UTILIZING ARTIFICIAL INTELLIGENCE IN LANGUAGE LEARNING: WHAT ABOUT ENGINEERING STUDENTS' PERCEPTION?

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Abstract: Presented as a technological innovation set to usher in significant changes globally, artificial intelligence (AI) enters various segments of life, especially in the field of education. Civil engineering students, as part of their learning journey, try to apply it in class, especially in aspects of engineering English vocabulary. In the current study, students used the English Language Speech Assistant (ELSA) application. The research method used was descriptive research, where the research subjects were taken from 1 class of 29 students. In this study the questionnaires were used as instruments to collect research data. Based on the results of survey analysis and data collected, it was revealed that students had very good and positive perceptions of using the ELSA application. Students exhibit great joy and enthusiasm in learning engineering English vocabulary using the ELSA application. In addition to offering an effective means of pronouncing vocabulary words, this application's feedback also serves as a motivational factor to learn engineering English vocabulary. Thus, the student's positive perspective on this application of AI can be an indicator of the success of students' language learning in the future.

Keywords: AI assisted learning, ELSA, engineering English vocabulary

INTRODUCTION

In the present era, students, even those enrolled in institutions, possess a profound familiarity with smartphones. Many of these kids utilize cellphones as their primary means of communication. Indeed, certain students utilize many cellular devices. Students commonly utilize cellphones for several purposes, including staying updated with current trends and enhancing their engagement on social media platforms. Novita (2021) describes that there are three functions of the internet as a medium in learning activities, namely as a complement (complementary), supplement (additional), and substitution (substitute). The internet as a learning medium is one option that supports learning activities. Several requirements must be met in the process of technology-assisted lectures: a shift in education from a teacher-oriented learning system (teacher-centered learning) to a student-oriented system (student-centered learning); the growth and increasing popularity of open and long-distance education; and the increasing choice of learning resources available anywhere and at any time (Prayudha, 2023). With this information technology, lecturers can provide

services without having to deal directly with students. Likewise, students can obtain information in a wide scope from various sources through cyberspace using computers or the internet.

The use of information technology, in this case e-learning used on students' computers and smartphones, requires educators who are skilled at utilizing technology and technology to create teaching materials (Suhardiana, 2019). Apart from that, a design is also needed to be able to carry out learning effectively. For example, in the process of learning English (English for Specific Purposes) at the Polytechnic, in a learning plan there is a process to guide actors to design, develop, implement e-learning content by utilizing the available e-learning infrastructure and applications. In the next stage in the implementation of e-learning, there is an evaluation stage which is used to revise or adjust to the previous stages. Instructional design is a dynamic process that can change according to the information and evaluation received aims to improve student learning outcomes so that learning objectives can be achieved.

As educational technology develops, it also develops and influences learning and teaching activities. There are many technologies that can be used as a means of supporting learning coupled with internet access that makes it easier for students to gain broad knowledge. Almost all students now have smartphones that they can use to access the internet. They must utilize the internet for positive purposes. We also contribute to directing students to use the internet productively. One way is to introduce them to application sources that they can use as English learning media. With the development of the system embedded in a smartphone, now we can enjoy the many features and applications that can be downloaded on our smartphones (Ahmadi, 2018; Dewi et al., 2019). Thus, we can use the application to support learning, especially in learning English. At this time there are many applications that can help us learn about pronunciation, vocabulary, grammar, speaking, listening, reading, writing and many more.

The development of artificial intelligence (AI) technology has profoundly transformed multiple facets of human existence, including the realm of education, particularly in the domains of learning and teaching. AI has the capacity to significantly transform multiple industries, and it has become a promising tool for improving the quality of teaching and learning. The field of English language instruction, specifically, encounters numerous obstacles in addressing the requirements of a wide range of learners, particularly when utilizing technological tools for teaching (Prayudha, 2023). Hence, it is crucial to investigate the efficacy of AI in English language instruction to uncover novel prospects in language education. AI in education has been acknowledged by experts for its capacity to engage pupils and offer quick feedback, therefore providing valuable help. An educational technology specialist claims that AI has the capacity to transform language instruction by enhancing accessibility and efficiency for learners from diverse backgrounds (Johnson et al., 2005).

The field of education has witnessed a significant transformation through its integration (Fisher et al., 2014; Sadiku et al., 2022). Artificial intelligence (AI) technology is now widely used in English language teaching and learning to help students and lecturers in higher education, especially in the post-COVID-19 pandemic era where online learning via digital learning platforms has become commonplace by teachers and students around the world. The recent invention of artificial intelligence (AI) learning technologies, such as

ChatGPT, Edmodo, Atomic Learning, Digital Storytelling, ELSA Speak and others in early 2023 has sparked significant changes in English teaching and learning (Jakob & Afdaliah, 2019; Abisay & Apriliaswati, 2021). English teachers can include artificial intelligence (AI) into the learning process, which presents numerous benefits. AI-powered applications can assist students in language acquisition and daily speaking practice (Novita, 2021), while also fostering motivation for language study; the reason for their enthusiasm towards learning is the utilization of technology and smartphones in the learning process (Juvrianto et al., 2018).

One of the tools of artificial intelligence products that can be mentioned in this paper is an application to learn to speak English, namely English learning speech assistant speak; ELSA speaks (English speaking learning aid). The reason for using ELSA as a learning tool in this study is due to students' desire for digital instruction and the ability to access high-quality learning experiences conveniently and flexibly. ELSA is an AI-powered tool designed to enhance pupils' English-speaking fluency. One distinguishing characteristic of this program is its emphasis on pronunciation, enabling it to accurately recognize the speech of non-native speakers and facilitate their progress towards becoming fluent speakers. In addition, the ELSA feature offers comprehensive feedback on the pronunciation of both scripted and non-scripted text, covering aspects such as word stress, pronunciation accuracy, fluency, voice articulation, grammar, and vocabulary analysis. Kholis (2021) mentioned in his research that the formation of ELSA speak designed by Vu Van in 2015 in San Francisco, United States. The ELSA Speak application itself was created by combining artificial intelligence and voice recognition components to help improve the quality of pronunciation in English.

ELSA Speak is an application that uses speech synthesis technology to teach vocabulary and grammar to users (Muamar et al., 2022). With the help of voice recognition technology, ELSA can help users correct and improve English pronunciation with a pronunciation error detection rate of more than 95% (Luu et al., 2021). Apart from that, users can also receive feedback to correct their pronunciation errors, and there are more than 1300 lessons and 70 topics that can be used to practice pronunciation, ranging from words to phrases that are relevant to the user's needs (Tran, 2019).

To start using the application, first download the application on the Play Store for Android users and the App Store for iOS users. After the download process is complete and the application has been installed, the user can immediately run the application. After the initial display opens, the user will be briefly introduced to the Elsa Speak application. Then the user registers an account or can skip to the next stage. When entering the main display, users will find five menus at the bottom. The skills, topics and dictionary menus are menus for starting learning. Menu skills are core and basic learning. Lesson topics menu based on the desired topic. The dictionary menu is learning based on words or sentences filled in by the user. The profile menu contains user accounts as well as application settings. Finally, the progress menu contains the extent to which the user has completed the learning and the results.

From its application in this research, ELSA Speak has several advantages (Pratama, 2021), such as presenting animated English diagrams that show the correct position for each vowel and consonant sound. This allows the user to see the correct position of the mouth when saying the sound, not just hear it; use software programs with speech recognition

features that provide immediate feedback if the user pronounces words correctly, so that the user can repeat the words many times for improvement; and easily accessible at any time and does not require high costs. Users only need to access this application via a laptop or Android cellphone and do exercises according to their free time.

According to reviews from several users that researchers obtained in various forums and from reviews on Google Playstore, ELSA Speak can detect user pronunciation errors with an accuracy of more than 95%. This application can also receive advanced feedback to correct pronunciation errors. This feature is one of the things that differentiates ELSA from other applications. In this way, it is hoped that this application will help students improve their learning to speak English well and correctly, by paying attention to the pronunciation of each word because a word that is pronounced incorrectly will change the meaning of the word.

Several studies related to this have been carried out, in relation to speaking learning, including English pronunciation through ELSA speak media (Akhmad & Munawir, 2022), positive impact of using ELSA speak (Aswati & Indari, 2022), the effectiveness of learning English pronunciation through ELSA speak media (Adityarini et al, 2022), focused on feedback from ELSA speak in the form of correct pronunciation corrections and recommending if there are pronunciations that need to be repeated to users (Nguyen & Pham, 2022). Based on the results of previous research, researchers are interested in analyzing the use of ELSA speak among Civil Engineering students at the Ambon State Polytechnic.

To show the novelty of the research, this current research is replication research so the results may encourage positive perceptions or may even be contradictory. To make it clearer and clearer, the research focuses on how students perceive learning the pronunciation of engineering English vocabulary through the ELSA speak application. In line with the focus of the research, we aim to find out how students perceive learning the pronunciation of engineering English vocabulary through the ELSA speak application media. The limitation of the research here is the use of ELSA speak on students in learning engineering English vocabulary. The benefits in this study are more inclined to theoretical benefits such as related to several challenges in the process of learning engineering English pronunciation by integrating ELSA speak as a learning aid. In addition, it is hoped that other theoretical benefits will motivate students to study, especially for engineering English courses.

RESEARCH METHOD
Research design
This research design applies the descriptive research method proposed by Boudah (2019) to describe what is the focus of this research. It is designed to explore students' perceptions of using the ELSA Speak application in learning the pronunciation of engineering English vocabularies.

Research instruments
We provided an instrument in the form of a questionnaire to 29 students so that the required data regarding perceptions was fulfilled and could be analyzed. In this present study, the criteria for gender, age, and GPA were not used as indicators for selecting

participant samples. However, the sampling criteria in this study were limited to 20 students regarding the use of ELSA speak in Engineering English lectures.

The location of the research was carried out at one of the state polytechnics in Ambon. The information given to students is in the form of statements. The number of statements in the questionnaire given to students was 6 statements. To assess the results of the questionnaire, we used a Likert scale for the questionnaire given. The choice options and weighted scores in the questionnaire can be broken down into: Strongly Agree (SS) score 5, Agree (S) score 4, Doubtful (R) score 3, Disagree (TS) score 2 and Strongly Disagree (STS) has a value of 1. The data that has been collected is analyzed using quantitative descriptive techniques.

Research procedures

In Engineering English lecturing process, students carry out learning by practicing using the ELSA SPEAK application. This application focuses on practicing English speaking, especially pronunciation which can be downloaded and used on a smart phone. ELSA SPEAK is supported by Artificial Intelligence (AI) and Speech Recognition technology. Which means being able to properly correct pronunciation errors made by students. With this application, students were given words or sentences that they must pronounce along with examples of the correct pronunciation, after students heard the pronunciation, they were immediately asked to follow the pronunciation, if students make mistakes in pronunciation, they were given correction and asked to repeat until they can pronounce it. the word correctly. Not only pronouncing words, but students are also trained to differentiate several words with similar spellings but different pronunciations and other exercises. Students in English for Civil Engineering lecture process utilize the smartphone-assisted ELSA program in the classroom for research purposes. Utilize this program in the classroom with instructor supervision to ensure that students can navigate it seamlessly and eventually become proficient in using it autonomously. Nevertheless, this does not exclude the idea that individuals can utilize it in their homes for educational reasons, without the guidance of a lecturer. The objective is to maintain the ability to autonomously enhance their English proficiency.

RESULT AND DISCUSSION
Results
The results and discussion in this study display the six statements given to students as participants in this study. The description of the findings and discussion of the current research is a quantitative description of the activities carried out, namely as follows:

Table 1. First statement: "The initial look of ELSA Speak is very good."

No.	Indicator	Frequency	Percentage
5	Strongly Agree	29	100%
4	Agree	0	0
3	Doubtful	0	0
2	Disagree	0	0
1	Strongly Disagree	0	0

Based on the data obtained and presented in Table 1, we found that all participants strongly agreed that the initial appearance of ELSA Speak in terms of its design and appearance.

Table 2. Second statement: "I like the ELSA speak application because it provides options and exercises in Indonesian."

No.	Indicator	Frequency	Percentage
5	Strongly Agree	29	100%
4	Agree	0	0
3	Doubtful	0	0
2	Disagree	0	0
1	Strongly Disagree	0	0

Based on the data obtained from this study and presented in Table 2, it can be concluded that the participants liked the ELSA speak application because it provides a variety of language choices from native speakers. Here participants choose Indonesian as the delivery language in operating the application. The impact of choosing Indonesian as the operational language in the ELSA Speak application is that this tool helps students or participants understand the operational instructions for use that have been recommended by ELSA Speak itself. This also helps students because most students are not very proficient in using English, especially in the field of engineering English.

Table 3. Third statement: "The variety of learning topics offered by ELSA speak is varied and interesting."

No.	Indicator	Frequency	Percentage
5	Strongly Agree	29	100%
4	Agree	0	0
3	Doubtful	0	0
2	Disagree	0	0
1	Strongly Disagree	0	0

Based on the data obtained and presented in Table 3, all participants strongly agreed that the variety of learning topics in the ELSA Speak application was varied and interesting. All participants strongly agreed with the statement regarding the variety of learning topics offered by ELSA Speak and if converted into a percentage it reached around 100%. This variation of the offer provides reading material for each participant to recite so that the participant were given feedback automatically through a series of colors that have different corrective meanings at the end. As is known, ELSA Speak provides more than 1300 lessons and 70 topics specifically designed to practice English vocabulary pronunciation. In the current study, we focused on several topics of discussion related to the Engineering English vocabulary.

Users, who in this case are engineering students, can choose topics that suit their needs and interests. With targeted practice, users can increase their understanding of vocabulary and improve their pronunciation gradually (Tran, 2019). We also found that 100% of the participants strongly agreed with the existence of different levels in the ELSA speak study (see Table 4). As is well known, this application provides casual, medium, and serious options. This choice allow participants to learn freely according to their abilities. With the options provided by ELSA Speak, which was mentioned above, students also feel

comfortable using the application. As is known, most students use the casual and medium options, because apart from coming from vocational schools that do not specifically use English, there are also not many choices of Engineering English vocabulary available.

Table 4. Forth statement: "I love the different levels offered in the ELSA speak study."

No.	Indicator	Frequency	Percentage
5	Strongly Agree	29	100%
4	Agree	0	0
3	Doubtful	0	0
2	Disagree	0	0
1	Strongly Disagree	0	0

The data obtained and described in Table 5 provides information regarding the available and different level options. The participants had a positive trend towards this statement. The participants had a choice of strongly agree of 72,5% and some participants chose to agree with a percentage of 27,5%. This shows that the variety of choices at each different level has an impact on the participants' flexibility in choosing this topic.

Table 5. Fifth statement: "ELSA speak offers freely selectable study duration and study hours."

No.	Indicator	Frequency	Percentage
5	Strongly Agree	21	72,5%
4	Agree	8	27,5%
3	Doubtful	0	0
2	Disagree	0	0
1	Strongly Disagree	0	0

In the current study, when the participants first used ELSA Speak, they were directed to choose a beginner or beginner level. Then, they were directed to choose the first type, namely casual. The casual option has a duration of 25 minutes in each class meeting. Meanwhile, the medium option has a duration of study time of 35 minutes per day. Lastly, the serious option is a study time of 45 minutes per day. The duration of the meeting is calculated by considering the level of difficulty of the Engineering English vocabulary and the exercises that the students take. In addition, the ELSA speak application offers a menu of options to choose from at a certain time and participants chose the choice of study hours according to their choice. Then starting from here, participants can start to install the application and then start to be able to operate it.

Table 6. Sixth statement: "Learning Engineering English pronunciation skills and feedback from ELSA speak really help me."

No.	Indicator	Frequency	Percentage
5	Strongly Agree	29	100%
4	Agree	0	0
3	Doubtful	0	0
2	Disagree	0	0
1	Strongly Disagree	0	0

The data obtained from the questionnaire and presented in Table 6 shows how learning the pronunciation of Engineering English vocabulary or sentences in English through the ELSA speak application is useful for its users. All 20 participants have chosen to strongly agree in the questionnaire and if these results are converted into percentages, the results obtained are 100%. This is one of the advantages of this application. Upon detecting a pronunciation error, ELSA Speak provides immediate feedback to the user. Users can find out what mistakes they made and get recommendations to fix them. This allows users to learn more effectively and efficiently.
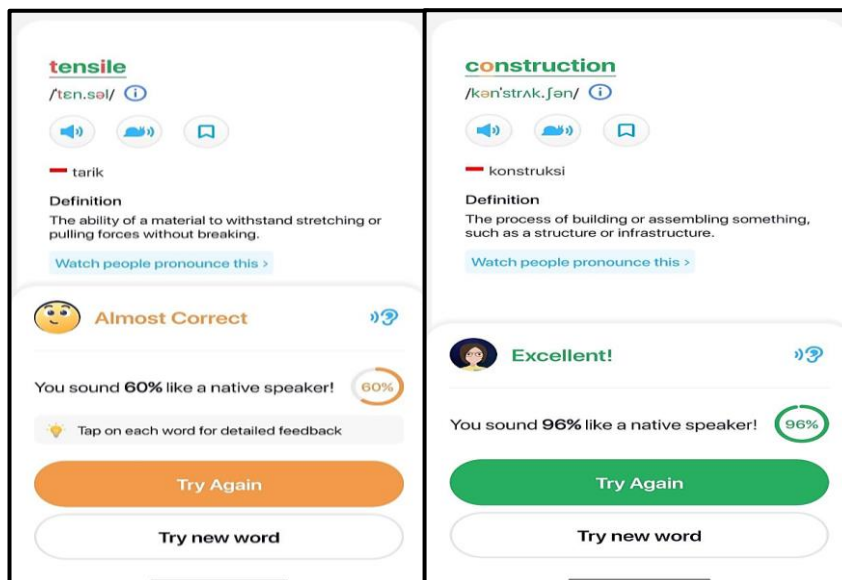

Figure 1. Pronunciation error detection display on the ELSA Speak application.

As examples, ELSA Speak application guide participants or users on the first day with illustrations to read the word **beam**, **tensile** and **construction**. If the word nice and the result uttered by one of the participants are /ˈ**ten.saɪl**/ and /**kənˈstrʌk.ʃən**/ then it was colored green and the pronunciation test through the application on words ending is judged by the application to hear the sound like the quality of a native English speaker by providing excellent quality or very good.

Discussion
According to the findings shown above, we discovered that all participants expressed good opinions towards the tool by highly agreeing or agreeing with it, particularly in pronunciation. This conclusion is based on the analysis of the 6 items in the questionnaire. Regarding the pronunciation menu, the participants expressed great enthusiasm as this device offered them a means to pronounce accurately, approaching the quality of a native English speaker. ELSA Speak uses voice recognition technology to detect user pronunciation errors. With an error detection rate of more than 95% (Zebua et al., 2023). ELSA Speak also provides animated English diagrams showing the correct mouth position for each vowel and consonant sound (Stevani et al., 2023). This allows students, especially vocational students who are the subjects of this study, to visually understand how to adjust the position of the mouth when pronouncing certain words. This visualization can help users improve their pronunciation better. Thus, the results of this research support ELSA

speak research related to effective vocabulary pronunciation learning, automatic feedback in the form of an assessment of whether the pronunciation needs to be repeated or not (Akhmad & Munawir, 2022; Adityarini et al, 2022; Aswati & Indari, 2022; Nguyen & Pham, 2022). In contrast to prior research utilizing smartphone applications to assist students during lectures, the present study yielded divergent outcomes. Notably, this study focused on a learning process involving non-native English speakers specializing in Civil Engineering.

The lecturing process using ELSA Speak obtained from the results of the current study show a positive impact for students in learning Engineering English vocabulary. As is known, the characteristic of vocational education is that learning has a greater practical weight than theory, of course online learning methods have their own challenges. Practical (hands on) learning encounters several obstacles when delivered using media. The application of learning cannot be seen in its entirety in the skills aspect and is only limited to knowledge. The utilization of ELSA Speak can be one of solutions as a learning medium in creating interactive and effective lecture process, according to the data obtained from the questionnaire analysis above. Besides that, hands-on practice provided by ELSA Speak helps students understand the Engineering English vocabulary being taught.

CONCLUSION

As it is known that the purpose of this study was to find out how students' perceptions in learning the pronunciation of Engineering English vocabulary through ELSA speak. The results of this research show that the participants perceived positively regarding learning pronunciation through the ELSA speak learning aid. Automatic feedback with assessment criteria such as 'the pronunciation of a native speaker' or not like a 'true speaker' to participants has provided positive motivation for participants to learn independently through this tool. The results of this research have strengthened several statements from several previous studies regarding research on the use of ELSA speak in the English language learning process. By implementing the ELSA Speak application in Engineering English lectures, lecturers can act as facilitators and mediators, not just as lecturers. The atmosphere and environment of the classroom can provide a sense of enthusiasm and more attention because the learning process is dominated by active students. The data obtained from this research also supports the idea that adopting accents in ELSA Speak in teaching Engineering English vocabulary pronunciation can improve student performance in pronouncing English words, both phonemic and phonetic sounds.

For other researchers who have a similar interest in analyzing this kind of issue, they can increase the variables in data collection and analysis, such as applying observations and interviews with participants so that the research results become more comprehensive. We also suggest that campus authorities can facilitate students with premium ELSA Speak accounts, because there are several features of this application that are locked if the user has run out of trial time and has not subscribed. Furthermore, we also recommend that lecturers or even teachers can add other learning materials that are appropriate to the topics in class, because not all topics taught can be covered by ELSA Speak.

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