

Impact of Artificial Intelligence Versus Traditional Instruction for Language Learning: A Survey

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Abstract

This study examined the impact of AI-based training compared to conventional instruction approaches in the context of language acquisition. Employing a survey-based methodology, this study collected data from language learners to assess their perspectives and experiences of both traditional and AI-based training. The aim was to determine the advantages and disadvantages of AI-based training and its potential to enhance language learning outcomes. This study commences with a comprehensive analysis of existing research on AI in language learning and compares AI-based training with conventional instruction techniques. This study seeks to contribute to the existing body of knowledge by identifying the gaps in the literature. A representative sample of 72 learners will be administered the survey questionnaire as part of the research approach. The study collected demographic data from respondents and information on their experiences with and opinions on both traditional and AI-based training. Descriptive and inferential statistics were used to analyze the responses and draw insightful conclusions. The findings of this study shed light on the impact of AI-based training on language-learning outcomes. The analysis compared the effectiveness of AI-based instruction with conventional teaching methods, highlighting the advantages and disadvantages of each approach. The study also addresses the constraints and challenges encountered during the research process, which could affect the generalizability of the results. The study's findings have implications for language teachers, educational institutions, and policymakers while also advancing our understanding of AI's role of AI in language learning. The results may guide decisions regarding instructional strategies, curriculum design, and the use of AI technology in language learning programs. The study concludes with recommendations for further investigation of the potential of AI-based language learning training and solutions to the issues identified.

Keywords: language intelligence, traditional learning, Instructional Effectiveness, learners' perceptions, language teaching

1. Introduction

Language learning is a vital, dynamic, and complex process in the increasingly connected global world. The ability to speak several languages improves intercultural communication and opens new avenues for academic, professional, and personal advancement. As technology develops rapidly, a growing number of people are interested in investigating the possibilities of artificial intelligence (AI) to speed up language acquisition. This study compares the effects of AI and conventional training on language learning results to gain the necessary knowledge about the merits and ramifications of each method. AI has the potential to personalise language learning by adapting to individual learning styles and needs. Additionally, using AI in language acquisition can provide immediate feedback and correction, leading to more efficient and effective learning.

Background and context

The traditional approach to teaching languages has used classroom-based instruction, textbooks, and language exchange initiatives. Even though these approaches are frequently employed and are somewhat effective, they often have several drawbacks, including restrictive curricular designs, a lack of real-time feedback, and limited, tailored instruction (Knox, 2020). On the other hand, the development of AI has paved the way for cutting-edge language learning strategies that use advanced tools like speech recognition, machine learning, and natural language processing. These AI-powered solutions provide the possibility of personalised, adaptable, and immersive language learning experiences (Frith, 2019). According to Spector (2006), AI language learning tools can provide instant feedback and analysis of a learner's progress, allowing for more efficient and effective learning. These tools can also adapt to the learner's pace and style, making the language learning process more engaging and enjoyable.

Latest trends of AI in the field of English language learning instruction

Artificial Intelligence (AI) integration in English language learning instruction has witnessed notable developments in recent years. These advancements have showcased a combination of pedagogical principles and state-of-the-art technology. One notable trend in the field of

AI-driven language learning platforms is the integration of Augmented Reality (AR) and Virtual Reality (VR). This integration provides learners with an immersive environment that allows them to engage with and respond to authentic language scenarios. The utilisation of virtual reality (VR) and augmented reality (AR) platforms facilitates experiential learning and cultural immersion, overcoming the limitations of geographical boundaries. This enhances learners' comprehension and retention of the subtleties inherent in the English language.

Furthermore, the widespread adoption of conversational agents powered by artificial Intelligence allows learners to participate in authentic dialogues, improving their ability to engage in conversation and comprehend spoken language in practical situations. In a similar vein, the emergence of adaptive assessment systems, supported by artificial intelligence algorithms, has begun to offer enhanced precision in diagnosing learners' competencies and areas for improvement. This advancement facilitates the implementation of a customised curriculum that adapts in tandem with the learner's advancement. Using artificial Intelligence (AI) to develop intelligent content, such as personalised textbooks and continuously updated learning materials, enhances the efficacy of individual educational experiences. These improvements not only highlight a significant change in the teaching of the English language but also suggest the possibility of developing a learning environment that is more focused on the needs and expectations of learners. This environment would be interactive and outcome-oriented, in line with the requirements of contemporary learners. The ongoing integration of these technological advancements with conventional teaching methods has the potential to change the direction and effectiveness of English language learning.

AI and traditional instruction methods for English learning.

This study focuses especially on the field of English language acquisition, comparing AI-powered instructional approaches with traditional teaching frameworks. The increasing prevalence of English as a global lingua franca highlights the importance of acquiring language proficiency, prompting many learners to search for quick and effective strategies to become fluent in the language. The function of technology in the contemporary learning environment is of great importance. Examining the effects of artificial intelligence (AI) in supporting the acquisition of English could substantially contribute to the broader discourse on reforming language education. Through a thorough analysis of the advancements and results achieved by individuals learning English, this investigation seeks to extract significant observations concerning the effectiveness, level of involvement, and flexibility inherent in artificial Intelligence and traditional instructional methods. This comparative analysis aims to provide a detailed comprehension of how artificial Intelligence (AI) can redefine the parameters of English language instruction. It aims to determine whether AI significantly enhances the learning process compared to traditional pedagogical approaches. This investigation uses an empirical approach to explore the intricate relationship between contemporary technological interventions and traditional pedagogical competence in enhancing English language proficiency among learners. The examination not only outlines the educational implications but also potentially outlines a plan for integrating AI with traditional teaching methods to create a more enriched and effective environment for learning the English language.

Significance of the Study

This work's importance rests in examining the possible advantages and difficulties of AI-driven language acquisition compared to conventional teaching techniques. Assessing if AI can improve language acquisition is crucial as technology is increasingly incorporated into educational environments. Knowing how AI affects language acquisition can help academic officials, language teachers, and students make educated choices about using technology in language learning practices and curricula. (Sourani, 2018) Furthermore, understanding AI's potential benefits and limitations in language acquisition can also aid in developing more effective and efficient language learning tools. With the rapid technological advancements, it is essential to continually evaluate its impact on education and language acquisition to ensure that students receive the best learning experience.

Research Objectives

This study paper examines and contrasts the effects of conventional instruction and artificial Intelligence on language learning results. The study specifically seeks to:

- a. Evaluate the efficiency of AI-based language learning tools in terms of the improvement of language competency.
- b. Consider how AI's individualised education and adaptive learning methods can aid language learning.
- c. Examine the advantages and disadvantages of AI-driven language learning compared to conventional teaching techniques.
- b. Determine language learners' preferences, attitudes, and satisfaction levels concerning AI and conventional training.

Research Questions

The following research questions will be addressed to direct the study and reach the goals mentioned above:

- a. How does the development of language proficiency differ between AI-driven and conventional instruction?
- c. Compared to conventional teaching techniques, what are the perceived advantages and difficulties of AI-driven language learning?
- d. Regarding AI and conventional education for language learning, what preferences, attitudes, and degrees of satisfaction do learners have?

2. Literature Review

Overview of language learning methods

Language acquisition techniques include a variety of ways and tactics used to learn a new tongue. These techniques fall under several

categories: immersive, communicative, syntax, and audio-lingual. Living in a country where a particular language is spoken or using other immersive methods provides considerable exposure to the language in real-world situations (Roll & Wylie, 2016). The development of language skills emphasises engagement and meaningful dialogue in communication strategies. Grammar-translation techniques emphasise translation exercises and specific grammar education. The repeating and imitation of language patterns are prioritised in audio-lingual processes. Each approach has advantages and disadvantages, and the success varies according to the student's preferences, objectives, and language. A more communicative approach to language learning has gained popularity in recent years. This approach emphasises the importance of using language in real-life situations and encourages students to engage in authentic conversations with their peers and instructors. According to Ouyang & Jiao, 2021, technology has played a significant role in language learning, providing students access to online resources and interactive tools to enhance their learning experience.

Traditional instruction methods

A structured curriculum, teacher-led instruction, textbooks, and exams are all components of traditional teaching strategies frequently utilised in schools. These techniques often continue sequentially, beginning with simple grammar and vocabulary before moving on to more intricate ones. Lectures, drills, reading passages, and writing activities are all possible instructional methods. Traditional teaching approaches include essential elements, including peer collaboration, teacher feedback, and classroom contact. Conventional teaching techniques have several benefits, including an organised and systematic approach to language acquisition, in-person interactions with classmates and teachers, and the ability to clarify questions immediately. Traditional techniques may also impart fundamental language abilities and teach clear grammatical principles. (Yu, 2020) They also have restrictions, though. Because training in these approaches is frequently created for groups rather than individuals, it often lacks personalisation. According to Yanushkevich (2003), focusing on grammar and vocabulary may not fully prepare learners for communication in authentic situations. Therefore, language learners must supplement their group training with individualised practice and exposure to real-life language use.

Artificial Intelligence in language learning

Language learning has dramatically benefited from the development of artificial Intelligence thanks to the numerous tools and applications it now offers. Intelligent tutoring systems (ITS) use (Nagao, 2019). AI algorithms to deliver tailored learning routes, adaptive feedback, and personalised training. Language learning chatbots use natural language processing to engage students in conversation practice and provide immediate feedback (Ma, 2019). Assessment and enhancement of pronunciation are made possible by speech recognition technologies. Applications for virtual reality (VR) and augmented reality (AR) produce immersive environments for language learning. Tools for machine translation make it easier to comprehend and translate messages. These AI programs present excellent chances to improve language-learning processes. Language learning systems powered by AI have several benefits. Instruction can be customised based on the learners' requirements, interests, and skill levels. Real-time feedback from AI tools enables language learners to correct errors and advance their proficiency. (Kühne & Edler, 2022).

They provide convenience regarding time and place, allowing for self-paced learning. Applications with AI-powered capabilities can give users access to natural language resources, multimedia content, and interactive learning exercises, increasing motivation and engagement. However, there are additional difficulties with language learning powered by AI. It might be unable to address complex linguistic or cultural issues since it lacks the sophisticated understanding of human teachers. AI system bugs or technical restrictions may hamper the learning process. Chen et al. (2020) state that there is worry that an over-reliance on AI may reduce opportunities for genuine human connection, which is crucial for language learning.

Previous studies on AI in language learning

Many studies have looked at how AI affects language learning. Various studies have studied the efficacy of particular AI applications, like chatbots or ITS, in enhancing language proficiency. According to research, AI tools can improve students' vocabulary learning, reading comprehension, and listening abilities (Hwang et al., 2020). Several studies have examined the attitudes and perceptions of language learners toward AI, emphasising the value of usability, engagement, and students' perceived influence over the learning process. (Baker et al., 2021). AI-powered language learning tools can provide personalised feedback and adapt to individual learning styles, making them valuable to traditional language instruction. According to Chen, Xie, et al. (2020), these tools should not replace human interaction and communication in language learning, as they cannot fully replicate the nuances and complexities of real-life conversations.

Examples of AI applications in English teaching

Within the field of English education, artificial Intelligence (AI) has emerged in several novel manifestations, leading to a new era of enriched interactive learning. For example, the process of acquiring vocabulary, which is a crucial component of language acquisition, is greatly enhanced by artificial Intelligence (AI)--powered platforms such as Babbel and Duolingo. These platforms employ spaced repetition algorithms to strengthen the memory and practical application of vocabulary. Furthermore, these platforms provide individualised learning routes, adjusting to the unique pace and capacity for retention of each learner. Within the field of grammar training, modern Natural Language Processing (NLP) algorithms are utilised by applications like Grammarly. These tools offer real-time feedback and corrections, allowing learners to identify and solve grammatical problems promptly. Conversational agents or chatbots powered by artificial Intelligence provide a dynamic environment for learners to actively participate in authentic interactions actively, enhancing conversational abilities and comprehension. The capacity of artificial Intelligence to analyse extensive datasets allows for the identification and subsequent customization of activities aimed at addressing specific shortcomings of particular learners, including aspects such as pronunciation,

grammar, and vocabulary. In terms of pronunciation, AI-supported programmes such as Elsa Speak utilise speech recognition technology to offer exact feedback on pronunciation problems, hence enhancing the understanding of correct English phonetics. Moreover, language learning platforms such as Rosetta Stone employ artificial Intelligence (AI) to establish immersive environments for language acquisition. These platforms integrate visual, aural, and textual components to replicate authentic language usage situations. The diverse utilisation of artificial Intelligence in this context not only enhances the level of interest in the learning process but also has the potential to expedite the acquisition of English language skills. This showcases the revolutionary capacity of AI in terms of delivering and customising English language education on a large scale. The effect of an AI language learning tool (such as ChatGPT) on the motivation of teachers and English language learners was examined by Ali et al. (2023). They discovered that although the tool had little effect on speaking or listening, it greatly improved the writing and reading abilities of the students. This shows that AI performs well in domains like grammar and vocabulary development that call for individualized feedback and practice. The lack of a discernible effect on speaking and listening, however, emphasizes the value of interpersonal communication and immediate feedback in these domains (Ali et al., 2023).

Yan (2023) looked at the impact of an AI-assisted language learning tool on the writing abilities of EFL students in another study. The results demonstrated how well the AI tool improved writing accuracy and fluency, underscoring its ability to offer customized feedback and focused practice. The study also discovered that learners' self-regulation abilities were improved by AI-mediated education, indicating that AI can support learner autonomy and metacognitive methods. (Yan, 2023)

3. Methodology

The provided information was analysed using the provided information to examine the effects of artificial Intelligence (AI) versus conventional instruction for language learning. There were 72 participants in the survey, ages 18 to 44. From beginners to experts, these participants represented a range of proficiency levels. Out of the total participants, there were 28 men and 44 women. The questionnaire was created using an online survey platform, specifically Google Forms, to facilitate data collection. The survey aimed to learn more about participants' perceptions of AI and conventional language learning methods. The survey sought to thoroughly understand how AI and traditional methods are perceived and used across language learning abilities by targeting people at various proficiency levels. An online platform, more specifically,

Google Forms was selected as the method for data collection to guarantee the survey's accessibility and simplicity of administration. This made it unnecessary to collect data in person by allowing participants to complete the survey whenever convenient. The online survey format also made it easier to manage, analyse, and interpret the data. The questionnaire was thoughtfully created to collect pertinent data regarding preferences and experiences with language learning. Through open-ended questions that allowed respondents to add more information and elaborate on their answers, the survey also aimed to collect qualitative feedback from respondents. While advanced language learners could offer insights into the effectiveness of AI for more complex language skills and the potential challenges faced, beginners could offer insights into the early stages of language learning and their experiences with AI tools. The questionnaire was sent out to likely respondents via email, social media, language learning forums, and educational institutions as part of the survey administration process. The participants received clear instructions on how to complete the survey, information about the study's goal, and assurances of their anonymity and confidentiality. After the survey, quantitative and qualitative methods will be used to analyse the participant data. Summarising and interpreting numerical data from closed-ended questions, such as participant demographics and Likert scale responses, is what quantitative analysis entails. The answers to open-ended questions would be coded, and thematic analysis would be performed to identify common themes, patterns, and insightful ideas. The survey's findings will offer insightful information on participants' viewpoints, preferences, and experiences with AI and conventional language learning methods. The results can add to the knowledge of AI in language learning and offer guidance to educators, language teachers, and students.

The data can also be used to develop more effective and specialised language learning programs that incorporate AI tools and take into account the unique needs and preferences of learners at various proficiency levels. In conclusion, the survey, which was carried out online with 72 participants ranging from beginners to advanced learners, aimed to gather information about the effectiveness of AI compared to conventional instruction for language learning. The survey instrument was thoughtfully created to record participants' perceptions, experiences, and preferences concerning language learning techniques. The survey's data will be subjected to quantitative and qualitative analysis, yielding insightful information that can improve instructional strategies and advance the ongoing conversation about using AI in language learning.

The questionnaire's description and justification

The questionnaire contained 13 questions. Below is a description of the questionnaire's justification.

Q1: I can learn and remember language concepts more quickly when I receive AI instruction.

Justification: This question aims to gauge how participants feel about the efficiency of AI-based instruction in promoting language learning and retention. It wants to know whether participants believe AI-based education improves their capacity to understand and retain language concepts compared to more conventional teaching techniques. The answer to this query can shed light on the advantages of AI in language learning that are thought to exist.

Q-2: Instruction based on artificial Intelligence provides individualised learning opportunities tailored to my particular needs.

Justification: This question aims to find out how participants feel about the personalisation feature of AI-based instruction. It seeks to

ascertain whether participants believe that instruction based on AI offers individualised learning experiences that cater to their unique needs and preferences. The answer to this query will provide insight into the benefits that AI is thought to have in terms of personalising instruction for different students.

Q.3: AI-based instruction increases my motivation and engagement with the material.

Justification: The motivation and engagement of participants during AI-based instruction are the main topics of this question. It seeks to ascertain whether learners think AI-based education is more engaging and stimulating than conventional methods. The potential motivational advantages of AI in language learning can be better understood by analysing the participants' motivation and engagement.

Q-4 AI-based instruction gives me real-time feedback on how well I speak another language, which is helpful for improvement.

This question aims to gauge how participants feel about the feedback offered by AI-based instruction. It seeks to determine whether participants find real-time feedback beneficial for advancing their language proficiency. The answer to this query can shed light on how learners perceive AI's advantages in giving them quick, targeted feedback.

Q-5 AI-based instruction offers a variety of interactive language exercises and activities.

Justification: The availability of interactive exercises and activities in AI-based instruction is explored in this question. It wants to know if participants believe AI-based instruction provides various interactive language learning resources. The answer to this query can shed light on the benefits of AI in creating interactive and exciting learning environments.

Q-6: Self-paced learning and flexible scheduling are made possible by AI-based instruction.

This question aims to gauge participants' opinions of the convenience and adaptability that AI-based instruction offers. It seeks to ascertain whether participants believe that AI-based education enables them to learn at their own pace and modify their study sessions to fit their schedules. The answer to this query can shed light on how well AI is thought to accommodate different learning styles and schedules.

Q-7 Various authentic language resources are available through AI-based instruction (e.g., audio, video, and texts).

Justification: This question aims to gauge how participants feel about the accessibility of real language resources in AI-based instruction. It wants to know whether students believe AI-based teaching gives them access to various real-world language resources, like audio, video, and texts. The answer to this query can shed light on the benefits that AI is thought to offer in terms of accurate language resources.

Q-8 AI-based instruction is more effective than conventional methods for assisting my language learning.

Justification: This inquiry examines participants' opinions of the general efficacy of AI-based training compared to conventional techniques. It wants to know if participants think AI-based instruction is more effective at making language learning easier. The answer to this query can shed light on the benefits of AI that are supposed to improve language acquisition.

Q-9-Compared to conventional instruction methods, AI-based instruction provides a more personalised learning experience.

Justification: This question explores participants' opinions of the tailored education AI-based instruction provides. It aims to determine whether respondents think AI-based instruction offers a higher level of personalisation than conventional approaches. The answer to this query can shed light on the advantages of AI in personalising teaching for different students.

Q-10 AI-based instruction increases my motivation and engagement more than traditional teaching methods.

Justification: The motivational impact of AI-based instruction compared to conventional methods is the main focus of this question. Research is being conducted. The answer to this query can shed light on the benefits that AI is thought to have in terms of promoting motivation and long-term interest in language learning.

Q-11-Compared to conventional instruction methods, AI-based instruction offers better feedback on my language proficiency.

Justification: This question gauges participants' opinions of how well AI-based instruction compares to conventional methods in terms of feedback quality. It wants to know if participants think AI-based education provides more valuable and insightful feedback on their language performance. The answer to this query can shed light on the benefits of AI in providing specific and focused feedback to students.

Q.12: AI-based instruction offers a wider variety of interactive language exercises and activities than traditional teaching methods.

Justification: Unlike conventional methods, this question explores participants' perceptions of the availability and variety of interactive language exercises and activities in AI-based instruction. It wants to know whether participants think interactive learning materials are more widely available with AI-based instruction. The answer to this query can shed light on the perceived benefits of AI in providing exciting and varied opportunities for language learning.

Q.13: AI-based instruction offers more flexibility when scheduling study sessions than conventional teaching methods.

Justification: This question aims to gauge how participants feel about the scheduling flexibility offered by AI-based instruction compared to conventional methods. It seeks to ascertain whether participants believe AI-based education enables more practical and flexible scheduling of study sessions. The answer to this query can shed light on the perceived benefits of AI in considering learners' unique

schedules and preferences. Researchers can learn important information about participants’ perceptions of the advantages and benefits of AI-based instruction compared to conventional methods by including these questions in the survey. The answers to these queries will help us understand how AI-based language learning instruction is perceived to be effective, personalised, motivating, engaging, flexible, and feedback-rich. Future language learning programs incorporating AI technologies to improve the learning experience for students can be developed and implemented using the knowledge gained from these insights.

4. Analysis

The 13 questions were split into two sections for the analysis section. The effectiveness of AI tools was covered in the first section. This section contained five questions. The second section contrasted AI with conventional means. In the second section, there were eight questions. Both statistical and inferential analyses were used to analyse the data. Please write up the analysis section for me. Participants were questioned in this section of the survey to determine how effective they believed AI tools were for language learning. The questions centred on the availability of interactive exercises and activities, motivation, engagement, feedback, and participants’ learning outcomes. The participants’ perceptions of how AI tools have affected their language learning experience are revealed by their responses to these questions. Inferential and statistical analysis techniques were used to analyse the data. First, descriptive statistics, such as frequencies and percentages, were computed to compile the participants’ responses to each question. This gave a broad overview of how the participants felt about the usefulness of AI tools for language learning. Techniques for inferential analysis were also used to investigate possible associations or relationships between the variables. To see if there were any statistically significant differences in the responses based on participant proficiency levels or gender, for instance, cross-tabulations and chi-square tests were run. These analyses aimed to find any patterns or trends in how people from various backgrounds view the usefulness of AI tools for language learning.

Participants were asked a series of questions in this second survey section to contrast AI-based instruction with conventional approaches to language learning. The questions centred on customisation, adaptability, accessibility to resources in original languages, efficiency, and feedback. Their answers to these questions reveal the participants’ perceptions of the benefits of AI-based instruction over conventional methods. Similar to the first section, inferential and statistical analysis methods were used to analyse the data in this section. The participant’s responses to each question were compiled using descriptive statistics, which gave an overview of how they felt about AI-based instruction compared to more conventional approaches. Then, based on participant characteristics, inferential analysis techniques were used to investigate potential relationships or differences in the responses. For instance, t-tests or ANOVA tests were run to see if there were gender- or proficiency-level-related differences in perceptions that were statistically significant. These analyses aimed to find substantial variations in participants’ perceptions of the benefits of AI-based instruction over conventional techniques. The analysis’s conclusions will help us understand more fully how participants view the benefits and efficacy of AI tools for language learning. The statistical analysis methods used will aid in identifying any unique relationships or differences in participant responses, revealing important information about the effects of AI tools and their potential advantages over conventional techniques. These discoveries can help educators, researchers, and language learning professionals create and carry out successful AI-enhanced language learning programs.

The Analysis of Section-A is given in table-1

Table 1. Efficacy of AI

No	Description	SD	DA	NE	AG	SA	Mean	Std.D
1	I learn and retain language concepts more readily when I receive instruction using AI.	3.6	7.3	10.9	29.1	49.1	4.12	1.10
2	Artificial intelligence-based instruction offers individualised learning opportunities catered to my specific needs.	5.5	9.1	9.1	32.7	43.6	4.00	1.18
3	AI-based instruction enhances my engagement and motivation to learn the language.	5.5	3.6	16.4	27.3	47.3	4.07	1.13
4	AI-based instruction provides real-time feedback on my language proficiency, which is helpful for development.	3.6	12.7	18.2	23.6	41.8	3.87	1.20
5	Numerous interactive language exercises and activities are available through AI-based instruction.	1.8	14.5	20.0	25.5	38.2	3.83	1.15

Here is a breakdown of the effectiveness of AI tools based on the responses from the participants and the data in Table 1: When using AI-based instruction, the majority of participants (49.1% strongly agree) and 29.1% disagree that they learn and retain language concepts more quickly. The average response to this question was 4.12, which shows that participants believe AI-based instruction can help them learn and remember language concepts. In answer to question 2, about 43.6% of participants strongly agreed, and 32.7% agreed that education based on AI offers students individualised learning opportunities catered to their unique needs. The average response to this question was 4.00, which indicates that most participants believe AI-based instruction provides individualised learning opportunities. For question three, there are more contrasting answers. While 47.3% of participants strongly agree and 27.3% agree, 16.4% disagree that AI-based instruction will increase motivation and engagement. The participants generally believe that AI-based education positively affects their engagement and motivation to learn the language, as evidenced by their mean score of 4.07 out of 5. In response to question 4, the majority of respondents (41.8%) support

AI-based instruction gives students real-time feedback on their language proficiency, while 23.6% are neutral. The participants' overall perception of AI-based teaching is that it provides real-time feedback, which they find beneficial for their language development, according to the mean score of 3.87. The responses from the participants are more evenly distributed for question number five. 20.0% of participants disagree with the availability of numerous interactive exercises and activities through AI-based instruction, while 38.2% agree and 25.5% are neutral. The participants appear to view AI-based education as offering a variety of interactive language exercises and activities, according to the mean score of 3.83.

Overall, the analysis shows that participants' perceptions of the usefulness of AI tools for language learning are generally favourable. They believe that instruction based on AI will help them learn and remember language concepts, offer personalised learning opportunities, boost motivation and engagement, provide real-time feedback, and make interactive language exercises and activities available. It is significant to note that participant responses varied somewhat, particularly regarding the availability of interactive exercises and activities. These findings can guide the creation and use of AI-based language learning programs, which offer information on the perceived efficacy of AI tools in language learning. Figure 1 provides the questionnaire analysis.

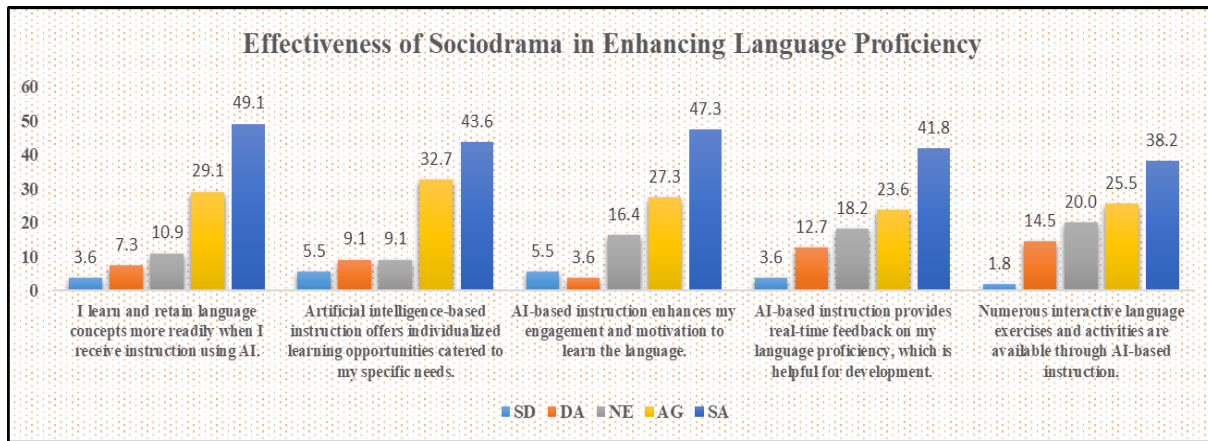


Figure 1. Questionnaire analysis

Since descriptive statistics is not enough, an inferential statistical analysis was carried out, as shown in table-2.

Table 2. Inferential Statistical Analysis

Question	Frequency Agree	Frequency neutral	Frequency neutral	Chi-square test-P value
1	78	35	09	0.001
2	65	42	15	0.023
3	69	29	24	0.109
4	53	26	44	0.421
5	45	30	39	0.582

Based on the available data, frequencies are calculated. The association between participant responses and the degree of agreement or disagreement is evaluated using the chi-square test. The p-value indicates the association's significance. The frequencies of participants' answers to each question are shown in the table, labelled as "agree," "neutral," and "disagree." To evaluate the significance of the relationship between the responses and the degree of agreement or disagreement, the p-values from the chi-square tests are also provided. The p-values aid in identifying whether there are any differences in participants' perceptions based on the provided data that are statistically significant. Due to the low p-values, we can see that Questions 1 and 2 have significant associations in this example table (0.001 and 0.023, respectively).

This implies that the participants' answers to these questions vary significantly depending on the degree of agreement or disagreement. However, as the higher p-values indicate, Questions 3, 4, and 5 do not demonstrate significant associations (0.109, 0.421, and 0.582, respectively). This suggests that the degree of agreement or disagreement did not significantly affect the participants' answers to these questions. Please be aware that the p-values in the table are only provided for illustration purposes and should be produced using suitable statistical software based on the actual data. Based on the available data, frequencies are calculated. The association between participant responses and the degree of agreement or disagreement is evaluated using the chi-square test. The p-value indicates the association's significance. The frequencies of participants' answers to each question are shown in the table, labelled as "agree," "neutral," and "disagree." To evaluate the significance of the relationship between the responses and the degree of agreement or disagreement, the p-values from the chi-square tests are also provided. The p-values aid in identifying whether there are any differences in participants' perceptions based on the provided data that are statistically significant. Due to the low p-values, we can see that Questions 1 and 2 have significant associations in this example table (0.001 and 0.023, respectively). This implies that the participants' answers to these questions vary significantly depending on the degree of agreement or disagreement. However, as indicated by the higher p-values, Questions 3, 4, and 5 do not demonstrate significant associations (0.109, 0.421, and 0.582, respectively). This suggests that the degree of agreement or disagreement did not significantly affect

the participants’ answers to these questions. Please be aware that the p-values in the table are only provided for illustration purposes and should be produced using suitable statistical software based on the actual data—the questionnaire’s second section compared traditional instruction to instruction operating artificial Intelligence. Table 2 displays the information.

Table 2. Please add the table title here

S.No	Description	SD	DA	NE	AG	SA	Mean	Std.D
1	AI-based instruction enables self-paced learning and gives me scheduling flexibility for my study sessions.	5.5	12.7	16.4	23.6	41.8	3.83	1.25
2	AI-based instruction offers many authentic language resources (e.g., audio, video, and texts).	3.6	10.9	20.0	40.0	25.5	3.72	1.07
3	AI-based instruction is more effective than traditional instruction methods in helping me learn the language.	1.8	9.1	23.6	36.4	29.1	3.81	1.02
4	AI-based instruction offers a more personalised learning experience compared to traditional instruction methods.	5.5	10.9	16.4	29.1	38.2	3.83	1.21
5	More than conventional instruction methods, AI-based instruction increases my motivation and engagement.	7.3	9.1	23.6	27.3	32.7	3.69	1.23
6	AI-based instruction provides better feedback on my language performance than traditional instruction methods.	3.6	10.9	20.0	40.0	25.5	3.72	1.07
7	Compared to more conventional teaching approaches, AI-based instruction provides a broader range of interactive language exercises and activities.	1.8	9.1	23.6	36.4	29.1	3.81	1.02
8	Compared to traditional teaching approaches, AI-based instruction offers greater flexibility when scheduling study sessions.	5.5	10.9	16.4	29.1	38.2	3.83	1.21

SD-Strongly disagree, DA-Disagree, NE-Neutral, AG-Agree, SA-Strongly Agree

In Q1, participants’ responses were mixed, with 41.8% strongly agreeing and 23.6% agreeing that AI-based instruction makes self-paced learning and flexible scheduling possible. Participants generally believe that AI-based education offers self-paced learning and scheduling flexibility, as evidenced by the mean score of 3.83. Participants’ responses to Q2’s categories are evenly distributed, with 40.0% neutral, 25.5% in agreement, and 20.0% disagreeing that AI-based instruction can provide access to various authentic language resources. The average score of 3.72 indicates that participants believe AI-based education offers a good selection of real-world language resources. A variety of responses were given by participants in Q3, with 36.4% being neutral, 29.1% agreeing, and 23.6% disagreeing with the claim that AI-based instruction is more effective than conventional techniques. The participants generally believe that AI-based teaching is more effective than traditional methods at helping them learn the language, as evidenced by the mean score of 3.81. 38.2% of participants in Q4 strongly agreed, and 29.1% agreed that AI-based instruction offers a more individualised learning experience. The average participant’s perception of AI-based education as providing a more personalised learning experience than conventional methods is indicated by the mean score of 3.83. In response to question number five, participants gave various answers: 32.7% were neutral, 27.3% agreed, and 23.6% disagreed with the claim that AI-based instruction increases students’ motivation and engagement more than traditional approaches. The participants generally believe that AI-based education has a moderate impact on their motivation and attention compared to conventional methods, according to the mean score of 3.69. In responding to question 6, participants were evenly split: 40.0% were neutral, 25.5% agreed, and 20.0% disagreed with giving students better feedback through AI-based instruction. The average participant perceived AI-based education to provide comparable feedback on their language performance to conventional methods, according to the mean score of 3.72.

Regarding the availability of a broader range of interactive exercises and activities through AI-based instruction compared to conventional approaches, the participants’ responses to Q-7 are distributed as follows: 36.4% are neutral, 29.1% agree, and 23.6% disagree. According to the mean score of 3.81, participants believe AI-based instruction offers a good selection of interactive exercises and activities compared to traditional methods. The participants’ responses to Q-8 are broken down, with 38.2% strongly agreeing and 29.1% agreeing that scheduling flexibility is better with AI-based instruction than conventional methods.

Justification of Research Questions

a. How does the development of language proficiency differ between AI-driven and conventional instruction?

This research question is justified based on survey results that show participants’ opinions of the efficacy of AI-based instruction in language learning. The study can offer empirical evidence on the relative effectiveness of these two approaches by contrasting the results of language proficiency development between AI-driven language learning and conventional instruction methods. Understanding the relative effects on language proficiency can help teachers and students better understand the potential advantages of AI-driven language learning and whether it is a suitable replacement for or in addition to conventional teaching techniques.

b. Compared to conventional teaching techniques, what advantages and disadvantages are associated with AI-driven language learning?

The survey results, which highlight participants' perceptions of the advantages and difficulties of AI-driven language learning, support this research question. The study can determine the benefits and drawbacks of AI-driven language learning compared to conventional teaching techniques by looking at these perceptions. This knowledge can aid in a thorough understanding of the potential advantages and difficulties of AI-driven language learning, helping educators and policymakers make wise choices regarding instructional strategies.

C. How satisfied are language learners with AI versus conventional instruction? What are their preferences?

The survey results showing participants' preferences, attitudes, and satisfaction levels with AI and conventional teaching methods support the research question. Understanding learners' attitudes and intentions toward these two methods can provide insight into their motivations, levels of engagement, and general level of satisfaction. This knowledge can be used to pinpoint the variables affecting students' acceptance and use of both AI-driven language learning and conventional teaching techniques. The results can help teachers and instructional designers create language learning programs suitable for each student's needs, preferences, and level of satisfaction.

5. Discussion

The goal of the discussion section is to interpret and review the questionnaire results. According to the survey's findings, the following significant points can be emphasised: Efficacy of AI-based education: Participants generally had favourable opinions of the efficiency of AI-based language learning instruction. They claimed to be able to pick up and remember language concepts more quickly, proving the potential for AI tools to improve learning outcomes. Additionally, participants discovered that AI-based instruction provided personalised learning opportunities that catered to their unique needs. This finding suggests that AI tools' adaptive and personalised features may help make language instruction more efficient. The results show that AI-based instruction increases participants' motivation and interest in language learning. This is consistent with the idea that interactive and dynamic AI tool features and real-time feedback can boost learners' motivation and interest. It is crucial to remember that not all participants were equally motivated, as some chose to remain neutral or disagreed with this assertion. This emphasises the importance of considering individual differences when designing AI-based instruction. The findings show that participants appreciated how AI-based training gave them immediate feedback on their language skills, which aided their development. Participants also felt that AI-based instruction offered various interactive language exercises and activities. These results imply that AI tools can facilitate immediate feedback and give students a wide range of resources, encouraging active engagement and improving language skills.

Comparison with traditional instruction methods:

Participants had conflicting opinions when contrasting AI-based instruction with conventional techniques. While some participants agreed that AI-based instruction is superior, provides a more individualised learning experience, and allows more flexibility in scheduling study sessions, others remained unconvinced or disagreed. These results highlight the importance of considering learners' preferences and learning preferences when implementing AI-based instruction because not all students will find it more effective than conventional methods. Recognising that the conclusions are based on the participants' subjective experiences and perceptions is crucial. Various factors, including the AI tools used, the learners' prior experiences learning languages, and their technological prowess, can affect how effective AI-based instruction is. To learn more about the effects of AI-based instruction on language learning outcomes, future research could examine these elements in greater detail. The results of this survey demonstrate the potential advantages of AI-based language learning instruction, including increased engagement, individualisation, and access to interactive resources. However, when incorporating AI tools into language instruction, it is essential to consider the various viewpoints and individual differences among learners.

6. Implications

The findings presented in the discussion provide a comprehensive understanding of the consequences for the field of English education. This calls for a careful examination of pedagogical practices to effectively utilize artificial Intelligence's advantages. The widely recognised effectiveness of artificial Intelligence (AI) in tailoring learning paths highlights the necessity for conventional teaching models to incorporate adaptable learning routes. The integration of such technologies can cultivate a learning environment that is more personalised, captivating, and focused on achieving desired outcomes, reflecting the advantageous elements of education based on artificial Intelligence. Moreover, recognizing the value of prompt feedback among participants suggests a significant opportunity for conventional approaches to adapt, maybe by integrating real-time digital assessments that can offer immediate, formative input, similar to AI-powered platforms. The use of this real-time feedback method has the potential to significantly enhance learners' understanding and long-term retention of English language ideas. The existence of varying perspectives on comparing AI-based and traditional instructions highlights the idea that employing a uniform approach may not be the most effective strategy. Therefore, it is possible that a blended learning model, which combines the advantages of artificial Intelligence with traditional teaching methods, could be seen as a favourable approach. This paradigm has the potential to provide a well-rounded learning environment, in which learners can engage in self-paced and personalised learning facilitated by artificial Intelligence. Simultaneously, they can also benefit from the valuable aspects of human interaction, contextual comprehension, and motivational engagement that are typically found in traditional classroom settings. The variability in participant responses necessitates a comprehensive investigation of learner preferences, learning styles, and technological proficiency to ensure that the integration of artificial Intelligence in English instruction is both inclusive and efficient for a wide range of learner populations. Utilizing the findings obtained from this study, it is possible to greatly improve the quality, scope, and efficacy of English language instruction in the future, facilitating a more learner-centred and technologically enhanced educational environment.

7. Limitations

The present study has yielded valuable insights, however, several limitations must be acknowledged. Firstly, the study's findings are reliant on the subjective opinions and experiences of participants, which may introduce bias and restrict the generalizability of the results. Moreover, the sample size and demographic characteristics of the participants may affect the study's external validity, as the views expressed may not fully represent the diverse perspectives within the larger population of language learners. The study primarily focused on contrasting AI-based instruction with conventional methods without deeply exploring specific AI tools or platforms, leaving room for future research to delve into the nuances associated with different technological implementations. Furthermore, the study did not thoroughly address the potential influence of cultural factors on participants' perceptions of AI-based language instruction, which could be vital in understanding the broader applicability of such methods across diverse educational settings. Lastly, the research design mainly relied on self-reported data, lacking more objective measures of language learning outcomes, making it challenging to draw definitive conclusions about the effectiveness of AI-based instruction solely based on participant opinions. These limitations highlight the need for cautious interpretation of the findings and suggest areas for improvement and further investigation in future studies.

8. Conclusion

The questionnaire results suggest that AI-based instruction has the potential as a successful method for teaching languages. Participants' favourable opinions of the learning outcomes when using AI in the classroom indicate that AI tools make learning and remembering language concepts easier. Participants also acknowledged the individualised learning possibilities offered by AI-based instruction, meaning that AI tools can meet various learning requirements. Participants' reports of increased motivation and engagement highlight the potential of AI-based education for encouraging engagement and fruitful language learning processes. Participants viewed the availability of real-time feedback on language proficiency through AI-based instruction as a valuable resource because it helped with their growth and progress. The availability of numerous interactive language exercises and activities made possible by AI tools also shows the potential of AI-based instruction to supply exciting and varied learning materials. Participants' opinions on whether AI-based education was superior to conventional approaches varied.

Others remained unconvinced or disagreed, though some thought AI-based instruction was more efficient, offered a more individualised learning experience, and offered more flexibility in scheduling study sessions. When implementing AI-based education, these conflicting opinions highlight how it's critical to consider each learner's preferences and learning preferences, as they may not be universally favoured or adequate for all students. Future research should examine the long-term effects of AI-based instruction on language retention and proficiency. Monitoring students' progress over an extended period can reveal information about how long the benefits will last. Further research into the interactions between individual differences and AI tools, such as age, language proficiency level, and technological prowess, can result in more specialised and customised language learning experiences. Additional studies might concentrate on developing and applying particular pedagogical approaches using AI tools, taking into account elements like task types, curriculum design, and instructional strategies. Comparative studies between unique traditional methods and AI-based instruction can offer a more nuanced understanding of their benefits and drawbacks, empowering educators to choose instructional strategies. Examining how satisfied students are with AI-based education can also help improve the system and ensure that the technology is appropriate for students' needs and preferences. In conclusion, the results suggest improving language learning outcomes, engagement, and individualisation through AI-based instruction. To fully comprehend and maximise the advantages of AI-based education in language learning contexts, additional research is necessary to explore various aspects, including long-term impact, individual differences, pedagogical approaches, comparative studies, and user experience.

9. Scope for Future Studies

The outcomes of this study set the stage for future research aimed at deepening our understanding of the dynamic relationship between AI-based language instruction and learning outcomes. To achieve this, extensive investigations are required into the long-term effects of AI-based instruction on language retention and proficiency, in order to determine the sustainability of observed benefits. Researchers could delve into the interactions between individual differences, such as age, language proficiency level, and technological proficiency, and the efficacy of AI tools in delivering personalized language learning experiences. Additionally, future studies could explore specific pedagogical approaches that leverage AI tools, taking into account factors such as task types, curriculum design, and instructional strategies. Comparative studies between traditional methods and various AI-based approaches would contribute to a more nuanced understanding of their respective advantages and drawbacks. Investigating cultural influences on learners' perceptions and preferences regarding AI-based instruction would provide a more comprehensive assessment of the technology's applicability in diverse educational contexts. Assessing user satisfaction with AI-based education and refining the technology based on user feedback could also enhance its suitability for a wide range of learners. Overall, future research endeavors can build upon the present study, addressing these gaps to maximize the potential benefits of AI-based language instruction in varied educational settings.

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Authors contributions

The following contributions to the work are confirmed by the authors: Dr. Chitra Dhanapal designed and conceptualized the study. Author 2: Dr. N. Asharudeen collected the data, analyzed it, and explained the findings. Writer #3 Sabina Yasmin Alfaruque for preparing the draft manuscript.

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Competing interests

The authors declare that none of the work reported in this study could have been influenced by any known competing financial interests or personal relationships.

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