Sohag University

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Applying Artificial Intelligence for Developing Oral Reading Fluency Among University Students

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Abstract

The current study aimed at investigating the effect of Artificial Intelligence (AI) for developing first year English majors – faculty of education Benha University. The participants were N=30 students at Benha University. Instruments were developed for the purpose of the current study; a pre-post-oral reading fluency test and an oral reading fluency rubric. The study relied on one group. Findings of the study revealed significant differences in the mean scores of the treatment group on the oral reading fluency pretest and posttest in favor of the post measurement. The results showed that AI enhanced the students' oral reading fluency skills. This study concluded with recommendations pertinent to using artificial intelligence as a tool for teaching oral reading fluency and other language skills.

Key words: Artificial intelligence– Oral reading fluency

المستخلص:

هدفت الدراسة الحالية إلى قياس مدي تأثير استخدام الذكاء الاصطناعي على تنمية مهارات الطلاقة في القراءة الشفهية لدي عينة من طلاب تخصص اللغة الإنجليزية –كلية التربية في السنة الأولى جامعة بنها مكونة من ٣٠ طالب تم تطبيق بعض الادوات لتحقيق هدف الدراسة الحالية؛ اختبار طلاقة القراءة الشفهية القبلي/ البعدي، قائمة مهارات طلاقة القراءة الشفهية المطلوبة لدي الطلاب عينة الدراسة بالإضافة الي مفتاح تصحيح اختبار مهارات طلاقة القراءة الشفهية. اعتمدت الدراسة الحالية على مجموعة واحدة قبل وبعد الاختبار، اكدت نتائج الدراسة الحالية على تطوير مهارات طلاقة القراءة الشفوية المناسبة للطلاب عينة الدراسة من خلال (الذكاء الاصطناعي). برهنت نتائج الدراسة على وجود فروق ذات دلالة إحصائية في متوسط درجات المجموعة شبه التجريبية لصالح الاختبار البعدي لقياس طلاقة القراءة الشفهية. فسرت النتائج ايضا أن الذكاء الاصطناعي عزز مهارات القراءة الشفوية لدى الطلاب. وخلصت هذه الدراسة اهمها ضرورة تضمين واستخدام الذكاء الاصطناعي كأداة لتحسين طلاقة القراءة الشفوية والمهارات اللغوية الأخرى.

الكلمات المفتاحية: الذكاء الاصطناعي – مهارات طلاقة القراءة الشفهية

Introduction:

With the deepening of cultural integration, people's demand for English learning is also increasing rapidly. With the rapid development of technology, the era of artificial intelligence has arrived. Learning assistance systems based on artificial intelligence have emerged in an endless stream, which has also innovatively solved the problem of oral language learning. Natural language processing is a computing mode of deep learning by artificial intelligence, which can carry out deep learning and training according to the current goal and finally get the desired result .

Milliner (2021) referred that in light of the English language's reach, not only as a global lingua franca but as the language for technology, science, and advanced research, the connection between English reading fluency and students achieving their professional and personal goals cannot be overemphasized (P.191).

Reading fluency is often considered a synonym of reading speed. It is made up of three sub competencies: accuracy, automaticity, and prosody (Young et al., 2020, p.32). Quezada (2021), stated that reading skill involves much more than the number of words a student can read. Reading fluency is defined as the ability to read a text without much effort, that is, read it without making mistakes, automatically and with the right expression. Accuracy, automaticity, and prosody are the crucial components that must be present so that the process of reading is fluent and facilitates the understanding of the texts (p.577).

Wood (2020) defined automaticity as an individual's ability to read words with minimal effort or signs of struggle. Reading fluency involves one's ability to read orally at a practical rate, with minimal mistakes and appropriate prosody and expression. Both oral reading fluency and automaticity are vital components of learning to read. According to Rasinski (2019), developing and increasing oral reading fluency and automaticity not only affect reading rates and prosody, but also enhance a reader's comprehension of text, to which becomes ever more vital as children move forward from novice, to beginner, and to intermediate readers (p.2).

Reading fluency is rooted in the Theory of Automaticity in reading. Automaticity is the skill to look at printed words and then read them directly and effortlessly Fluency in reading has a relationship with comprehension and academic achievement. It reflects a degree of overall proficiency, and it is an indicator of the skilled reader. "Fluency combines accuracy, automaticity, and oral reading prosody, which, taken together, facilitate the reader's construction of meaning. It is demonstrated during oral reading through the ease of word recognition, appropriate pacing, phrasing, and intonation"(Kuhn et al., 2022, p.242).

Oral reading fluency include accuracy, prosody, and reading rate. To be fluent in reading, students have to master these constructs. The first component of fluency is reading accuracy, which refers to decoding the phonological representations of written words. Automaticity word recognition is the second construct of fluency. It is driven by the automaticity theory, and it implies the speed of recognition and aspects of accuracy (Samuels, 2023). If students have difficulties in word recognition, their comprehension is affected badly and their oral fluency as well. In other words, it may hinder their comprehension; therefore, students may face difficulties in oral fluency.

On the contrary, fluent readers with an appropriate rate of speed recognize words easily with little cognitive efforts. The third construct of fluency is prosody. Reading with prosody means to read expressively in terms of intonation, rhythm, pausing, and stress and emphasize (Groen, Veenendaal & Verhoeven, 2019). Learners differ in their prosodic abilities, which in turn affect their reading fluency. Thus, prosody indicates learners' reading fluency, and it is correlated to its development. Besides, these aspects of fluency affect reading comprehension as indicated by Kieffer & Christodoulou (2020) who pinpointed that fluency is a moderator between executive functions and reading comprehension.

Reading fluency is the ability of a competent reader to read text effortlessly, smoothly, and automatically. To achieve this stage of reading ability, a reader must not only be able to code words; but instead, have the ability to put words together into meaningful sequences. Grabe (2024) states that reading fluency involves word recognition accuracy and automaticity. Thus, a fluent reader can process text rapidly (which showed that they have reading efficacy) Also, utilize prosodic and syntactic mean reading ability at an appropriate speed without errors in pronunciation and intonation (P.211).

Oral reading fluency is the ability to read texts aloud with accuracy, appropriate speed and prosody (expression and phrasing). ORF is the ability to read a text both orally and silently with correct speed, accuracy, and expression. Reading fluency has been identified as a key component of successful reading (Konza, 2016)

Helwa (2014) also stated that reading fluency is the ability to read a text accurately, smoothly, quickly, and with expression (prosody). There are two types of fluency: oral and silent reading fluency. Silent reading tends to be a better method of assessing reading comprehension, while oral reading provides important information about the reader's proficiency in applying reading strategies. Fluency develops over time with practice (P.293).

competence in general, prosody remains the most forgotten element of the skills that make up reading fluency. Prosody is the part of phonology in charge of studying phonic or supra-segmental phenomena. The prosodic features also

include volume, rhythm, intonation, phrasing and pausing when reading aloud (Quezada, 2021, p. 578).

Reading fluency has been an object of research in language acquisition and language teaching for a long time. Numerous attempts have been made to explore the nature of reading fluency as well as techniques to improve reading speed and reading comprehension (Yến,2021, p.1). Goldfus (2014) stated that reading fluency involves the rapid, smooth, accurate reading of connected text with little focus on the mechanics of reading (p.261).

Reading fluency as a prerequisite to decoding words and comprehension was a surprise to many researchers as it had been traditionally ignored in reading programs. If students are unable to automatically recognize a substantial amount of words in their texts, their reading becomes laborious and slow, inhibiting comprehension and, possibly diminishing motivation to read (Rasinski, 2016, p.164).

Amin (2022) emphasized that one of the challenges in teaching a foreign language is: finding appropriate ways to enable students to develop their reading fluency (p.211). According to Salarvand et al., (2022) learners' struggle with fluency in reading can be a significant hurdle to proficiency in their overall reading comprehension and competency. Hence, there must be some pedagogical strategies for developing reading fluency (p.77).

Despite the importance that has been given to fluency in the last decade, even when talking about reading competence in general, prosody remains the most forgotten element of the skills that make up reading fluency. Prosody is the part of phonology in charge of studying phonic or supra-segmental phenomena. The prosodic features also include volume, rhythm, intonation, phrasing and pausing when reading aloud (Quezada, 2021, p. 578).

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Amin (2022) in her study indicated also that reading skills range from the ability to comprehend written texts toward oral fluency skills. Fluency appears in the teaching of reading to mean reading ability at an appropriate speed without errors in pronunciation and intonation. Fluency gives an indication of students' proficiency in the language. Besides, fluency is a significant skill that is correlated with comprehension and academic achievements. It is the medium between comprehension and word recognition. Without reading comprehension, students will not be able to understand the material of study. So, it is necessary to develop oral reading fluency and comprehension (p.211).

According to Pettela (2020), English language learning is one of the necessary educational objectives at a personal, academic, and occupational level. It is dependent on the educational programs and methods that focus on building incentives and positive attitudes towards language learning, and employing skills in communicating, teaching, and learning (p.896).

In recent years, more different interactive educational technologies have become popular and impactful in the educational culture. On one hand, students use tablets instead of copybooks. On the other side, teachers and educators utilize different learning platforms such as Google Classroom, Edmodo, Moodle, Microsoft teams and many more. In these virtual classrooms, instructors and learners can easily hold class meetings, receive assignments, get quick access to all resources and materials posted by the teacher. Besides, teachers can grade students' assignments with the help of some computer assisted intelligent tutoring systems (Chassignol et al.,2018, p.17).

The main objective of innovative educational technologies is to prepare a person for life in an ever-changing world (Rahmatova et al.,2020, p.5). At the same time, we can observe that recent advances and new trends in education and there are now several terms that are mostly used such as Virtual Reality, Augmented Reality and Artificial Intelligence and their application to educational process (Chassignol et al., 2018, p.18).

The term "artificial intelligence"(AI) was constructed first in 1956 by John McCarthy (McCarthy et al.,2006, p.12). John McCarthy coined the term as a branch of computer science concerned with making computers behave like humans. It is more permanent, consistent, less expensive, has the ease of duplication and dissemination, can be documented, and can perform certain tasks much faster and better than human. Thus, it is effective in educational

technology to make the teaching learning process more effective and concrete (Verma, 2018, p.5).

There are several definitions of AI that currently can be found in the literature. Sheikh et al., (2023) said that in its strictest definition, AI stands for the limitation by computers of the intelligence inherent in humans (p.5). Chassignol et al., (2018) stated that AI is the field of computer science dedicated to solving cognitive problems commonly associated with human intelligence, such as learning, problem-solving, and pattern recognition (p.17).

Harkut et al (2019) also define AI as any task performed by a program or a machine, which otherwise humans need to apply intelligence to accomplish it. It is the science and engineering of making machines to demonstrate intelligence especially visual perception, speech recognition, decision-making, and translation between languages like human beings (p.12).

AI makes use of algorithms, which are logical sequences of processes, as well as developed cognitive electronic systems. It is highly expected to have a significant effect on the topics we teach, as well as having a significant impact on many other fields of life (Abdelkader, 2023, p.7).

According to Zhu (2017), the concept of AI refers to an automated application that imitates human intelligence thought such as analyzing, learning, and self- correction. It includes computer science, cybernetics, information theory, linguistics, and other disciplines. In the era of AI, humans can live, hear and work in a simulated environment (p.253).

Aldosari (2020) defines AI as a system that can simulate and implement smart applications on computers or smartphones to interact with the world, doing many tasks normally instead of humans. He also defines AI as a variety of methods, techniques, and tools for creating models and solving problems by simulating the behavior of perceived people (p.145). Salas-Pilco et al., (2022) mentioned that AI has become an integral component of the learning and training process. This type of technology can make learning English easier and more enjoyable (p.4).

Majid & Lakshmi (2022) defined Artificial Intelligence (AI) as one of the disruptive technologies which is being used to customize the experiences of various learning groups, instructors, and tutors. It is considered the most in-demand technology in today's education system. It is expected that AI will enhance the education system worldwide. They assued that AI has the potential for enabling students to achieve their goals and streamline the process of education. It can analyse the students' previous learning history, identify their weaknesses, and improve the upcoming learning opportunities for personalized learning experiences (p.14).

Sari et al., (2023) highlighted that Artificial Intelligence (AI) has emerged as a viable aid in the field of education, including language acquisition. As the demand for English language skills continues to grow, educators and researchers are exploring innovative approaches to enhance language learning outcomes. AI is increasingly being explored as a promising tool to support and enhance language learning (p.750).

Viktorivna et al., (2022) claimed that the importance of using AI applications has been essential for creating written texts, developing students' skills in constructing sentences and building up texts, and practicing writing and reading skills. It can transform the functioning of the education system, increase the competitiveness of institutions and empower teachers and students at all levels (p.263).

Rusmiyanto et al, (2023) assured that as the demand for English language skills continues to grow, educators and researchers are exploring innovative approaches to enhance language learning outcomes. One such approach that has gained considerable attention is the integration of Artificial Intelligence (AI) technologies into English language instruction (p.751). They also referred that the integration of AI in language learning environments offers numerous possibilities for fostering the four fundamental language skills: speaking, listening, reading, and writing. AI- powered technologies such as speech recognition systems, chatbots, virtual tutors, and language learning applications have emerged as innovative tools that can provide learners with interactive and immersive language learning experiences.

These technologies offer features such as real-time feedback, adaptive assessments, and personalized content, which have the potential to enhance learners' communication abilities and accelerate their language acquisition. Furthermore, the use of AI in language instruction has the potential to promote learner autonomy, as learners can access resources and receive feedback independently, anytime, and anywhere (P.751-752).

Whitney et al., (2023) has examined the effect of a digital reading fluency program that incorporates evidence-based practices such as repeated reading, immediate error correction, modeling, and graphing of performance to improve the oral reading fluency of four elementary students with significant reading difficulties and the study showed a great impact of using this digital program on developing students' oral reading fluency (p.263).

Srinivasan and Murthy (2021) in their study, have presented the evidence of the impact of technology-aided instruction on reading using an AI-based multi-sensory technology platform across a large cross-section of government schools in India. The study focused on reading and comprehension in the English language. The intervention enhances the instructional effectiveness of the teachers and the learning ability of the students within the existing instructional

environment. Analysis of the assessments has showed that (Read to Me) interventions has a positive impact on English reading and comprehension among students (p.16).

According to the literature review in artificial intelligence in education, studies referred to the significance of using the AI in developing language skills of writing fluency. In Abdel-Kader's study (2023), the researcher concluded that there was a significant development in learners' writing fluency as a whole. It was also effective in developing their language fluency as a whole. Al applications encouraged learners' discussions and solving problems. AI applications facilitated fruitful engagement in natural verbal language abilities and writing assignments (P.142).

Al Hammadi (2023) in her study (which was conducted in UAE) assured the superiority of the use of artificial intelligence applications on the usual method of teaching, in developing the motivation of the experimental group students in their reading skills for many reasons, the most important of which is that learning with artificial intelligence applications is a style of blended learning, in which the use of technology is activated in learning in a way that enables learners to receive conceptual knowledge with effective educational methods and from different educational sources (P.208).

Other studies investigated the impact of AI in developing oral language skills in general. In Ali's study (2020), results indicated the effectiveness of using artificial intelligence application on developing speaking skills is (1.24). It is an acceptable degree of significance as it ranges from (1) to (2). Thus, using artificial intelligence in teaching EFL for sixth year primary school pupils was effective on developing their speaking skills (P.102). Ghoneim and Elghotmy (2021) referred to the effect of using AI to enhance primary stage pupils' listening skills. The results revealed a noticed development in the experimental group's listening skills (p.22).

Junaidi et al., (2020) and Zou et al., (2023) in their studies revealed that AI has been significant in improving learners' speaking skill. Zou et al., (2023) revealed that AI speech evaluation programs were perceived and tested as effective in improving participants' various speaking skills. The findings suggested that AI speaking speech evaluation programs could (1) provide more feedback regarding fluency and pronunciation in reading texts aloud tasks while the content of speech in spontaneous speaking tasks and (2) offer more intuitive speaking feedback and corresponding practice suggestions and (3) provide detailed textual speaking feedback (4) emphasize the accuracy of the scoring system and develop improvement tracking functions to assist EFL learners in developing speaking skills effectively (p.7).

ElShazly (2020) in her case study, demonstrated the effects of artificial intelligence on English speaking anxiety and speaking performance. She

asserted that AI chatbots potentially improved the learners' FL speaking gains (P.12). Kim (2019) conducted a study on the use of AI in improving English Grammar Skills. Makhlouf (2021) studied the effect of artificial intelligence-based application on Saudi preparatory school students' EFL speaking skills. In his study, findings of the study showed that the AI-based App of ELSA was effective in helping the non- English major students improve their EFL speaking skills in the preparatory year (P.51).

Al applications have been investigated in Egyptian EFL research based on the value they add to language teaching or learning. In this view, Abdel Khalek, Mawgoud, & Ahmed (2020 identified ten key applications that can be used in English language earning. These applications included adaptive learning, automated grader, Chabot, chat campus, data accumulation, personalized learning, proctoring, smart content, virtual facilitator, and Pop Bots. In a university level, Al Mukhallafi (2020) highlighted the use of Al systems such as Intelligent Tutoring Systems, Activating the Internet. Activating Hypermedia, Activating distance E-learning. Al applications can be used in different EFL oral reading fluency contexts using variety of applications, tools and systems that can enhance various language skills.

Al applications can be directed to motivation and enhancing the teaching and learning environments in EFL domain. There are various Al applications that are tailored to learner motivation through oral reading fluency which included developed hybrid systems, electronic neural systems, application for developing algorithms, electronic auto-copying, adaptive electronic platforms, and advanced controlling systems. The study provided an overview about the vast use of Al tools in various learning environments. There are various Artificial Intelligence powered tools that are used for developing oral reading fluency such as Google Lens G-translate, Google Assistant. These tools are used in Andy, Elsa speak. Al grammar, Google Documents, A-chat Bot, checking style correction, plagiarism checking and text source word recognition, sentence and paragraph translation, grammar .

Artificial intelligence rationale :

Artificial intelligence is based on many different methods and theories such as :

- Cognitive language model
- Constructivism theory
- Information processing theory
- Schemata theory
- Computer-assisted language Learning approach (CALL).

Implementation of artificial program

AI can be implemented through the following:

Stage one situation:

- The instructor introduces the students to the lecture and concepts of artificial intelligence.
- Clearly identifies aims and particular objectives which students should attain.
- Activate students to refresh their learning process.
- Expose students to real life situations through authentic experience.

Stage two: groping

- The instructor encourage students to different sources for virtual world.
- The instructor manage the discussion panel for students and organize learning process.

Stage three: bridge

- The instructor provide different activities to the students to connect their prior knowledge with new knowledge.
- The instructor illustrate new objectives
- Encourage students to share their knowledge and experience with their peers.

Stage four: task

- Design authentic text for the class.
- Design real life activities and daily-life situations which related to the topics.
- Encourage students to discus and share their ideas together.
- Help students to present the different texts orally.

Stage five feedback

The instructor explain the task and give feedback for the class

The context of the Problem:

The researcher has observed that oral reading fluency is not given the due attention at university level as English instructors believe that supporting

students to be EFL proficient readers is not their ultimate aim or main focus. They mostly tend to teach oral reading fluency as a task for preparing students to exams.

They have never thought that helping their students be fluent readers, concerning accuracy, fluency, and prosody, can help them track their progress in reading as an essential skill and will also motivate learners to improve their EFL reading skill which could be essential to be more appreciated in their communities and may open the doors for better future job opportunities.

According to literature review, Helwa (2014) has referred that students avoid reading aloud for fear that they could make mistakes in pronunciation, they do not have the good speed rate for reading fluently, they can skip words and intrude others while reading. Their readings are full of hesitations and repetitions. They make false starts and mistakes in pronunciation. In addition, they lack the ability to comprehend what they read (p.301).

Amin (2022) referred in her study that teachers find it challenging to find appropriate ways to enable students to develop their reading comprehension. Repeated reading and listening-while-reading are two significant strategies that were used in this study to enhance students' fluency and comprehension (p.217).

Ibrahim (2020) investigated the use of educational broadcasting to prove how it is effective in developing EFL oral reading fluency skills. She concluded that the participants became fluent readers after being helped to develop the automaticity skills: (reading the text with appropriate rate and speed) .

Statement of the Problem:

In spite the importance of EFL oral reading fluency skills for university students, they lack oral reading fluency skills. Therefore, the present research aims at examining the effectiveness of using some artificial intelligence applications for developing faculty of education EFL students' oral reading fluency skills.

Questions of the Study:

This study attempts to answer the following questions:

1. what are oral reading fluency skills needed for first year faculty of education students
2. what are the requirements of oral reading fluency for first year faculty of education students.
3. What is the effectiveness of using some artificial intelligence applications for developing faculty of education EFL student’ oral reading fluency?

Objectives of the Study:

The significance of the study lies in what it can provide for:

1. University students at faculty of education enrolled in English section as it helps in:
   - Developing their oral reading fluency skills in general and enable them to be more motivated and less anxious toward reading aloud, thus, reduce mistakes and to be competent readers for their future career.
   - Helping them to develop their automaticity in oral reading.
   - Helping them to read with prosody.
   - Motivating them to read clusters of words together in a meaningful way.
   - Reading orally and showing their comprehension of the written text to make sense of what's read.
2. **EFL instructors as it helps in:**
   - Draw the attention of instructors towards the importance of using AI technology in EFL Reading instruction.
   - Focusing their attention on the benefits of AI applications in EFL oral reading fluency skills in classrooms.
   - Providing them with AI applications that can be effective in teaching and evaluating students' EFL oral reading fluency.
   - Draw the attention of instructors toward the importance of ORF in the EFL courses at university .

Significance of the study:

- Provide faculty of education students with a new program based on artificial intelligence for developing their oral reading fluency.
- Developing required oral reading fluency skills for faculty of education EFL students.
- Motivate faculty of education EFL students to use artificial intelligence in their learning .

Delimitations of the Study:

The current study is limited to:

- Some oral reading fluency sub-skills appropriate for N=30 freshmen faculty of education students' English section, Benha University.

- Some artificial intelligence applications for developing EFL oral reading fluency skills among faculty of education students' English section Benha University .The application was at the first semester 2024/2025.

Instruments and Materials of the study:

The researcher designed the following tools to fulfill the purpose of the present study:

- An EFL oral reading fluency sub-skills checklist
- An EFL oral reading fluency test (used as pre and post-test) and an analytic rubric for scoring it; each one is divided into three parts as follows:
  a) Prosody part
  b) Accuracy part
  c) Automaticity part
  d) AI Based program

The present study aims at investigating "the effectiveness of an AI oral reading fluency -Based program in developing EFL oral reading fluency skills among Faculty of Education EFL Students. The researcher prepared list of EFL oral reading fluency skills (see appendix A) and EFL pre- post oral reading fluency test (see Appendix B).

A. EFL Oral Reading Fluency checklist:

The purpose of EFL Oral Reading Fluency checklist:

The researcher designed an EFL oral reading fluency list to identify the EFL oral reading fluency skills necessary for first year students enrolled in English Section at the faculty of Education at Benha University.

B. **Sources of designing the EFL Oral Reading Fluency Skills checklist**:

The FFL Oral Reading Fluency List has been taken from various sources from literature and previous studies and books related to EFL oral reading fluency skills.This list has been designed to identify the EFL oral reading fluency skills and sub-skills that are required for second year students in English Section at the Faculty of Education Benha University The following are the list sources, such as:

▪ Palmer(٢٠١٠) ▪ Rasiniski(٢٠٠٦) ▪ Vavra(٢٠٠٨) ▪ Wilger (2008)	▪ Farah(٢٠٠٦) ▪ Hudson&Pullen (٢٠٠٥) ▪ Johnes (2010)	▪ Zukowshi(٢٠٠٩) ▪ Kuhn&Stahl (2006)

Description of the EFL Oral Reading Fluency checklist:

In its initial form, the EFL oral reading fluency list consisted of three main skills (Prosody accuracy& automaticity) Each one of the pre- mentioned main skills was divided into sub-skills as follows:

For the prosody skill EFL students should be able to:

- Identify upper and lower case letters of words.
- Verbalize phonetic sounds when shown graphic symbols.
- Blend sounds to form words in a given reading text.
- Reflect the inflection of punctuation in a given reading text.
- Place vocal emphasis on appropriate words in a given reading text.
- Raise and fall her voice tone at appropriate positions in a given reading text
- Discriminate different sounds in different words.
- Identify the concept of low \soft sounds.
- Compare sound intensities.
- Use vocal tone in a narrative text to represent characters mental states such as excitement, sadness fear or confidence.
- Use punctuation to pause appropriately at phrase boundaries in a given reading text.

Concerning the accuracy skills students should be able to do the following:

- Recognize signal words through context clues.
- Identify the structure analysis for word identification.
- Associate words with their roots in a given reading selection.
- Identify words that have the alternative meaning in the reading text.
- Make a large variety of word association in a given reading text.
- Sort the words which are similar in form and meaning.
- Identify the lexical items mentioned in a given reading text.
- Determine the words that refer to nonverbal communication.
- Indicate whether a word carries a positive negative or neutral feelings in their culture in a given reading text.

Concerning the Automaticity skills, students should be able to:

- Identify main ideas and details in a given reading text.
- Make sequence of information in a given reading text.
- Identify cause and effect relationship in a given reading text.
- Identify the concept of low soft sound and compare sound intensities. Identify the emotional reaction of the author of a given reading text. Interpret the vague parts of the given reading text.
- Discriminate factual versus fictional materials in a given reading text Set the purpose of a given reading text in advance.
- Comment on the reading selection by giving one's opinion.
- Exchange reading selection opinions, ideas and beliefs in a given. reading text.

3.1.1.2. The validity of the EFL Oral Reading fluency checklist:

The EFL Oral Reading Fluency list was submitted to a jury of EFL staff members in curricula and teaching methods (n=15), to identify its validity, they were requested to: (appendix),

check (✓) at the appropriate option beside each skill and sub-skill. They should choose one of five options:

- (very important, Important, Not sure ،Less important, Not important) .
- Determine whether the EFL Reading Fluency skills and sub-skills
- are appropriate or not for the study 's sample.
- Add any skill(s) they thought are appropriate for first year English Section Students.
- Omit any unnecessary skill(s).
- Add any modifications when necessary.
- By the end of the test, the researcher would record the total
- read correctly at the bottom of her scoring sheet.

1.2.5. Piloting of the EFL Oral Reading Fluency Test:

The EFL oral reading fluency test was applied to a sample N=30 first Year English Language Department students at Faculty of Education of first semester of the academic year (2024-2025) to investigate the followings:

- The suitability of the test for students.
- How far the test questions are simple or difficult to make sure that the questions are understood by students.
- The suitability of the time limit for each part of the test.
- The clarity of the instructions of the test.

3.1.2.6. The Validity of The Oral Reading Fluency Test:

In order to validate the EFL oral reading fluency test. it was submitted to jury members in curricula and methods of Teaching English. They were asked to indicate the suitability of the test content for the academic level of the study sample (first Year English Language Department Students at Benha Faculty of Education and the clarity of the instructions for each part of the test They indicated the suitability of the test and how far each question of part (c) of the test assesses the skills intended to measure comprehension Most of the jury members also indicated the suitability of the test to its main objectives and he consistency of part (c) questions to the test's objectives.

According to the jury's' opinions and suggestions. the modifications would be performed to the test 's content to get its final form.

3.1.2.7. The Reliability of The EFL Oral Reading Fluency Test:

For estimating the reliability of The EFL Oral Reading Fluency Test the following two methods were used:

1 -Test - Retest Method:

The EFL Oral Reading fluency test was applied at the beginning of the first semester of the academic year (2024-2025) to a sample of first year English Language Department Students at Benha university, Faculty of Education (n=30) .Then, the test was re-applied to the sample after an interval of time about two weeks .The correlation coefficient (r) between the results of the first and second application of the test is measured using Pearson formula .The reliability Coefficient was (0,78) which is significant at the 0.01 level. This means that the EFL oral reading fluency test was reliable.

2 -The Inter-rater reliability method:

The test was corrected by two raters: The first was the researcher and the second was a lecturer at Department of curricula and teaching methods' Then the correlation coefficient between the scores of the first and the second rater was measured using the Pearson formula. The reliability coefficient was 0.758** for oral reading prosody. the 0.569** for oral reading accuracy,0,869 for reading comprehension which was statistically significant at (0,01) level. Hence, it can be said that the test was reliable.

3.1.2.8. Scoring of the EFL oral Reading Fluency Test:

For the scoring guidelines of the EFL Oral Reading Fluency test.

3.2. The Design of the Study:

The present study followed the one group-pre and post design.

3.2.1. Subjects of the Study:

The participants of the present study were selected from first year students enrolled in English section at Benha Faculty of Education during the first term of the academic year 2024-2025.The study sample was chosen (n=30) according to their oral reading accuracy level. Accuracy is determined by the percentage of words students can read correctly; it has been shown to be a valid measure of reading fluency.

Procedures of the study:

These procedures followed to carry out the present study:

1. Identifying the EFL oral reading fluency skills required among faculty of education freshmen students:
   A. Reviewing the literature and the previous studies related to the EFL oral reading fluency skill and preparing appropriate checklist.
   B. Submitting the list to the jury members to verify its validity.
   C. Modifying the list according to jury's recommendations.
2. Identifying the effectiveness of using some AI applications for developing EFL oral reading fluency skill through:
   A. Reviewing the literature and the previous studies related to oral reading fluency skills and their significance.
   B. Preparing the applications which will be applied on the sample of the study.
   C. Preparing an oral reading fluency sub-skills test used as a pre and posttest one group to make sure that they already lack these skills .
   D. Preparing an oral reading fluency checklist used as a pre and posttest to make sure that they already lack these skills.
   E. Submitting the test and the observation checklist according to the jury's suggestions.
   F. Selecting one group as the experimental and the control group.
   G. Administering the study instruments.
   H. Applying the AI-based applications to the experimental group .
   I. post-administrating the test and the checklist to evaluate the effectiveness of the applied applications.
3. Collecting and analyzing the data statistically.
4. Interpreting the results of the study.
5. Presenting recommendations and suggestions for further studies.

Definition of Terms:

EFL Oral Reading Fluency:

Oral reading fluency (ORF) refers to the ability to read connected text such as paragraphs and passages with appropriate rate, accuracy, and expression, which is an indicator of comprehension (White et al., 2021, p.3).

Oral reading fluency is the ability to read text accurately and quickly. It is reading in which words are recognized automatically. When fluent readers read, they group words quickly to help them gain meaning from what they read. Their oral reading sounds natural, and their silent reading is smooth and unnumbered by an over emphasis on word-by-word analysis (Helwa, 2014, p.294).

According to the present study, oral reading fluency is the ability to read aloud with accuracy, automaticity, and with prosody which means the reader's ability to read a text orally using appropriate pitch, stress and juncture to get the natural intonation and phrasing of the spoken words upon the written text.

Artificial Intelligence:

AI is defined as "the field of computer science dedicated to solving cognitive problems commonly associated with human intelligence, such as learning, problem-solving, and pattern recognition". It is also "the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision making, and translation between languages." (Ma et al., 2018, p.1).

Artificial intelligence is the science that involves a computer performing intelligent tasks that are normally performed by humans, such as learning and problem-solving (Nakase et al.,2021, p.904).

According to the present study, artificial intelligence is defined as a modern trend that copes with today's modern ways of EFL instruction of different skills. It can carry out some tasks that simulate human intelligence that foster the language learning and perform human-like activities such as listening, speech recognition, detecting reading errors, evaluating, tracking progress, giving instant feedback for the purpose of improving oral reading fluency in terms of accuracy, fluency and prosody.

4.1. Findings of the Study:

The overall aim of the AI -Based Program was to develop second year students enrolled in the English Section at Benha University Faculty of Education EFL oral reading fluency skills

To measure the effectiveness of the program the study sample was pre-tested on the EFL oral reading fluency pre-test and post -tested using the If oral reading fluency post -test For comparing the initial and the final scores of the

study sample in the overall EFL oral reading fluency and to find whether here were significant difference between the pre-post assessment of the test the researcher used the one sample T- Test The findings of the study are given below with the hypotheses of the study as follows:

The first hypothesis states that "there is a statistically significant difference between the mean scores of the study sample in the pre-post assessment of overall EFL oral reading fluency in favor of the post assessment of oral reading fluency test.

In order to verify this hypothesis, the one sample T-Test is used to compare the mean scores of the study sample in overall EFL oral reading fluency on the pre-post administration of EFL oral reading fluency test. Table (1) presents the students' mean scores. Standard deviation-value and the level of the significance of the study sample in the pre-post assessment of the overall EFL reading fluency.

Table (1):"t" test between the mean scores of the study sample in the pre-post assessment of overall EFL reading fluency.

Skill	Measurement	N.	Mean	S.D	T-value	D.F	Sig
EFL oral reading fluency	Pre	٣٠	٢٣١,٦٩٧٠	٢٥,٦١١٤٣	٣,٠٨٢	٢٩	٠,٠١
	post	30	246.8713	26.15157			

Findings of the second hypothesis:

The second hypothesis states that "there is a statistically significant difference between the mean scores of the study sample in the pre-post administration of EFL oral reading prosody in favor of the post administration".

For testing this hypothesis. the one sample T-Test is used to compare the mean scores of the study sample in oral reading prosody on the pre-post administration of EFL oral reading fluency test Table2) presents the students' mean scores. Standard deviation-value and the level of the significance of the study sample in the pre-post assessment of the EFL oral reading prosody.

Table (2):"t" test between the mean scores of the study sample in the pre-post assessment of EFL oral reading prosody skills

Skill	Measurement	N.	Means	S.D	T- value	D.F	Sig
	Pre	30	9.667	1.918	5.311	29	0.01
	post						

Table (2) shows that the mean scores is (9.667) for the pre assessment and (11.100 for the post assessment and the standard deviation is (1.919)for the pre-assessment and (1.989)for the post assessment. As shown in the table (2)"there is a statistically significant difference between the mean scores in the study sample in the pre-post assessment of EFL oral "reading prosody in favor of the post assessment ", where the 561 001) which is significant at the (0.01 level of significance Thus, the first hypothesis was supported.

Findings of the third Hypothesis:

The third hypothesis states that "there is a statistically significant difference between the mean scores of the study sample in the pre-post administration of EFL oral reading accuracy in favor of the post administration".

In order to verify this hypothesis. the one sample T-Test is used to compare the mean scores of the study sample in oral reading accuracy on the pre-post administration of EFL oral reading fluency test Table (3) presents the students' mean scores, standard deviation-value and the level of the significance of the study sample in the pre-post application of the FFI oral reading accuracy.

Table (3):"t" test between the mean scores of the study sample in the pre-post assessment of EFL oral reading accuracy.

Skill	Measurement	N.	Means	S.D	T-value	D.F	Sig
EFL oral reading fluency	Pre	٣٠	٩٥,١٠٠	١,٠٩٨	١٠,٩٧٩	٢٩	٠,٠١
	post	٣٠		١,٧٢٦			

Table (3) shows that the mean scores is (95.100) for the pre assessment and (97.614) for the post assessment and the standard deviation is (1.098) for the pre-assessment and (1.726) for the post assessment. As shown in table (3)"there is a statistically significant difference between the mean scores in the study sample in the pre-post assessment of EFL oral reading accuracy in favor of the post assessment ", where the (t=10. 979.p<0.01) which is significant at the (0.01) level of significance Thus, the second hypothesis was supported.

Findings of the fourth Hypothesis:

The fourth hypothesis states that "there is a statistically significant difference between the mean scores of the study sample in the pre-post administration of EFL oral reading rate in favor of the post administration".

In order to investigate this hypothesis, the one sample T-Test is used to compare the mean scores of the study sample in oral reading rate on the pre-post administration of EFL oral reading fluency test. Table (4) presents the students'

mean scores, standard deviation-value and the level of the significance of the study sample in the pre-post assessment of the EFL oral reading rate.

Table (4):"t" test between the mean scores of the study sample in the pre-post assessment of EFL oral reading rate.

Skill	Measurement	N.	Means	S.D	T-value	D.F	Sig
EFL oral reading rate	Pre	٣٠	١٢٠,٦٦٧	٢٤,٣٩٢	١,٣٨٦	٢٩	Not sig
	post	٣٠	١٢٧,١٣٣	٢٤,٥٦٨			

Table (4) shows that the mean scores is (120.667) for the pre assessment and (127.133) for the post assessment and the standard deviation is (24.392) for the pre-assessment and (24.568) for the post assessment, where the t-value is (1.386), p.>0.05. Therefore, there is no statistically difference between the mean scores of the study sample pre and post assessment in oral reading rate in the administration of EFL oral reading fluency test Thus the third hypothesis was rejected as presented in table (4), the study sample didn't develop their oral reading rate.

(1=15. 782.p<0.01) which is significant at the (0.01) level of significance Thus, the fourth hypothesis was statistically confirmed.

Findings of fifth hypothesis :

The fifth hypothesis states that "there is a statistically significant difference between the mean scores of the study sample in the pre-post assessment of EFL reading automaticity in favor of the post assessment

For testing this hypothesis, the one sample T-Test is used to compare the mean scores of the study sample in EFL reading automaticity on the pre-post administration of EFL oral reading fluency test.

The students' mean scores, standard deviation-value and the level of the significance of the study sample in the pre-post assessment of the EFL reading automaticity.

Table (5):"t" test between the mean scores of the study sample in the pre-post assessment of EFL oral reading automaticity.

Table (5) shows that the mean scores is (126.933) for the pre assessment and (138.167) for the post assessment and the standard deviation is (24.980) for the pre-assessment and (24.757) for the post assessment. As shown in the table (8)"there is a statistically significant difference between the mean scores in the study sample in the pre-post assessment of EFL reading automaticity in favor of

the post assessment ", where the ($t=2.389$, $p<0.05$) which is significant at the (0.05) level of significance Thus, the fifth hypothesis was statistically supported.

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