Research Square

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Mobilizing Artificial Intelligence for English Language Learning Among EFL Learners

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Abstract

The present-day language learning strategy, known as Artificial Intelligence, Assisted Language Learning, is the use of AI-driven tools to facilitate the learning processes of learners. Many educational researchers have been exploring AI tools with education-related activities. The main aims of this research are English as a foreign language learners' view about AI-assisted English language learning and teaching and English as a foreign language learners' difficulty about AI-assisted English language learning and teaching. The current study quantitative methods were used and survey tool to collect different data from 71 first year students. In order to collect data, a 5-point Likert Scale survey was used. Most of the students viewed the usage of AI-powered tools positively Mostly in learning English, as per the research. The main issue is the low quality of AI-powered language-learning apps available on smartphones. Then again, it is expected that the language learning AI-powered apps may be one of the teaching media that could be considered to help learners in learning English as a foreign Language successfully. This study calls for a deeper exploration of how experienced language teachers implement the use of AI-powered applications in their instructional practices to develop best ways of using artificial intelligence in English as a foreign language setting both for teaching and learning.

1. Introduction

Younger generation, Gen Z and Alpha is experiencing an interesting time when technology is so sophisticated that they are unleashing the possibilities of timesharing, high-powered, linkage, and plugged-in learning environments. Due to the development of communication technology at the regional and global level, the demand for English proficiency(English as a foreign Language-EFL) is growing. We need to know that to learn English in innovating ways, we need innovative teaching pedagogies as well as adequate and appropriate materials. Education is the most visible thereof as one of the communication changes introduced by IR 4. 0. Almost every College and University of Higher Education feel the need–in one form or another to include Education 4. 0 as a descendant of the IR 4. 0. Edu 4. 0. Embodies of an intelligent campus, contemporary teaching ways highperformance and intelligent learning environments, attractions, and environmentally friendly technologies [35]. Intelligent technologies will contribute to a better life for all by providing means to enable any activity. Big data based systems, deep learning, and the artificial intelligence (AI) are exploited as new means for reinforcement and personalization of learning. Thanks to the technological breakthroughs, as the Internet, the pedagogical processes as online learning classroom teaching approaches etc. have become available to the general public [19].

One of the critical issues raised by Education 4.0 is about Artificial Intelligence (AI) embedded in the teaching of language curriculum. AI offers plenty of learning materials and approaches to learn and teach languages, Mostly English as a second language (EFL). The advent of AI leads to the system shift in language education programs dramatically. That means, AI in a language curriculum is also called Artificial Intelligence Assisted Language Learning (AI-ALL). Applying the AI for teaching and learning purpose, both inside and outside classroom should enable the learning goals like support multiple

phases of learning difficulties and increase students' achievement. [23] Mentions that it is only for teaching English that the use of AI based instruments truly changes where the teacher at first works as an information provider, but afterword as the guiding tutor and manager to its pupil. The core function of a knowledge resource within an artificial intelligence centered educational provider is its knowledge expert, then the teacher cannot be undervalued. Teachers have the ability to do the operation manual alterations when necessary, that is, in keeping and operating these kinds of interactive computer based technologies [10]. The AI for English learning and teaching will depend on human intervention to some extent. The development team for the AI for English learning and teaching may give teachers much help for modification. That is to say that, teachers have played rather a role of a facilitator who may help students to learn how to use the AI [26].

Though, improving ability of using AI-based apps is far away from perfect when most people(like language professionals) really need help. As a huge body of research on EFL learner's use of AI-based apps and an increasing number of student interests with applying their English skills, authors are keen to do research on this specific behavior. The main product of this research is an in-depth discovery of EFL learners' insight and difficulties in using AI-mediated English language learning and teaching [36].

2. Literature Review

2.1. Initiation of Artificial intelligence in EFL Learning

John Mc Carthy is the person who's renowned for coining the expression ' Artificial Intelligence' (AI), discovered from the Workshop held at the summer of 1956 at Dartmouth College. The study of artificial intelligence emerged from a surge of enthusiasm started following the Second World War [13]. The study of artificial intelligence emerged from a surge of enthusiasm started following the Second World War. In beginning of the AI when in the middle of the 1950s Turing was seeking to find the question can machines think by the conversation of the special Turing Test (Intelligent or not), AI has achieved incredible advances. Per early trends in AI research, in 1950s, the conceptual dividing line between the Weak AI and the Strong AI also exists. Strong AI intends to develop systems that comprehend humans through artificial intelligence whereas weak AI is capable of performing tasks without any real understanding of human thought processes [7],[16].

Strong AIs which closely imitate human thinking and eventually replace human decision-making have always been seen as a troublesome concept. Still, early AI programs merely performed pattern recognition and so did not reach the stages of complicated contexts language acquisition. More than 80% of the progress in artificial intelligence over the past decade is due to the increased computational power that is now available [39]. The definition of AI in twenty-first century and built during the past 50 years can be summarized in this way: AI is essentially a scientific discipline and a collection of technological tools inspired by human beings, but usually in methods that are quite different from those humans use their nervous systems and bodies to sense learn think and act [17]. Previously, AI was used in very limited and specific sectors. Only some of these challenges were address in fields like computer

vision robotics automated theorem solving, computer vision, natural language processing, automated programming robotics intelligent data retrieval - etc. These applications have grown to such a level that it's feasible to treat each one as an individual area of research. In actually, it's more advantageous to consider AI.

In 2016, Stanford University published, a 100-year report on artificial intelligence. They noted that such successes were hampered initially because AI had enormous promise but lacked the ability to induce deep learning in systems such as ITS. AI is widely used [8]. Actually, the AI is a technology that potentially could recognize human speech naturally, assess human speech, and translate a flipped classroom model into language teaching and learning. And, it enables students to be more effective and productive [43]. With the development of NLP, connectivity of learning through networks and the technological management of huge data though AI of today with the help of these elements can be very much exploited in the studies of the first language and the second language world [34]. Computational linguistics is how a language knowledge representation in AI is called. Mostly, our support to 2 nd language learning came from computational syntax, which is one of the two areas of the computer linguistics. The second one is [29]. The way of thinking of incorporating AI in mobile teaching and learning (m-learning), is one that continues to gain ground in higher education circles [38]. Advanced methods of using AI have made a comeback to the dream of autonomous learning [6].

The features of AI are used in the Intelligent Computer-Assisted Language Learning (ICALL) system as well as in instructions to enable effective foreign language teaching strategies [3], [32], [41]. From the point of view that AI chatbots are language learning computer-mediated communication tools, it is rather evident to see that they imply the first category [22],[32]. The communication of AI systems with their users is done through text or speech-enhanced chat, and voice interaction has been the major beneficiary of progress over the last three years [14]. [12] Broadly/ broadly classified the AI software used in education by classifying the tutoring systems, collaboration support systems and virtual reality systems into three categories of functions. [32] Reintroduced the term chatbot as a digitally coded creature, which both accepts and produces natural language conversations with humans. Research using AI technology in Foreign Language (FL) learning has confirmed that chatbots (much) improved the quantity and quality of learner language production [3], [4],[22], [28].

Learning settings equipped with AI-powered features might be a great help, not only to language instructors but also to learners. One group of artificial intelligence-based technologies is typically linked to computer-assisted language learning. The continuous improvements in big data handling and natural language processing have greatly impacted the teaching of foreign languages with AI [15]. AI will generate a tailor-made lesson plan for each EFL student in the classroom based on the content area. Considering the skills level and language difficulties, AI will make use of the knowledge area data to design a personalized learning path for each student [11],[31]. Artificial intelligence (AI) has a lot of positive points when it comes to language education. AI technology in academia not only can provide more variety in the curriculum but it can also transform completely the whole educational process. Currently, AI is the language teaching assistant with whom every educator should team up as the help

and the impact are substantial. AI is giving second language learners the gift of becoming independent-minded learners by involving them more in the learning process [44]. The integration of AI solution in second language acquisition Mainly in English language learning can bring a lot of conveniences. There is almost an unlimited amount of AI programs to interact with for carrying out certain exercises at a lightning speed. Such AI tools are becoming the go-to resource for many language learners.

2.2. The Relation of Natural Language Processing in Artificial Intelligence

Natural Language Processing (NLP) is a promising technology, which becomes increasingly crucial in the applications being pushed by AI that can converse with human using ordinary languages. NLP and the related fields of it really ease this task of language production. NLP is divided in two parts: natural language understanding (NLU) and natural language generation (NLG). [33] Says Natural Language processing is what the reader or listener does, while Natural Language Generation is what the writer or speaker does. No matter how many theories and their technologies we discussed, NLG has to be improved and renewed. It means the system has to have a tactic or model of interaction goals to determine what it will produce at each step of communication [27].

In this case, the role of the NLP system is to understand and communicate the meaning and purpose of the user's query. It is almost as easy in casual conversation for a user to pose a question to an NLP system as for a user to a librarian in a reference library. Use of natural language processing for learning a language can change the environment if not the learning itself. For instance, it can improve and enhance language learning materials and tools that can assist learners as well as language teachers and SLA researchers. The emergence of dependable classification schemes and analytical approaches that identify the language learner's features as well as language for learner characteristics will need further cross-disciplinary work between SLA and NLP [34]. The main goal of computational linguistics is to develop computer techniques that can help understand organize categorize and find natural language easily. It not only considers text but may also include speech and translation as sources. Using computational linguistics as a tool for language learning is Actually an attractive thought [30].

In reality the fusion of NLP and AI Is an ideal circumstances for performance of by oneself language mastery. NLP is the foundation of wide has coached numerous AI programs. The Google Translate, Google Docs, Grammarly, and the individual intelligent aides like Siri Hannah Alexa Cortona, Bixby Lyra Jarvis Robin Elsa, Data Bot Hound and many others are some of the samples of likelihood the to NLP. Language teaching to the English language is an implication of these NLP and AI based applications, which are now known as AI-improved language teaching [25]. The central areas of Google's NLP research are scaling algorithms, cross-lingual, and cross-domain [42]. Learning a foreign language, generally for comprehension tasks, can be supported better with Google Assistant. From the study's subjects' performance on the number of questions they attempted and answered correctly was improved after using Google Assistant as a reading comprehension tool relative to the conventional method of reading comprehension [21]. Really Alexa is highly efficient AI tool in the performance and

execution of specific tasks in extremely short times. On top of that, Alexa and other intelligent personal assistants can generate contexts for language practice by enabling opportunities for speaking and listening practice in a second language beyond the classroom so improving autonomous learning [5].

Siri is a great voice assistant that can help with specific tasks when you use an Apple smartphone. Siri is an excellent interactive tool offered by Apple. To make a difference in people's life, personal assistant "Siri" was designed not only to answer questions but also to explain and act as a guide. Since users can talk naturally and clearly, so that the smart assistant can understand them properly, when a student is learning a second language, e.g. English, the use of Siri as a tool can Much enrich the learner's experience [40]. Siri has the ability to motivate people to exert more effort if they want to achieve the desired results. Based on perceptions about the extent to which Siri's culture is significant for learners to succeed in the study of English one of the criteria considered is the writing skill [9]. Besides that, Google Assistant Alexa Siri, Cortana, and Bixby provide various levels of AI interfaces for second language learning through their respective AI programs. The efficiency of several of these AI programs has been tested and evaluated for language learning capabilities [37]. The major issue is that there is a great desire for the digitalization of learning environments by making use of AI-powered applications to support the improvement of the teaching and learning process. Some of the recent technological advancements in education have resulted in changes in the way education is conducted. For those willing to enhance their language learning and teaching Mainly English, the availability of different AI-powered applications that include natural language processing (NLP) might be considered the best solution.

3. Research Method

3.1. Research Design

The research was done using a survey to measure variables quantitatively. A description of the current situation and students' attitudes as well as problems with AI Assisted English Learning was carried out through a survey.

3.2. Participants

In fact, these 71 subjects are first-year students at Institute of languages (University of Tabuk in north of Saudi Arabia). They are currently enrolled in the Technical Report Writing course. All the participants whose use the PCs, Tablet PCs, internet, and system (voice assistants, Eye Chatbots, web designs, speech recognition system Gestures Face Identification system, Objects Identification system, and handwriting recognition system) for academic purpose and for using. Firstly, naturally are from a pharmacy background, searching for out about different types of technological innovations and inventions (sic, AI applications).

3.3. Instrument

[18] say that a survey is a tool that collects data from a sample of the population to describe some characteristics or features of the whole population, for example skills views attitudes values, and knowledge. The authors took and adapted the research way from the paper of [20]. Researchers made 20 questionnaires available to students via Google Forms with only 71 of them responding. Firstly, the questionnaire probed the perceptions of students about AI powered assistants in their English language learning. Secondly, it explored the challenges in the use of AI for English language learning. Both surveys include two parts of 20 items each: the perception part contains 10 items, whereas the problems' part contains 10 items. To collect quantitative data, a 5-point Likert scale was used with each category having items starting from Strongly Agree (SA) = 5 to Agree (A) = 4 to Neutral (N) = 3 to Disagree (D) = 2 to Strongly Disagree (SD) = 1. To interpret the results of the questionnaire data analysis, first a rating scale was used. The calculation of the standard deviation and the mean have been made.

3.4. Data Analysis

The main tool for statistical analysis was IBM SPSS Statistics. Besides this, the investigator used SPSS combined with Microsoft Excel for analyzing data. Besides this, data were qualitatively analyzed to fulfill the research objectives. Besides this, the description, categorization, and interpretation of the questionnaire may have been done. The analysis was done with the help of a computer program, and the statistics used were mean and standard deviation.

4. Results and Discussions

4.1. Evaluating the consistency of the questionnaire Utilizing Cronbach's Alpha

The internal consistency of the questionnaire items was evaluated using Cronbach's alpha [24]. Cronbach's alpha is among the most popular techniques for measuring the reliability of multi-item scales and demonstrates the degree to which items measuring the same construct are related to one another [2]. An alpha coefficient of 0.70 or above is generally accepted to be an acceptable measure of internal consistency, though slightly lower coefficients may be marginally acceptable in exploratory research and for recently constructed scales [1].

Table 1
Internal Consistency reliability of students' Perception Scale

Reliability Statistics	
Cronbach's Alpha	N of Items
.798	10

As illustrated in Table 1, the Cronbach's alpha coefficient of the students' perception scale for 10 items was 0.798, which reflect the good internal consistency of items measuring students' perception of AI-

supported English learning. Since Cronbach's Alpha coefficient is above 0.70, the students' perception scale could be considered enough reliable for this statistical analysis.

Table 2

Internal Consistency reliability of the Students' problem Scale

Reliability Statistics	
Cronbach's Alpha	N of Items
.682	10

Table 2 shows the students' problems scale, a Cronbach's coefficient of 0.682 was generated for the total scale using a total of 10 items. While barely below the traditional 0.70 level we can guess the scale demonstrates moderate internal reliability and is so acceptable and comprises a relatively consistent set of indicators of the problems experienced by the students. In reality the Cronbach's Alpha value for this test had a lower coefficient than that for the perception scale suggests the scale dimensions may be of lesser internal homogeneity and needs additional study.

4.2. Learning from AI-Assisted English Language Learning: Perceptions of EFL Learners

The findings of the questionnaire serve the general picture of EFL learners' views on the application of artificial intelligence (AI) in the study of English. The responses of the participants were rated on a five-point Likert scale, from Strongly Agree (SA) to Strongly Disagree (SDA). The result (number of respondents, mean, and standard deviation) is shown in Table 3.

Table 4.3
Learning from AI-Assisted English Language Learning: Perceptions of EFL Learners

No	Item	SA	A	N	DA	SDA	Mean	SD
1.	Using AI-powered apps to learn English has the advantage of saving time.	45	20	0	1	5	4.39	1.088
2.	Artificial intelligence-powered applications give students the chance to learn English at any time and from any location.	37	6	3	14	11	3.61	1.624
3.	Applications driven by AI give me access to trustworthy English language learning assignments.	40	21	1	5	4	4.23	1.152
4.	Interactive English language learning exercises are made easier by using AI-based applications.	27	28	3	7	6	3.88	1.259
5.	AI-powered apps will make learning English more interesting.	34	22	0	7	8	3.94	1.382
6.	In the field of English language learning, AI applications are relatively inefficient.	30	25	3	7	6	3.92	1.279
7.	Several AI apps are available on smartphones that can help you learn English.	31	27	5	5	3	4.09	1.084
8.	Applications powered by AI are simple to use and accessible.	28	24	7	9	3	3.91	1.180
9.	AI applications with reliable internet access give us a prompt answer at any time and from any location.	36	21	4	7	3	4.12	1.157
10.	It is possible to learn English language skills using AI applications.	42	15	3	7	4	4.18	1.234

The data in Table 4 indicate that all the students had positive attitudes toward AI support for learning English. The means of all the ten items were over 3.61, which were all above the halfway mark on the five-point Likert scale: although the items under question were not all highly ranked, the means did not fall below the key figure of 3. The item " Using AI-powered apps to learn English has the advantage of saving time "got the highest average mean score of 4.39 (= 1.088). As for the response frequencies, there were 45 participants who strongly agree, 20 agree with these statements, and very few participants either disagree or strongly disagree with these items. This means saving time was the most highly perceived advantage of using AI-powered apps to learn English.

Item 3, " Applications driven by AI give me access to trustworthy English language learning assignments" had the second highest mean score (M = 4.23, SD = 1.152). Most participants responded from strongly agree or agree, suggesting that students felt that English language learning assignments were reliable through the use of AI-driven applications. The item 10, " It is possible to learn English language skills

using AI applications", was ranked as the third item, means of 4.18 (SD = 1.234). The means indicated a general agreement among the participants. Item 9, " AI applications with reliable internet access give us a prompt answer at any time and from any location." achieved a mean (M) rank of 4th (between Item 2 and Item 8). The outcome indicates that participants placed high importance on the instantaneous reply provided by AI applications when reliable internet is available. This also proved the accessibility of AI supported learning materials.

Item 7, " Several AI apps are available on smartphones that can help you learn English, " had a mean of 4.09 (SD = 1.084). The high mean indicates that students mostly saw this statement to be true. They knew that several apps supported by AI are accessible through mobile devices to improve learning of English. Item 5, " AI-powered apps will make learning English more interesting" had a mean of 3.94 (SD = 1.382). While this mean was lower compared to the previous items, it was still on the higher side of the total range. Participants agreed that AI-powered applications might make learning English more interesting.

Item 6 " In the field of English language learning, AI applications are relatively inefficient" was rated on average 3.92 (SD = 1.279). Because this statement is negatively specified, the interpretation of the mean should take into consideration the way the statement was specified negatively phrased. In reality the mean is relatively high shows that many participants agreed with the statement as it was specified. This item should be carefully considered when interpreting the overall perception results and it has also to be considered separately or reversed if a positive overall perception scale is to be designed.

Item 8 " Applications powered by AI are simple to use and accessible" had a mean of 3.91 (SD = 1.180). The result suggests that most participants thought that applications powered by AI are quite simple to use and accessible. Item 4 " Interactive English language learning exercises are made easier by using AI-based applications" received a mean of 3.88 (SD = 1.259). It suggests that the participants tend to agree that interactive English language learning exercises are energized using AI-based applications. Finally, item 2, " Artificial intelligence-powered applications give students the chance to learn English at any time and from any location " was rated the lowest (M = 3.61, SD = 1.624). While it obtained the lowest mean score, it still was comfortably above the mid-point of the scale in general. The scores for this statement had the highest dispersion compared to some of the other statements.

Generally, the participants viewed that AI-assisted English language learning positively, reflected by all ten statements scoring above the median mean. The statement, which scored the most highly about participant perceptions of AI-assisted English language learning was the saving of time through software applications, followed by gaining access to reliable English language learning tasks and the possibility of learning English language skills through an AI application. At the same time, the lower mean for the statement of learning English either any time or place reflected a larger amount of variance in participants' opinions for this factor of AI-assisted learning.

4.3. EFL Learners Perceived Challenges in AI-Assisted English Language Learning

In addition to examining students' perceptions of AI-assisted English language learning, the study investigated the challenges that learners may encounter when using AI-powered applications. Participants responded to ten statements concerning potential limitations and difficulties associated with AI-assisted English language learning.

Table 4.4
EFL Learners Perceived Challenges in AI-Assisted English Language Learning

No	Item	SA	A	N	DA	SDA	Mean	SD
11.	Learning languages on smartphones is not possible due to the lack of good AI applications.	3	4	3	23	38	4.25	1.065
12.	There is no evidence that AI apps are capable of supporting English language learning.	2	2	5	20	42	4.38	.946
13.	The cost of AI-powered applications can be quite high.	3	5	1	28	34	4.19	1.063
14.	The use of AI applications is not limited to academic purposes.	1	6	3	22	39	4.29	.991
15.	Currently, AI-based English language learning applications are scarce.	3	8	2	22	36	4.12	1.170
16.	Using AI-powered applications requires a large amount of data.	0	2	2	26	41	4.49	.694
17.	Students are less accustomed to using AI tools for English language training.	0	2	4	17	48	4.56	.731
18.	When interacting with AI applications, battery life becomes an issue.	0	0	3	19	49	4.64	.563
19.	Slow internet speed makes it more difficult to get a prompt response.	0	6	11	13	41	4.25	1.010
20.	There is less interaction with AI applications when there is poor internet connectivity.	29	12	6	15	9	3.52	1.510

The average score of these ten items, as presented in Table 4, ranged from 3.52 to 4.64, shows many responses of items measuring the perceived difficulties of studying English with the help of AI. Item 18 received the highest average score of 4.64, which is about battery life, and item 20 received the lowest of 3.52, which is on interacting with AI applications when internet connection is poor.

Item 18, " When interacting with AI applications, battery life becomes an issue." yielded the highest mean (M = 4.64, S D = .563). The distribution of responses indicates that 49 of the participants selected the strongly disagree option and 19 of the participants selected disagree option. Only three of the participants chose the neutral option. The low standard deviation of the mean indicates that the ranges of responses do not vary by far from the mean. The distribution of responses indicates that the meaning

of the statement is an issue, but that most participants did not find the statement to be an issue. Item 17 " Students are less accustomed to using AI tools for English language training." had the second lowest means (M = 4.56, SD = 0.731). 48 respondents strongly disagreed and 17 disagreed with the statement. It means that students not concerned about not being used to study English through the AI tools unless other factors are concerned.

Item 16, " Using AI-powered applications requires a large amount of data", received a mean of 4.49 (SD 0.694). The most common response across all participants was to disagree or strongly disagree. Forty-one participants responded strongly disagreed to the statement, and 26 participants responded disagreed. This low standard deviation suggests there was agreement across participants about this difficulty. That's why the participants did not perceive this as being difficult with using AI-enabled applications. Item 12 " There is no evidence that AI apps are capable of supporting English language learning" scored a mean of 4.38 (SD = 0.946). Although 42 voters selected strongly disagree with this statement and 20 voters selected disagree, most participants did not regard the lack of evidence of AI supporting English language learning as an important issue. Item 14, " The use of AI applications is not limited to academic purposes " received an average of 4.29 (SD = 0.991).39 students strongly disagreed with the statement and 22 students disagreed with the statement. The results this way indicate that the participants did not find non-academic applications of AI as a key challenge to be faced.

The mean for items 11 and 19 was similar (both 4.25), but they differed in standard deviation. Item 11 " Learning languages on smartphones is not possible due to the lack of good AI applications " scored M = 4.25 (SD = 1.065). Most participants strongly disagreed or disagreed with this statement, indicating that they generally did not believe that a lack of good AI apps makes learning languages on smartphones impossible. In the same note, item 19, " Slow internet speed makes it more difficult to get a prompt response " resulted in M = 4.25 (SD = 1.010), based on the numerical value of the responses. Based on the response distribution, 41 participants strongly disagreed, 13 disagreed, 11 were neutral, and 6 agreed by the recorded values. That means, generally, the participants did not agree that slower internet speed made it more difficult to get a prompt response.

Item 13 " The cost of AI-powered applications can be quite high" scored a mean of 4.19 (SD = 1.063). It is noteworthy that the most common response was disagree / strongly disagree, with 34 participants picking strongly disagree and 28 participants disagree. This shows that cost was not generally viewed as a difficulty. Item 15, " Currently, AI-based English language learning applications are scarce " obtained a mean of 4.12 (SD = 1.170). Thirty-six students strongly disagreed and 22 students disagreed with the statement. This means most students did not regard the lack of AI-based English language learning applications as a problem that existed largely.

Lastly, Item 20, " There is less interaction with AI applications when there is poor internet connectivity " had the lowest average score (M = 3.52, SD = 1.510). Still, for Item 20, there were more "strongly agreed, " (29) and "agree, " (12) responses than all of the other items. Also, the wide spread of answers as

indicated by the higher standard deviation implies that participants perceived the issue of poor internet connectivity as somewhat varying, and perhaps more relevant than some other issues investigated.

Overall, the results reveal that most participants did not view, as indicated by the direction of their responses to the statements when worded as provided, most of the issues that followed as being significant hurdles to AI-driven English language learning. Participants agreed most strongly with statements on battery life, learners' prior exposure to AI tools and the amount of data needed to run AI-based applications. Participants responded to Item 20 on reduced interaction when there is weak internet connection more variably and rated it as having the least mean score.

5. Conclusion

Evidence shows from the mean scores of the items that the learners' perceptions of AI use in EFL learning appeared mostly positive. The mean scores of the items ranged from 3.61 to 4.39, and the item with the highest mean score was the impression that the use of AI-powered English learning application can save time (M = 4.39, SD = 1.088). It was followed by the perception that the use of AI-driven English learning application can provide access to reliable English learning assignments (M = 4.23, SD = 1.152), and that using AI applications can help to learn English language skills (M = 4.18, SD = 1.234). These results imply that students were aware of several practical advantages of AI-driven learning, mainly its ability to offer accessible and convenient learning experiences.

As for the perceived problematic issues, the results indicated that students disagreed with most of the problematic issues in the series of the questionnaires. The area most disagreed, was battery life becoming a problem when using AI applications (M = 4.64, SD = 0.563) and the students decreased familiarity with using AI applications to improve English (M = 4.56, SD = 0.731). As for large data volume requirement when using AI applications, students showed high disagreement (M = 4.49, SD = 0.694). Internet connection problems showed some high agreement (M = 3.52, SD = 1.510). But there was also a large proportion of students who agreed that internet connection problems impede interaction with AI applications. In general, the results indicated that students tend to view AI-assisted English language learning quite positively, meanwhile internet connection problems could be a technological issue affecting students' interaction with AI applications.

The AI-assisted applications can be, because of this concluded to be perceived as an efficient and effective tool supporting learners' EFL acquisition by EFL learners, while at the same time the successful management of this tool calls for the availability of an appropriate technical infrastructure, mostly internet connection availability. It is then also necessary to investigate further whether these learners' perceptions for the effective use of the AI-assisted applications reflect in their actual English language performance.

6. Recommendations

The implications of this research also suggest that in the future, research into English language learning with AI should be carried out using larger and more heterogeneous samples that are taken from different universities and educational settings. Also, I believe that further research should be conducted that uses a combination of instruments such as questionnaires and semi-structured interviews, focus groups, learner diaries, classroom observation, or additional qualitative approaches to provide a more in-depth account of students' experiences with using AI to learn English to triangulate the data. And it may be useful for future research into AI in English language learning to explore the uses of AI on specific language skills, e.g. writing speaking reading, listening vocabulary grammar, or pronunciation. Researchers could implement experimental or quasi experimental designs to find out if students' high attitudes towards and positive experiences with AI translate into genuine advancement in their language, as measured through assessment.

In addition, future study could put more emphasis on technological factors that may affect students' meaningful interaction with AI applications like internet accessibility, availability of the devices, AI applications' accuracy and functionality, as well as the AI tools' accessibility to students. Under the guidance of educators and researchers, alternative ways of the evaluation of AI applications and their pedagogical usefulness accuracy accessibility and appropriateness to EFL students could be proposed. Research might also explore opinions on AI assisted language learning from other educational stakeholders, such as teachers, administrators, curriculum, designers, and developers of AI programs or applications. Also, conducting longitudinal design research to explore how students' attitudes, familiarity, and usage tendency on AI applications change is recommended.

Declarations

Acknowledgements

Not applicable.

Huaman Ethics and Consent to Participants

This study has human participant. The principles of Ethical considerations for research involving human participants were adhered to. The participants were informed about the purpose of the study and their participation was voluntary. The informed consent was obtained from them before their participation in the study.

Data Available Statement

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethics Statement

Ethical approval for this study was obtained from the Deanship of Scientific Research, University of Tabuk, Kingdom of Saudi Arabia (Approval No. 43/052/30689). The study was conducted in accordance with the ethical standards of the University of Tabuk and the principles of the Declaration of University of Tabuk. All participants were informed about the purpose of the study and provided informed consent before participating. Participation was voluntary, and all responses were collected anonymously and treated with strict confidentiality.

Consent for Publications

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The Authors declared that they have not competing interests

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Author Contribution

H.M.A. contributed to the conception and design of the study, literature review, development of research system and writing of the manuscript. A.K. contributed to the literature review, research way, data collection and interpretation of findings. L.S. contributed to research design, data collection, data organization and manuscript editing. Z.B.B.Y. contributed to data collection, analysis, and interpretation of findings. A.M.A. contributed to research designing and approach, data analysis, interpretation of findings, and writing and critical review of the manuscript. M.M.Y.A. contributed to way, statistical analysis and interpretation of research findings, and manuscript revision. D.K.T. contributed to data collection, literature review, preparation of the manuscript and critical review.All authors contributed quite a bit to the manuscript preparation, have read and approved the final version of the manuscript, and accept responsibility for the integrity of the research. They also agree to be accountable for all aspects

of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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