the research approaches used in computer-assisted pronunciation training (CAPT), addressed the existing challenges, and discussed emerging trends and opportunities. To complement existing work, the analysis of their study placed more emphasis on pronunciation teaching and learning (as opposed to pronunciation assessment), prosodic error detection (as opposed to



phonetic error detection), and research work from the past five years given the recent rapid development in spoken language technology

Mahdi and AlKhateeb (2019) conducted a study to examine the overall effectiveness of using a computer in pronunciation learning and training. A meta-analysis of studies was conducted, which compared the outcomes of students learning the pronunciation of a foreign language (FL) using a computer with the results from those learning pronunciation based on traditional methods of teaching. This meta-analysis examined how effect sizes varied depending on the learners' age, learners' target language proficiency, and features of pronunciation, educational level, settings, treatment duration, and assessment tasks. This meta-analysis examined the effect of using a computer on pronunciation learning by reviewing 20 studies involving 1014 participants.

The findings of Mahdi and Alkateeb showed that that computer-assisted training had a positive effect on FL pronunciation, and was equally effective for both young and adult learners, but more effective for beginner and intermediate learners than advanced learners. The study also suggested that computer-assisted pronunciation training (CAPT) was more beneficial for university students than for school students. However, caution had to be exercised in interpreting the results.

Derwing and Munro (2015) highlighted the importance of pronunciation skills in foreign language learning and the role it played in reducing accent-related communication difficulties. Flege and MacKay (2004) discussed the significance of focused pronunciation instruction, addressing strategies such as explicit instruction, the use of technology, and corrective feedback in pronunciation improvement. These methods have been key focal points in language education research.

Effective feedback is a crucial element of pronunciation instruction. Research by Kang (2010) delved into the role of feedback in pronunciation teaching and learning. The study discussed the impact of different types of feedback, such as teacher feedback, peer feedback, and technology-based feedback, on learners' pronunciation accuracy.

### **Commentary**

The preceding review of literature and related studies deepened the researcher's knowledge of the independent variable and helped the researcher to state the hypothesis of the study and prepare its instrument. Based on reviewing literature, several studies were conducted to investigate the impact of using ELSA Speak Application on learners' pronunciation, speaking ability, perceptions and motivation. However, to the knowledge of the researcher no studies were conducted yet in the Egyptian's context. The current study tried to enhance and measure

aspects of pronunciation such as the use of segmentals, suprasegmentals, transcribing sounds and students' independent practice of pronunciation. The researcher tried to use ELSA Speak application in the Egyptian context and present a program to EFL instructors to effectively use this application with third-year English majors. Additionally, it presented third-year English majors an English pronunciation test.

### **Context of the Problem**

Reviewing the related literature on the variable of the study, it became evident that in the light of the new demands of the job market and recommendations of modern studies, the spoken language is extremely essential in the world of language teaching and learning and therefore, should receive special interest from EFL curriculum designers. The educational system should prepare students to live in the changing world and provide them with the skills needed to communicate with people all over the world.

The role of the teacher, therefore, is not to misguide the language learners but to equip them with awareness and necessary oral communication skills in an authentic manner so as to understand how the language is actually used in real contexts. Learners at most colleges of education and universities, therefore, are required to take at least one communication course-either a hybrid basic course in the fundamentals of oral communication, public presentation, interpersonal communication, augmentation and debate, lecturing or public speaking according to the nature of the target careers.

To further identify the real day-to-day practices concerning teaching the 'phonology' course, as the major course responsible for teaching the basics of language system and which had a direct impact on both speaking and pronunciation of EFL learners, the researcher informally interviewed thirty students as well as three of the staff members specialized in teaching the phonology courses regarding the instructional media and teaching methods used in teaching the 'phonology course', how effective in achieving the ILOs of the course, the integration of any oral communicative activities into this course, the available labs and how equipped they were, the techniques used in assessing the achievement of the course ILOs, learners' talk time during the phonology session. The following became evident:

1. No use of technical means and any of the AI Applications especially ELSA Speak application to develop students' English pronunciation.

2. Oral communication activities were not incorporated into the sessions of phonology which meant that learners did not get to practice phonological aspects that they were taught.
3. The instructional media used in teaching phonology was confined to audio-tapes and recorded scripts of the individual sounds together with some dialogues.
4. The available audio-scripts were not authentic; they were artificially designed for language learning purposes not compromising the problems and complexity found in real life situations.
5. The labs were only equipped to include 45 learners .This meant that the instructor had to divide the class into groups.
6. The phonology course was considered by 90 percent of the learners to be the most difficult, disliked and uninteresting academic course concerning the hard and the abstract nature of the information presented.
7. Not provided with adequate authentic video models, many language learners found it difficult to pronounce English words in a proper way.
8. Learners remained passive receivers of knowledge as they were not engaged in the teaching-learning process of such course.
9. Problem-solving and brain stimulating oral communication activities (e.g. simulations, public presentations, debating, role-playing...etc.) were not employed in the phonology course to engage learners in the act of speaking.
- 10.No speaking tests were designed or incorporated during the phonology course.
11. Most learners were reluctant to participate in public communication activities in fear of embarrassment resulting from pronunciation errors.

### **Statement of the problem**

Based on what was mentioned above, it became clear to the researcher that prospective teachers' English pronunciation need to be enhanced as this is obvious from their scores in the pretesting. Moreover, the conventional models of content delivery in the recent teacher preparation institution need to be developed and cope with new era of technology and Artificial intelligence. Third- year English majors need to enhance their English pronunciation. Therefore, the present study tried to investigate the impact of using ELSA Speak Application to enhance prospective teachers' English pronunciation.

### **Aim of the study**

Using a program based on Artificial Intelligence to enhance prospective teachers' English pronunciation.

### **Hypothesis**

To formulate the hypothesis of the present study, the researcher depended on personal scientific reasoning and evidence from the related literature. This is why the hypothesis in question is an alternative directed one as follows:

There would be a statistically significant difference between mean scores obtained by the participants of the experimental and the control groups on the English pronunciation post-test , favoring the experimental group.

### **Significance**

1. It tried to fill the gap in review of literature in the studies related to pronunciation promotion through ELSA speak Application.
2. It provided third-year English majors systematic training to enhance their English pronunciation.
3. The feature of ELSA speak application provided learners with learning opportunity that is time flexible, unbound selective , selective, and convenient; making learning more fun, up-to-date, and close to real life situations.
4. The feedback mechanism of ELSA Speak application helped students to effectively correct their English pronunciation.
5. It offered EFL instructors a program based on AI using ELSA Speak App. that might help to teach phonology effectively.
6. It opens new avenues of research for EFL researchers related to the area of AI and English pronunciation.

### **Delimitations.**

1. The pronunciation aspects that were enhanced and measured in the current study cover the use of:

#### **A. Segmentals**

- **Vowels** : (Short Vowels), (Long Vowels) and (Diphthongs).
- **Consonants**: The plosive consonants, the fricative consonant, the affricate and nasal consonants, the approximate and other consonants.

**B. Suprasgmentals**: Syllables, word Stress and sentence Stress, Assimilation and Intonation

#### **C. Transcription**

#### **D. Pronunciation Practice (Independent)**

2. Since the study of phonetics is accumulative the participants were selected from among third- year English majors at the Faculty of Education, Minia University. They were so selected because they had prior pronunciation knowledge from the two preceding years.
3. Fifty students were randomly selected from among third- year English majors and divided into two intact groups; an experimental group (25) and a control one (25).
4. The study was implemented in the first term of the academic year 2023/2024. The experimentation lasted for 49 hours; three and a half hours per week.
5. The researcher used ELSA Speak App. as it was proved to be one of the best five AI applications in teaching English pronunciation. Additionally, for more access to more information on the course the researcher preferred to work on the pro version of ELSA.

### **Definition of Terms**

#### **Artificial Intelligence (AI)**

The use of computer programs that have some of the qualities of the human mind, such as the ability to understand language, recognize pictures and learn from experience. (Cambridge Academic Content Dictionary, 2024)

#### **Operational Definition**

The researcher operationally defines AI as the ability to use one of its best applications known as ELSA Speak app. to enhance Faculty of Education third -year English majors' English pronunciation.

#### **Pronunciation**

Pronunciation is the way in which a language spoken; the way in which a word is pronounced; the way a person speaks the words of language. (Putri, 2014)

Kissova (2019) defined pronunciation as the production of sounds that one use to make meaning. It includes attention to the particular sounds of a language (segments), aspects of speech beyond the level of the individual sound, such as intonation, phrasing, stress, timing, rhythm (suprasegmental aspects), how the voice is projected (voice quality) and , in its broadest definition, attention to gestures and expressions closely related to the way a native speak a language.

#### **Operational Definition**

Pronunciation is operationally defined in this study as the ability of third-year English majors to correctly pronounce segmentals, and suprasegmentals, in addition to effectively transcribe sounds and practice English pronunciation independently and effectively.

## **Method**

### **Research Design**

A pre-post quasi experimental design was adopted in the present study. The experimental and the control groups were exposed to pre-post testing. The experimental group was taught using ELSA Speak App. to develop their English pronunciation whereas the control group received a theoretical background of the phonology course and were enabled to practice their pronunciation.

### **Participants**

Participants of the study were selected from among third-year English majors, Faculty of Education, Minia University, 2023-2024. Fifty students were involved in the study according to their performance in a language proficiency test to insure equivalence between the two groups. They were randomly assigned to two groups of (25) for the experimental group and (25) for the control one. The study was carried out in the 'phonology course' which was formally assigned to be taught during the first semester. The experimental group participants were instructed and monitored by the researcher using a program based on AI using ELSA Speak App. to develop their English pronunciation, whereas participants of the control group were instructed during their usual phonology sessions using the regular way of instruction followed by their instructor.

### **Instructors**

The researcher taught the experimental group whereas another instructor with approximately the same qualifications taught the control one.

### **Variables**

#### **-Independent Variable**

The Program based on Artificial Intelligence

#### **- Dependent Variable**

Enhancing Prospective Teachers' English Pronunciation.

#### **- Control Variables**

1. Age
2. Years of Studying English.
3. Proficiency Level in English
4. Entry level of Pronunciation.

#### **1. Age**

The age level of third- year English majors ranged between 20 and 21.8 years old with approximately the same age in each group. For age of students in months see table (1).

**Table (1)**  
**'t'-Value of the Experimental and the Control Groups' Age**  
**Calculated in Months**

Group	N	DF	Means	SD	t-value
Experimental	25	48	225.5667	5.0082	0.736
Control	25		224.6667	4.4515	

**Not significant at 0.05**

## 2. Years of Studying English

Students in both groups studied English for 13 years, from primary one till the end of the secondary stage.

## 3. Testing Participants' Proficiency level to ensure Equivalence

The test was administered to the participants of both the experimental and the control groups to ensure initial equivalence of the two groups as the t-value (1.53) was significant at the 0.05 level. See table (2)

**Table (2): Means , Standard Deviation and t-values of Difference between Mean Scores of the Experimental and Control Groups in the English Proficiency Test.**

Group	N	DF	Mean	SD	t-value
Control	25	48	45.55	7.61	1.53
Experimental	25		41.45	9.31	

**\*Not Significant at 0.05 level and beyond**

## 4. Entry level of Pronunciation

As shown below in table (3), no significant difference was found between students' level in the English pronunciation test of both the participants of the experimental and control groups as the 't'-value (0.20) was found insignificant at the (0.05) level. Table (4), on the other hand shows the detailed results obtained by the participants on each component of the test

**Table (3)**

**Means, Standard Deviation, t-value of Difference between Mean Scores Obtained by the Experimental and the Control Groups in the Pre- Administration of the English Pronunciation Test**

Group	N	DF	Mean	SD	t-value
Control	25	48	23.68	3.15	0.20
Experimental	25		23.52	2.60	

**\*Not Significant at 0.05 and beyond**

**The Total Score of the Test= 90**



**Table (4)**  
**Means, Standard Deviation and t-Values of Participants' Results in the Pre-Testing of the English Pronunciation Test**

Test Components	The Experimental Group		The Control Group		DF	t-value
	Mean	SD	Mean	SD		
Segmentals	8.04	1.06	8.36	1.08	48	1.06
Suprasegmentals	5.28	0.89	5.40	1.04		0.44
Transcription	3.44	1.19	3.36	1.19		0.24
Pronunciation Practice (Independent)	6.76	1.05	6.56	1.23		0.62
<b>Total</b>	<b>23.52</b>	<b>2.60</b>	<b>23.68</b>	<b>3.15</b>		<b>0.20</b>

### Duration

The experiment lasted for one academic semester, three and a half hours a week, starting from October, 2023, till the begging of January , 2024

### Instruments and Materials

#### I. The English Pronunciation Test

The Pronunciation test was designed to assess prospective teachers' English pronunciation (See Appendix A). Building the pronunciation test went through the following procedures:

1. Reviewing the literature (Torgesen & Mathes, 1998; Aten 2009; Hismanolgu, 2012; Boozer, 2014).
2. Preparing a list of the main pronunciation aspects.
3. Consulting experts in the field of linguistics to specify the aspects that suit the participants and address the program specifications,
4. Designing the pronunciation test.
5. Designing the table of specifications of the English pronunciation test.
6. Establishing the content validity of the test by the jury members as for the statement of the items and the suitability for objectives of the study and by determining the Internal Consistency of the test.
7. Deciding the reliability of the test by using test-retest method.

#### Test construction

##### The Main Sections of the English Pronunciation Test

The test consisted of four main sections that were meant to tackle both practical and theatrical aspects in phonology:

### **Section (A) Segmentals**

This section measured students' ability to recognize the characteristics of given sounds, identify the organs of speech in producing specific sounds and identify their place of articulations. Learners were requested to answer 25 multiple choice questions in phonetics; one mark for each.

### **Section (B) Suprasegmentals**

Section B involved putting theory into practice by covering the practical part of phonological aspects in real context. It focused mainly on intonation patterns and stress placement as learners were requested to listen to a number of given sentences and dialogues and identify / classify /discriminate sentences according to the proper stress placement or intonation patterns (a total number of 25 items; one mark for each).

### **Section (C) Transcription**

Section C involved transcription of a number of words properly without the help of a dictionary (10 items ; one mark for each).

### **Section (D) Pronunciation Practice (Independent)**

Section D covered the practical part of both phonetics and phonology. Learners were requested to read aloud a given text. This question aimed to assess both segmental and suprasegmental features in a more natural context. Two colleagues specializing in teaching phonetics were involved in rating participants' performance. (30 marks)

**The total score of the test was (90) .**

### **Validity of the English Pronunciation Test**

- The content validity was established through submitting the test to a panel of experts in TEFL with regarded to the belongingness of the sub-aspects to the main ones, statement of the items, the fitness of the items for the participants of the study, practically and ease of observation, the relatedness of the items for the objectives, and suggestions for the addition or omission of items.

The jury members approved its validity. They recommended omitting some of the items to avoid repetition and to merge some items that seemed related. Some recommended shortening the test to make it applicable. The test was, then modified according to the feedback received from the jury members.

- The Pearson Correlation Formula was also used to determine the internal consistency of the English pronunciation test. It was applied to a randomly chosen sample of thirty (N=30) third- year English majors, Faculty of Education, Minia University. The correlation between the different domains and the total score of the

test was determined as shown in Table (5) and was found acceptable.

**Table (5)  
Internal Consistency of the English Pronunciation Test  
Correlation between each Component and the Total Test**

Test Components	Correlation (r)
Segmentals	*0.976
Suprasegmentals	*0.98
Transcription	*0.959
Pronunciation Practice (Independent)	*0.978

\*Significant at 0.05 level and beyond

**Reliability of the Pronunciation Test**

To establish the reliability of the test, the following procedures were undertaken:

- A test re-test method with two weeks interval between the first and the second rating was used on a randomly chosen sample of thirty (N=30) third- year English majors to calculate the reliability coefficient of the test. Table (6) shows the reliability coefficient of the pronunciation test with its entirety. The total coefficient was (0.98) which is acceptable.

**Table (6): Test-Retest Reliability Coefficient of the English  
Pronunciation Test**

Test Components	Test		Re-Test		Correlation	Sig
	Mean	SD	Mean	SD		
Segmentals	9.7	1.72	8.90	1.52	*0.95	0.000
Suprasegmentals	6.17	1.78	5.87	1.22	*0.94	0.000
Transcription	4.00	1.23	3.73	1.26	*0.91	0.000
Pronunciation Practice (Independent)	6.70	1.72	6.37	1.79	*0.94	0.000
<b>Total</b>	25.93	5.90	24.87	5.45	*0.98	0.000

\*Significant at 0.05 level and beyond

**The Total Score of the Test=90**

**Piloting the test**

The test was piloted by administering it to 30 students other than those participating in intervention. Piloting the test aimed to measure

validity, reliability, appropriateness to students' level and test timing. Timing the test was computed by dividing the time taken by each student divided by the whole number of students taking the test. The time of the test was two hours.

## II. The Program

The researcher developed a program based on AI and it was used with the experimental group to enhance students' English pronunciation using ELSA Speak App. (See appendix B). To design the program the researcher went through the following procedures:

1. Building a list of pronunciation aspects needed by third -Year English Majors using the following resources:
  - (a) Reviewing the related literature.
  - (b) Views of TEFL and EFL staff members.
2. Specifying the general and specific objectives, content area, the, learning activities and methods of evaluations.
3. Designing the sessions: the program consisted of fourteen sessions. They are as follow:

**Session One:** An orientation session about ELSA Speak App., its usage and how it works?

**Session Two:** Vowels: Short vowels

**Session Three:** Vowels: Long vowels

**Session Four:** Vowels: Diphthongs

**Session Six:** Consonants: The Plosive consonants

**Session Seven:** Consonants: The Fricative Consonants

**Session Eight:** Consonants: The Affricate and Nasal Consonants

**Session Nine:** Consonants: The Approximants and Other consonants

**Session Ten:** Syllables

**Session Eleven:** Word stress

**Session Twelve:** Sentence stress

**Session Thirteen:** Assimilation

**Session Fourteen :** Intonation

### Information about ELSA Speak Application

There are two accounts free and paid accounts. There two accounts of the paid ELSA Speak app are the pro and the premium.

#### The difference between a free account and a paid account

**Free account:** Students can download ELSA app. completely free-of-charge and register to start using the free version of ELSA:

- Two free lessons on each Planet, Topic, and Game type.

- AI Dictionary feature which allows students to search for any word, as well as learn and practice pronouncing them.
- Study sets from ELSA community to practice vocabulary.
- Create students' personalized study sets to improve their vocabulary and get instant feedback on their pronunciation.
- Test their English level with the Assessment Test.

**Paid account:** ELSA Pro membership is accessible all the lessons and content in ELSA Speak:

- Over 3,000 lessons organized into the 22 key skills needed to master English pronunciation.
- ELSA Pro's ad-free experience will help students stay focused and complete lessons faster.
- Access to advance feedback and identify their top areas for improvement.
- ELSA delivers a customized learning plan developed uniquely for students to help them make progress quickly.
- ELSA tracks students' progress so they can see how far they've achieved.

### **Procedures of using ELSA Speak App**

1. Each student signs up for an account first. The application is available on (<http://apple.co/1QFL1GR>) and Android (<http://bit.ly/1nkmrk1>).
2. Take assessment test: students are recommended to take the assessment test before they begin practicing. To take the test, they have to tap "Learn Faster" on the home screen. The test identifies which skills they are the weakest and recommends the right exercise to practice.
3. Set a goal and practice regularly; ELSA users improve their pronunciation within 4 weeks if they commit to practicing 10 minutes daily.
4. Follow the customized lesson plan; the lessons will get harder as they move the screen. Each lesson will address one particular sound. There will be a list of lessons with different difficulty levels; like easy, medium and difficult. There are four types of Lessons:

### **A. Pronunciation**

Students read the word or phrase and it gets the color "green" if pronounced correctly. It turns to "yellow" if it is almost correct and "red" if it is incorrect. Students can tap to receive detailed results of their pronunciation. Also, they can skip that word or sentence. ELSA will automatically save the word into the "Word Bank" to practice pronouncing it later.

### **B. Listening**

The recording of the word is played and students have to identify the correct word or a word is shown and they have to identify the right way to pronounce it.

### **C. Syllable Stress**

Here, a word or phrase is shown and students have to put the stress on the part of the word which has a larger font size when speaking.

### **D. Conversation**

Students have the opportunity to practice real life conversation with ELSA Speak immediately when the microphone turns green. They can tap on the next arrow to continue the conversation.

## **5. Using the Pronunciation Dictionary**

If students have a word and they think they are mispronouncing it, they can go to the dictionary and check their pronunciation. They also can view the videos of how each word is spoken by native speakers in real contexts. They can check the list of topics on the App. to learn more about common words or phrases in different situations; ILETs, Job Interviews, Travel, Relationships and more.

## **General Objectives of the Program**

- Recognize of the domain of phonology.
- Recognize of the physical description of the vowel sounds.
- Recognize the production of the short vowel /I/, /e/ and /æ/.
- Correctly pronounce the short vowel /I/, /e/ and /æ/.
- Use the short vowel sounds /I/, /e/ and /æ/ effectively in speech.
- Recognize the production of the short vowel sounds /Λ/, /ɒ/, /ʊ/ and /ə/.
- Correctly pronounce the short vowel sounds /Λ/, /ɒ/, /ʊ/ and /ə/.
- Use the short vowel sounds /Λ/, /ɒ/, /ʊ/ and /ə/ effectively in speech.

- Recognize the production of the long vowel sounds /i:/, /ɑ:/, /ɜ:/, /u:/ and /ɔ:/
- Correctly pronounce the long vowel sounds /i:/, /ɑ:/, /ɜ:/, /u:/ and /ɔ:/
- Use the long vowel sounds /i:/, /ɑ:/, /ɜ:/, /u:/ and /ɔ:/ effectively in speech.
- Recognize of the diphthong sounds /eɪ//eɪ/, /aɪ/ and /ɔɪ/.
- Correctly pronounce the diphthong sounds /eɪ//eɪ/, /aɪ/ and /ɔɪ/.
- Use the diphthong sounds /eɪ/, /aɪ/ and /ɔɪ/ effectively in speech.
- Recognize the production of the diphthong sounds /ɪə/, /eə/ and /ʊə /
- Correctly pronounce the diphthong sounds /ɪə/, /eə/ and /ʊə /
- Use the Diphthong sounds /ɪə/, /eə/ and /ʊə/ effectively in speech.
- Recognize the production of the diphthong sounds /aʊ/ and /əʊ/.
- Correctly pronounce the diphthong sounds /aʊ/ and /əʊ/.
- Use the diphthong sounds /aʊ/ and /əʊ/ effectively in speech.
- Recognize the physical description of the consonant sounds.
- Recognize the production of the plosive consonants /p/, /b/, /t/, /d/, /k/ & /g/.
- Correctly pronounce plosive consonants.
- Use the plosive consonants effectively in speech.
- Recognize the production of the fricative consonants /f/, /v/, /s/, /z/, /θ/, /ð/, /ʃ/, /ʒ/ and /h/.
- Correctly pronounce the fricative consonants.
- Use the fricative consonants effectively in speech.
- Recognize the production of the Affricate consonants /tʃ/, /dʒ/.
- Correctly pronounce the Affricate consonants.
- Use the Affricate consonants effectively in speech.
- Recognize the production of the Nasal Consonants /m/, /n/ and /ŋ/.
- Correctly pronounce the Nasal consonants.
- Use the Nasal consonants effectively in speech.
- Recognize the production of the Approximant consonants /l/, /r/, /j/ and /w/.
- Correctly pronounce the Approximant consonants.
- Use the Approximant consonants effectively in speech.
- Recognize the production of the Lateral Approximant sounds.
- Correctly pronounce the Lateral approximant sounds.
- Use the lateral Approximant sounds effectively in speech.
- Recognize of the concept of a Syllable.

- Produce syllables effectively.
- Recognize the concept of word stress.
- Correctly produce word stress
- Use word stress effectively in speech.
- Recognize the concept of Sentence Stress.
- Correctly Produce Sentence Stress.
- Use sentence stress effectively in speech.
- Recognize the concept of Assimilation.
- Produce assimilated words correctly.
- Use assimilated words effectively in speech.
- Recognize the concept of Intonation and its Patterns.
- Correctly produce intonation patterns.
- Use intonation patterns effectively in speech.

### **Methods of Presentation & Training Techniques**

The main teaching methods and training techniques adopted in the program were:

- Video Modeling on the production of the focus sounds.
- Pronunciation Modeling
- Pronunciation drilling
- Voice Recording and Peer-assessment.
- Whole Class Instruction
- Public Presentation
- Free & Guided Practice
- Group and Individual Work
- Free Speaking
- Turn -Taking
- Interactive Communication

### **The Role of Instructor**

- The instructor has to introduce the target new information and help students to effectively upload and use ELSA Speak Application.
- The instructor has to organize the class, seating arrangements and instructional resources in order to fulfill the ILOs of the program.
- The instructor observes critically students' pronunciation. He/She has to provide them with objective and constructive feedback and discuss possibilities for further enhancement.

### **The Role of the Students**

- Students are supposed to use ELSA Speak App. effectively for the purpose of enhancing their pronunciation.



- Students are supposed to make use of the customized lesson plans provided by ELSA Speak App.
- Students have to observe carefully how the sound units are correctly pronounced.
- Students have to effectively perform the assigned activities to practice segmentals and suprasegmental features of language.
- Students have to perform a number of activities individually, in pairs or in small groups.
- Students have to make use of the constructive feedback given by the teacher and by ELSA Speak app. to modify their pronunciation.

### **Evaluation Techniques**

Evaluation of the Intended Learning Outcomes took place within two dimensions:

Lesson Evaluation: At the end of each lesson, learners were asked to respond to:

- Completion Items
- Multiple choice Items
- Matching Items
- True- False Items
- Listening excises.
- Minimal Pairs Exercises
- Productive exercises.

### **Results, Discussion, Recommendations and Suggestions for further research**

#### **Results**

#### **Testing the hypothesis of the study**

There would be a statistically significant difference between mean scores obtained by the participants of the experimental and the control groups on the English pronunciation post-test, favoring the experimental group.

Analysis of data using the ' t'-test showed that the obtained t-value (29.14) is significant at the 0.05 level and beyond. Thus this hypothesis is accepted. Table (7) below represents a summary of the analysis of the data obtained in the post-performance of both the experimental and control groups.

**Table (7)**

**Means, Standard Deviation, t-value, Eta-Squared and Significance of Difference between the Mean Scores Obtained by Participants of the Experimental and the Control Groups in the post Administration of the Pronunciation Test**

Group	No. of Participants	Mean	SD	DF	t-value	$\eta^2$
Control	25	29.16	3.53	48	*29.14	0.95
Experimental	25	71.12	6.27			

\*Significant at 0.05 level and beyond

**The total score of the test =90**

Table (8) below presents the detailed t-values of students' results on each component of the English Pronunciation test

**Table (8)**

**Means, Standard Deviation, t-values and Significance of Students' Results of the Post Administration of the English Pronunciation Test on each Component**

Test Components	Experimental Group		Control Group		DF	t. value	Sig. level
	Mean	SD	Mean	SD			
Segmentals	20.36	1.98	10.08	1.73	48	*19.57	.000
Suprasegmentals	22.52	2.00	6.08	0.76		**34.03	.000
Transcription	6.88	1.09	4.84	0.80		**38.38	.000
Pronunciation Practice (Independent)	21.36	2.06	7.32	1.75		*25.98	.000
<b>Total</b>	71.12	6.27	29.16	3.53		*29.14	.000

**\*Significant at 0.05 level and beyond**

To ensure the effectiveness of using ELSA Speak application in enhancing third- year English majors' English pronunciation, the effect size was tested by using Eta-Squared formula ( $\eta^2$ ) as shown in table (7) , the obtained  $\eta^2$  value (0.95) is considered highly effective. Nassar (2006) asserted when the Eta-Squared value is less than 0.1 the effect is considered weak, when it is more than 0.1 and less than 0.6 the effect is considered moderate, and when it is more than 0.6 then the effect is high. Thus, ELSA Speak Application is considered highly effective in enhancing prospective teachers' English pronunciation.

**Comparing the Mean Scores of the Experimental and the Control Groups in the Pre-Post Administration of the Pronunciation Test**

The hypothesis of the study implicitly predicted there would be a statistically significant difference between mean scores obtained by the

participants of the experimental and the control groups on the English pronunciation post-test , favoring the experimental group.

Analysis of the collected data using the 't'-test showed that the obtained t-value of the pre and the post comparison of the experimental group (36.80) is significant at the 0.05 level whereas that of the control group (5.50) is also significant at the same level as shown in table (9) below.

Table (9) shows that the obtained t-values of the pre- and post-comparison of the experimental group are all significant at the (0.05) level and beyond throughout the whole components of the English pronunciation test.

**Table (9) : Means, Standard Deviation, t-values and Significance of Difference between the Pre-Post Performances of both the Experimental and Control Groups in the English Pronunciation Test**

Test Components	Group	Pre	Post	Mean Difference	SD	DF	t-value	Sig. Level
Segmentals	Exp.	<b>8.04</b>	<b>20.36</b>	<b>12.32</b>	<b>2.19</b>	24	<b>*28.09</b>	<b>.000</b>
	Con.	8.36	10.08	1.72	2.23		*3.86	.001
Suprasegmentals	Exp.	<b>5.28</b>	<b>22.52</b>	<b>17.24</b>	<b>2.01</b>	24	<b>**42.97</b>	<b>.000</b>
	Con.	5.40	6.08	0.68	1.25		*2.72	.012
Transcription	Exp.	<b>3.44</b>	<b>6.88</b>	<b>3.44</b>	<b>1.73</b>	24	<b>*9.92</b>	<b>.000</b>
	Con.	3.36	4.84	1.48	1.29		5.71	.000
Pronunciation Practice (Independent)	Exp.	<b>6.76</b>	<b>21.36</b>	<b>14.60</b>	<b>2.24</b>	24	<b>**32.65</b>	<b>.000</b>
	Con.	5.56	7.32	0.76	2.40		1.58	.127
Total	Exp.	<b>23.52</b>	<b>71.12</b>	<b>47.60</b>	<b>6.47</b>	24	<b>**36.80</b>	<b>.000</b>
	Con.	23.68	29.16	5.48	4.98		*5.50	.000

**\*Significant at 0.05 level and beyond**

### Discussion

Results obtained in the post testing of pronunciation revealed that there are significant differences favoring the experimental group. The degree of improvement reflected that students' English pronunciation has been developed. Participants of the study have only superficial knowledge and little opportunities to practice segmental and suprasegmental features as this conclusion is apparent from students' pre-testing scores in the pronunciation test.

Based on the data obtained from t-test analysis, it can be concluded that students' English pronunciation improved significantly by using ELSA Speak App. The results obviously showed that students' post-test was higher than the students' pre-test. The majority of the students stated that ELSA speak could help them to pronounce words correctly, raise their self-confidence in speaking sessions, and acknowledge their errors.

ELSA's accurate speech recognition technology helped students recognize the slightest of differences that exist between their pronunciation and the native model. The application also tried to cater to

individual pronunciation needs by allowing them to select their native language in order to provide more effective instruction and feedback. Students in this application had the chance to adjust the difficulty level of the prescribed exercises.

As students speak with ELSA, ELSA identifies where their mistakes and gives tips and offers plans on how to correct their pronunciation. The first step was to take a test. This test identifies which skills students are weakest and recommends the right exercises to practice. Teaching students how to avoid epenthesis through examples was emphasized. Epenthesis is the insertion of a vowel, usually between consonants that are not allowed to stand together by the phonotactic rules, rules which determine the possible sequences of sounds in a language. One clear example of epenthesis is the pronunciation of most students of the word "*sometimes*". It is mostly and incorrectly pronounced /sʌmtaɪmɪz/ whereas the correct pronunciation is /sʌmtaɪmz/ without inserting the vowel /ɪ/ before the last /m/.

Students started with learning sound units "phones". Once mastering this they were directed to learn about word stress and sentence stress then assimilation and intonation. This would not only help students pronounce the words more correctly but also helped to make their pronunciation sound more natural. Students followed a strict study road map which ensured that they could get the best out of their time spent practicing with ELSA.

The activities included in the program were useful and achieved an ultimate goal which was to direct participants' attention to the correct pronunciation. To ensure that learning was differentiated and that evaluation had moved from 'everybody gets the same' to 'everybody gets what he/she needs, some free speaking activities (e.g delivering a public reading of a story or a poem, information gap activities, reasoning -gap activities , role plays, assimilation, etc.) were also designed to involve the learners in the act of producing language and in exchanging information with the purpose of creating mutual understanding and making sure of correct pronunciation . These types of formative assessment required one-to-one feedback.

### **Students' Reflections on the Program**

Students wrote down in their reflection log a number of positive reflections describing their experience of using ELSA Speak Application, the struggle they faced at the beginning to manage their way around , the fun they had when recording their voice reading the assigned sentences then knowing how far their pronunciation approximate the native one. This kind of high sprit not only motivated them to learn, it insured high

level of participation all day long. They all were astonished with how phonology can be easily learned through watching the YouTube videos and using the application. Putting this in their own words:

- " *ELSA Speak helped me correct my pronunciation when I speak in the English language, I became aware of my pronunciation, whether it is correct or incorrect while speaking through the app.*"
- " *I have been struggling to understand the correct pronunciation in my conversation and phonology sessions, but nothing helped me until I utilized this ELSA App.*"
- " *The Word Bank in ELSA App. helped me to practice mispronounced words many times until full mastery.*"
- " *ELSA App. can be used anywhere and anytime and the application is easy to understand.*"
- " *I used to hate phonology and I have never thought I would have liked it this much, Now I'm Learning.*"

The researcher had also noticed that they specially liked to play the ELSA's correct pronunciation of their recordings to make sure that they have got the right pronunciation. The lifted up spirits had certainly left a productive and motivating learning atmosphere that they have liked to share, they had the blast of their lives when bragging about their scores in the sessions' evaluation and whether they had accomplished the task or not. This also used to give them a push forward to go ahead and enhance their performance.

Moreover, there was a high level of participation in the communicative activities believing that this was their only chance to produce and develop their language without being intimidated by any negative feedback from others. Students reported great satisfaction and enjoyment of learning during their participation in the experiment and asserted that they no longer intimidated by the act of speaking. They became ready for real conversations with real native speakers and were no longer ashamed of making pronunciation mistakes.

These reflections besides the results gained from data analysis reinforced the fact that learners of the experimental group surpassed their counterparts in the control one in improving their pronunciation. It is noteworthy that the test aimed to assess students' segmentals, suprasegmental, transcription and practicing pronunciation independently. The program provided students with solid information about phonology. This basic information was intended to ensure that learners were fully aware of the " what": the phonological rules of pronunciation, proper production of individual sounds and utterances, the anatomy of sounds,

rules for stress placement , intonation patterns, aspects of connected speech, etc. It also included the 'how' with the help of a wide variety of different media to provide models for pronunciation and sound production provided by the application.

This basic information was intended to ensure that learners were fully aware of what they were required to do in order to catch up with the objectives of each session, be equipped with enough information to accomplish the required oral communicative tasks and thus became more interested in the learning material itself.

The program offered a number of different evaluation techniques including the objective and short answer items. It also enclosed a number of productive exercises (both controlled and free ones). Formative assessment included objective items like multiple-choice, true / false, completion, matching, etc. which were employed after each piece of information to regularly check learners' understanding and monitor their progress.

Summative tests were also embedded at the end of each lesson to evaluate learner's achievement. These tests were comprised of some objective questions along with some exercises, like 'challenging recordings' that required learners to practice controlled speaking or public reading of certain sentences. In these varied assessment techniques, learners were requested to spot the difference in meaning when using different stress or intonation patterns. This helped learners assess their understanding and thus, take possible remedial procedures if comprehension was blocked.

To conclude, ELSA Speak Application managed to enhance prospective teachers' English pronunciation. This was obviously seen in the participants' post testing. This conclusion was consistent with the studies developed by the studies conducted by Karim et.al (2023), Akhmad and Munawir (2022), Nushi and Sadeghi (2021), Darish and Wihadi (2021) and Chen and Li (2016).

### **Conclusion**

Using English Language Speech Assistant (ELSA) speak application can be a very useful medium in English learning, especially pronunciation, which is one of the important factors in mastering speaking skills in English by correcting incorrect pronunciation and explaining how to pronounce correctly in English. Students can practice English language skills anytime and anywhere. Practicing with ELSA Speak App. regularly can help improve students' ability in English.

### **Implications**

A major change in teacher's attitudes towards pronunciation instruction is indispensable and it is their job to speed up change. By incorporating

current research and its implications into their teaching practice, teachers can help learners gain the skills they need for effective communication in English. It must be borne in mind that teachers are the models for their learners, so first of all they should have good pronunciation; otherwise, they can harm their students.

### **Challenges**

1. Automatic speech recognition would give learners the feedback they need, but unfortunately for sometimes, didn't unlikely reach an accurate enough level.
2. Some students lacked self-confidence in pronouncing words.
3. Some students possessed a very limited amount of vocabulary that could help them to participate in free speaking activities.

### **Recommendations**

**In the light of the results obtained in the current study, a number of helpful recommendations can be drawn:**

1. More Attention should be given to the use of AI applications in enhancing students' pronunciation specially ELSA Speak App.
2. Both in-service and pre-service teachers have to be aware of the benefits of AI applications in language learning
3. Phonology and conversation courses should be devoted to more learning and less teaching; student teachers should be involved in the actual production of language rather than being overwhelmed with abstract information.
4. Student-teachers' articulation system should be enhanced.
5. More attention should be paid to incorporate technology in Language learning and teaching.
6. More emphasis should be given to methods and techniques used in the teacher preparation programs. For better and lasting impact of teaching, newer methods and techniques should be adopted that encourage the involvement of learners into the act of teaching-learning.
7. Staff members of the Faculties of Education should link theory to practice in their attempt to train pre-service teachers. They should encourage learners to practice what they have learned for better outcomes.
8. Developing phonological awareness and pronunciation of pre-service teachers should be amongst the objectives of any teacher preparation program in all faculties of Education.
9. To create long lasting learning, providing an on-going feedback is the best way to demonstrate results. Adding the element of " peer

and self-correction " to help learners get the chance to make up for their mistakes in speaking, should be emphasized in the phonology and conversation courses.

10. Phonology and Conversation courses should be designed and taught in parallel in the teacher preparation programs to link theory to practice.

### **Suggestions for further Research**

1. The present study can be replicated on a larger sample of 3<sup>rd</sup> year English majors.
2. A similar study can be specially designed to train the in-service EFL teachers who need to enhance their pronunciation and phonological awareness.
3. Investigating English Majors' oral communication skills using ELSA Speak app.
4. Investigating English majors' perceptions of ELSA speak App.
5. Investigating other AI applications in enhancing English majors' pronunciation.
6. Investigating the effect of integrating varied oral communicative activities on developing the oral performance of EFL teachers.



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