



RESEARCH ARTICLE

An Insight into the Efficiency of Artificial Intelligence (AI)-Chatbot as Digital Tutors for Enhancing Learners' Motivation and Performance in Linguistics Courses

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Since the use of advanced technology as digital classrooms all over the world has grown and undergone a significant upsurge to become more prevalent, the study aims to investigate a better understanding of what drives and retains students in linguistics courses. Chatbots are still a useful invention for digital tutoring, and guiding pupils through the peculiar challenges of today's educational system. Students of linguistics are the subject of this research, which investigates how Chatbots have improved their grasp of linguistics courses and helped them accomplish their goals academically. This research uses the Technology Acceptance Model (TAM) to investigate how well students accept Artificial Intelligence (AI)-driven Chatbots to help them do better in their Linguistics courses. Using Google Forms survey questionnaire, 375 students of linguistics participated in the research. Various statistical tools were used to break and analyse the collected data. Results demonstrate that 64.26% of students agree that chatbots, especially when used as digital tutors, aid their learning of linguistics courses. These results demonstrate the significant role that chatbots play in enhancing students' understanding of linguistics courses, mainly the core areas such as phonology, phonetics, morphology, grammar, and applied Linguistics. With a mean score of 3.28, it is clear that interacting with chatbots requires nothing in the way of mental work when it comes to grasping fundamentals like morphology and syntax. More than 81% of the students recognised the improvement in their overall performance in linguistic courses because of the chatbot. The mean score of 4.67 further suggests a consensus among the students regarding the good influence of the chatbot. In addition, it was found that almost 79% of the students agreed that the integration of the chatbot had a motivating effect on their engagement with the study of linguistics courses. These results yielded a mean score of 5.12, highlighting the significance of the chatbot's motivational impact. The study explores as how the AI-driven Chatbots as digital tutors facilitate the understanding of linguistics courses.

1. INTRODUCTION AND STUDY CONTEXT

In recent years, there has been a notable upsurge in the incorporation of technology within the field of education. One such innovation that has garnered attention is the introduction of chatbot systems. Chatbots, which are driven by Artificial Intelligence (AI), have brought about significant transformations in several domains of education by providing tailored and engaging learning engagements. In the field of Linguistic education, where the intricacies of language learning and communication abilities have great significance, the use of chatbots as digital teachers exhibits considerable promise and indispensability. Traditional strategies related to Linguistic studies often encounter difficulties in properly engaging learners, particularly within the domain of linguistic education where motivation and performance are closely intertwined. The traditional configuration of a classroom may encounter challenges in accommodating the varied learning requirements and

preferences shown by students. Within this particular setting, the introduction of chatbot systems as digital teachers offers a very persuasive resolution. Chatbots have the potential to provide personalised assistance, immediate evaluation, and adaptable learning opportunities that are customised to the unique pace and preferences of individual learners (Guo et al., 2023). Furthermore, in light of recent global events that have sped up digital transformation, there has been a growing need for online and remote education. Consequently, it has become crucial to investigate the efficacy of chatbot systems in improving learners' motivation and performance in linguistics courses.

The need to perform this study becomes apparent when contemplating the possible influence on learners' motivation and academic achievement. Recent studies conducted by Abbas et al. (2022) and Adiguzel et al. (2023) have investigated the use of online chat platforms and chatbots powered by artificial intelligence (AI) to augment student engagement and revolutionise the educational domain. Furthermore, a study conducted by Chiu et al. (2023) underscores the significance of teacher assistance and student engagement within artificial intelligence (AI)-driven educational settings. The comprehension of the function of chatbot systems in fostering motivation is in line with the overarching objective of enhancing educational achievements, particularly in the context of linguistic courses where active and self-assured engagement is of utmost importance. Moreover, the research done by Lee et al. (2022) and Guo et al. (2023) sheds insight on the influence of artificial intelligence (AI)-based chatbots on students' self-confidence and ability to construct persuasive arguments. These studies underscore many positive aspects of incorporating chatbots into language teaching. The examination of the efficacy of chatbot systems in teaching Linguistics courses extends beyond technical advancements, as it serves as a pedagogical imperative to improve the standard of education, foster learner independence, and cater to the changing requirements of students in the era of digitalization.

This study aims to address the disparity between conventional teaching approaches and contemporary pedagogies that use technology. This can lead to increased motivation, and engagement, and proficiency among students. The research conducted holds great significance due to its thorough examination of various linguistic elements. This extensive analysis opens opportunities for the development of more efficient and customised language education approaches. Ultimately, this will prove advantageous for both educators and learners in the field of linguistics.

2. REVIEW OF THE RELATED STUDIES

2.1. Importance of Digital Technology in Modern Linguistics

The field of Linguistic education covers a wide array of courses that are essential for acquiring a comprehensive understanding of the structures and usage of language. The disciplines of phonology, which examines the systematic sound patterns present in languages, and phonetics, which investigates the physical production and acoustic characteristics of speech sounds, serve as fundamental pillars within the field of linguistics. The study of syntax involves the analysis of sentence structure, whereas semantics focuses on the investigation of meaning. Morphology, on the other hand, is concerned with the examination of word forms (Jeon, 2021; Nghi et al., 2019). Grammar, which encompasses both syntax and morphology, plays a crucial role in the construction of language. The branch of pragmatics, which concerns itself with the study of language in context, serves as a vital component within this all-encompassing linguistics curriculum. Traditional teaching methods, nevertheless, frequently encounter constraints in effectively captivating students, resulting in diminished motivation and weak academic achievement (Coniam, 2014; Obonkugo, 2023). The existence of this gap underscores the necessity for the implementation of inventive pedagogical strategies that harness the potential of digital technology.

Linguistics courses often encounter challenges in effectively engaging students, despite the presence of lecturers and traditional classroom lessons. The facilitation of learner motivation within the field of linguistics, frequently necessitates the implementation of interactive and personalised learning experiences, which conventional instructional approaches often encounter difficulties in delivering. The present challenge has the potential to engender a decline in students' level of commitment, thereby impeding their overall academic performance (Essel et al., 2022; Neji et al., 2023). According to a study conducted by Fryer et al. (2017), it has been observed that depending solely on human task partners, particularly in linguistics classes, may not effectively maintain students' interest in the

long run. Consequently, there arises a need to incorporate innovative approaches in order to enhance motivation.

The incorporation of Artificial Intelligence (AI) models, specifically chatbots, has notably augmented students' comprehension of phonology and phonetics. AI-driven platforms provide learners with a range of valuable features, including interactive pronunciation exercises, real-time feedback, and advanced speech analysis tools. These features enable learners to enhance their speech sounds with a high level of effectiveness (Chang et al., 2022; Hapsari & Wu, 2022). The utilisation of these technologies facilitates the establishment of interactive and dynamic educational settings, thereby fostering increased student engagement and motivation to dedicate additional time towards the mastery of phonetic subtleties.

Grammar is a highly demanding subject for undergraduates studying linguistics. But the use of artificial intelligence (AI) technology to language learning has shown to be very beneficial for improving comprehension and ability with grammar. Kim et al. (2019) claims that the use of chatbots with grammar-specific modules provides a way to give interactive grammar lectures, tests, and real-time mistake corrections. This methodology facilitates motivating and encouraging learning opportunities for those looking to improve their grammar. In addition, artificial intelligence (AI) models in pragmatics assists students in understanding complex concepts like implicature and speech actions by simulating real-world language settings (Zhai & Wibowo, 2022). Research has shown that the interactive features of artificial intelligence (AI) systems used in classrooms positively affect students' motivation by creating a feeling of engagement and encouraging active participation. Improvements in general language performance and competence follow from this.

2.2. Chatbots as Digital Tutors; An Overview of Findings of Some Previous Studies

Numerous academic investigations have been conducted to examine the efficacy of chatbots in boosting student engagement, motivation, and academic success. The research done by Abbas et al. (2022) examined the impact of online chat and chatbots on student engagement among senior students in higher education, revealing considerable enhancements in engagement levels. The research results underscored the significance of chatbots in addressing the varied requirements of adult learners, offering individualised support that is often absent in conventional approaches. Adiguzel et al. (2023) conducted a study to examine the transformational capacity of ChatGPT within the realm of education, with a particular focus on its ability to bring about revolutionary changes in the process of learning. The findings of their research indicate that chatbots using artificial intelligence (AI) contribute to the enhancement of interactive and adaptable learning experiences, hence fostering student motivation and active engagement in the educational process. The study by Al-Abdullatif et al. (2023) on Bashayer Chatbot in Saudi Arabia is a significant study. The researchers aimed to assess the impact of this chatbot on students' motivation levels and their utilisation of learning methodologies. The findings of the research indicate that chatbots have the potential to not only augment students' motivation but also foster the utilisation of various learning methodologies, accommodating individual preferences. The study conducted by Chang et al. (2022) investigated the use of chatbots in nursing education, highlighting the potential wider application of chatbots in specialised language domains. The research conducted demonstrated the efficacy of chatbots in facilitating students' acquisition of domain-specific language, hence enhancing their motivation and engagement in linguistic courses that use technical or specialised terminology.

Chiu et al. (2023) underscored the significance of teacher support and student motivation within artificial intelligence (AI)-enabled learning settings. The study conducted by the researchers shed light on the mutually beneficial association between instructor assistance and interactions with chatbots. When instructors incorporate chatbots successfully into their teaching techniques, pupils are driven to interact actively, resulting to increased language performance. In addition, Deng and Yu (2023) did a meta-analysis and systematic review, suggesting the overall beneficial influence of chatbot technology on sustainable education. The study's results demonstrated that chatbots promote sustainable learning behaviours among students, thereby fostering persistent effort and motivation, both of which are essential for achieving long-term success in language courses.

The integration of chatbots into language learning endeavours also serves to effectively tackle the unique obstacles encountered by pupils. In their study, Haristiani and Rifa'i (2020) investigated the

integration of chatbots and social media platforms to enhance personal learning environments in the context of language learning. The integration of many elements not only cultivates a communal atmosphere among learners but also offers supplementary resources and assistance, hence enhancing motivation and academic achievement. In a study undertaken by Ji, Han, and Ko (2023), a systematic review was carried out to examine the role of conversational Artificial Intelligence (AI) in language teaching, specifically in relation to its partnership with human instructors. The use of chatbots to support immersive learning experiences has been shown to cultivate a profound feeling of motivation and engagement among learners, ultimately resulting in enhanced performance in linguistic courses.

The works cited above jointly illustrate the diverse effects of chatbots as digital instructors in education. These studies highlight the crucial significance of chatbots in strengthening student enthusiasm, engagement, and overall academic achievement in the context of linguistics related courses. Through the use of strategies that cater to the unique learning requirements of individuals, promote independence, and provide tailored assistance, chatbots facilitate dynamic learning environments that enable students to achieve exceptional outcomes in their language endeavours.

2.3. Theoretical Foundation

Many theoretical models have been implemented in exploring motivation and academic performance of students, including the importance of AI systems in enhancing academic performance. This study selected theoretical foundation from the dimension of technology acceptance and usefulness. This informs the decision to use Technology Acceptance Model (TAM) in the study. Fred Davis's Technology Acceptance Model (TAM) is a comprehensive framework for learning about how people feel about and react to new technologies, with a particular emphasis on how easy and helpful they find such technologies to be. TAM provides vital insights on how students feel about and interact with chatbots as digital instructors in the context of linguistic education. Taking a TAM approach into consideration, it is essential to investigate how students rate the convenience and efficacy of chatbots for learning new languages. The purpose of this investigation is to better understand what drives and retains students in linguistics courses.

Okonkwo and Ade-Ibijola (2021) and Wu (2023), among others, have shown that TAM is useful for gaining insight into students' attitudes about new technologies in the classroom. According to the findings of these research, the simplicity of use and perceived utility of technology have a substantial effect on students' attitudes and intentions about technology adoption. Researchers have also used TAM to assess how well students get along with educational chatbots and virtual teaching assistants, yielding important insights into the factors that affect students' attitudes and behaviours when interacting with these technologies (see, for example, Lee et al., 2022; Essel et al., 2022; Agustini, 2023).

This research uses TAM to determine how well students respond to chatbots used in a digital linguistics classroom. The study's overarching goal is to identify the most important factors influencing students' adoption of chatbots by assessing their opinions on the convenience and efficacy of utilising chatbots to improve their language abilities. The findings of this study will have important consequences for the development and use of chatbots in linguistics classrooms, as well as for our understanding of the elements that shape students' perspectives.

The use of TAM as the theoretical basis stems from the theory's demonstrated success in the field of education. Teachers and designers may better meet students' preferences and wants by gaining a deeper grasp of the elements affecting their adoption of chatbots. TAM's insights inform this alignment, which may boost students' enthusiasm and engagement, leading to higher achievement in linguistics classes. In addition, this study uses TAM to contribute to the larger body of knowledge on technology acceptability within educational settings, therefore shedding light on how to better design and implement educational technologies in the future.

3. STUDY METHODOLOGY AND PROCEDURE

3.1. Study Questions

During the literature review, the gaps in the literature in connection to the reviewed theoretical model, unveiled two significant research questions:

- i). What is the ease of AI-generated Chatbots as digital tutors in enhancing students' motivation and academic performance in Linguistic Courses?
- ii). How useful is AI-powered Chatbots in enhancing students' performance in Linguistics courses?

These two research questions were derived from the two key segments of TA< model, which are for the ease of use of technology and perceived usefulness of technology. They form the basis for data collection and analysis in this study.

3.2. Study Approach

Quantitative survey has become significant in critically evaluating the impact and influence of technology on the academic performance of students. In this paper, quantitative study design was selected to be able to collect numerical data from the study participants to explore technological acceptance in relation to the impacts of the Chatbots on the academic performance of students in Linguistics.

3.3. Study Participants

Linguistics has grown to become a globally recognized discipline at the university level. The course may be found in different faculties across universities, but the course curricula are generally similar, exploring language related courses, including studies of sounds in languages (phonology and phonetics), studies of the language grammar (morphology and syntax), and the studies in language use in context and interpretation (stylistics, pragmatics, discourse analysis and semantics). There are other units in the course, including the Applied Linguistics units. In these directions, many students are currently studying these courses across plethora of universities globally, including studies in translation and foreign language education. As such, the participants in this research are students currently studying Linguistics in its broader sense, across different locations. They were recruited through online platforms after careful derivation of their informed consent.

3.4. Study Sampling and Size

Randomised sampling technique was used in the selection of the Linguistics students that participated in the study. The choice of randomization is mainly to accommodate as many students as possible who wish to participate in the study. Using the randomized sampling, a total of 359 students were selected for the study. The collected demographic variables are summarized in the table below:

Table 1: Demographic Variables

Demographic Information	Variables	Frequency (Count)	Percentage (%)
Gender	Male	120	33.42%
	Female	239	66.68%
Age Range	19 years below	45	12.53%
	20-24 years	120	33.43%
	25-29 years	105	29.24%
	30 years and above	89	24.8%

The demographic breakdown of the study's sample population of 359 Linguistics Students showed a very even distribution of gender and age. The female Linguistics students that participated in the study made up the vast majority (66.68%), while male participants made up just 33.42%. There was a broad variety in the age range represented in the research. Approximately 33.43% of the sample were in the 20–24-year-old bracket. Of the responses, 29.24% fell into the 25–29-year-old bracket, while 24.8% were 30 and over. In addition, 12.53% were less than 19 years old. The study's comprehensive investigation of the research goals relies on this demographically varied sample to provide a full picture of the effects of chatbots as digital tutors in linguistics education for students of varying ages and genders.

3.5. Study Tools and Procedure

Survey questionnaires were used as the primary tool for data collection. The questionnaire was designed as a Google form and distributed to the students electronically. We used Likert scale of four points (strongly agree, SA; agree, A; disagree, D; and strongly disagree, SD), to create the questionnaire items. The questionnaire was segmented into three major parts with a total of 12 study questions. The first two questions are the demographic variables. The remaining ten questions were then generated from the two research questions and five questionnaire items from each research question. These ten questions were formulated based on the perceived ease of use and perceived usefulness of the TAM model.

3.6. Data Analysis Procedure

All the analyses are conducted using relevant statistical measures, including the calculation of the percentile values of the Likert scales, the mean, and the standard deviations. The analysis was conducted through summarising the results presented in descriptive statistics tables.

4. RESULTS AND DISCUSSION OF FINDINGS

4.1. Presentation of Results

Two key research questions guided the development of the study tool used for the data collection. It was also established that the same research questions guide the result presentation and analysis. This understanding informs the further segmentation of the result presentation.

A. Ease of Using Chatbots to Enhance Performance in Linguistics Courses

In accordance with the adoption of the TAM in this study, the first requirement is to access the ease of using a technological system by the target population. In this case, the focus is to provide a summary of the data derived from the questions: “what is the ease of AI-generated Chatbots as digital tutors in enhancing students’ motivation and academic performance in Linguistics Courses? The results are summarised in the table below.

Table 2: results of Ease of Using Chatbots as Digital Tutors for Linguistics Courses

Question	SA	A	D	SD	Mean	Std. Dev
I find it simple to use the chatbot as a tool for enhancing my understanding of linguistics courses.	34.26	45.12	15.04	5.58	3.35	0.75
I see the chatbot's interface as user-friendly, facilitating my exploration of its functionalities for the purpose of acquiring knowledge in the fields of phonology and phonetics.	34.26	38.72	17.27	9.75	3.25	0.82
Gaining insight via interaction with the chatbot requires little exertion on my part in comprehending the fundamental subjects of morphology and syntax.	34.26	38.72	17.27	9.75	3.28	0.79
The chatbot offers concise and straightforward guidance for comprehending courses that are tailored to certain contexts, like pragmatics and stylistics.	29.53	38.72	19.22	12.53	3.22	0.87
I have a strong sense of confidence in the potential to proficiently use the chatbot as a means to enhance my general academic performance in the field of Linguistics.	30.36	39.55	16.99	13.10	3.27	0.78
I see a sense of guidance from an additional teacher while engaging	31.47	37.88	18.11	12.53	3.30	0.76

with Chatbots for the purpose of studying linguistics courses.						
Linguistics courses offered by the lecturers are easily comprehensible after a digital lecture session facilitated by Chatbots.	28.69	42.90	17.27	11.92	3.23	0.83

The data in table 2 summarises the results of the perceived ease of use of the chatbots in linguistics courses. The notion that chatbots may serve as supplemental educators was found to be resonant among 31.47% of respondents, as seen by a mean score of 3.30. This finding underscores the impression that chatbots have the potential to be effective supplementary tools in the educational context. In conclusion, a significant proportion of participants (28.69%) expressed strong agreement, with a mean rating of 3.23, regarding the enhanced comprehensibility of linguistics courses after the implementation of digital lecture sessions aided by chatbots. This finding highlights the beneficial influence of new technological tools on conventional classroom settings. The aggregate results underscore the significant beneficial impact of chatbots in reducing intricate linguistic ideas, facilitating user-friendly interactions, and improving overall learning experiences in the field of linguistics education.

B. Results on perceived Usefulness of Chatbots for Enhancing Academic Performance of Students in their Linguistics Courses

Beyond the perceived ease of usage of the technological system, TAM also recommends evaluation of the usefulness of the technological systems, in connection to the academic performance of the students in their Linguistics Courses. This is the basis for the second research question, and the findings are summarised in the descriptive statistics table below.

Table 3: Result of Perceived Usefulness

Questions	SA	A	D	SD	Mean	Std. Dev
My overall performance in linguistics lectures has improved since I started using the chatbot.	21.50%	59.50%	13.50%	5.50%	4.67	0.81
The chatbot enables me to improve the efficiency with which I understand intricate concepts and processes across Linguistics courses.	24.00%	56.00%	13.50%	6.50%	4.89	0.73
I feel more motivated to study linguistics courses due to the impacts of the chatbot.	19.50%	61.50%	13.50%	5.50%	5.12	0.67
The chatbot is an important resource that I have added to my repertoire for performing better in all my Linguistics courses.	26.00%	54.00%	12.50%	7.50%	5.24	0.91
I have it in mind to make use of the chatbot as part of my regular academic practice.	22.50%	58.50%	11.00%	8.00%	4.86	1.02
If my lecturers suggest that we utilize the chatbot, then I will be more inclined to do so.	20.50%	60.50%	11.00%	8.00%	4.78	1.05

The data shown in the table 3 provides insights into the viewpoints of students about the incorporation of chatbots in the field of linguistics teaching. It is worth mentioning that a considerable proportion of students, namely 21.50%, expressed a strong agreement, while 59.50% expressed agreement, about the improvement in their overall performance in linguistics courses because of the chatbot. The mean score of 4.67 further suggests a consensus among the students regarding the good influence of the chatbot. In relation to the assertion "The chatbot facilitates the enhancement of my comprehension of complex concepts, and processes in Linguistics courses," a

significant proportion of respondents, specifically 24.00% strongly agreed and 56.00% agreed, yielding a mean score of 4.89. This indicates a considerable consensus among participants regarding the chatbot's efficacy in improving understanding. In addition, it was found that 19.50% of participants strongly agreed and 61.50% agreed that the integration of the chatbot had a motivating effect on their engagement with the study of languages. These results yielded a mean score of 5.12, highlighting the significance of the chatbot's motivational impact. Furthermore, in relation to the assertion "The chatbot is a valuable tool that I have incorporated into my collection of resources to enhance my performance in all of my Linguistics courses," a substantial 26.00% of respondents expressed strong agreement, while 54.00% agreed, resulting in a mean score of 5.24. This data underscores the chatbot's pivotal role as an educational asset.

Additionally, a significant proportion of participants, as much as 22.50%, expressed strong agreement, while 58.50% expressed agreement, regarding their desire to integrate the chatbot into their normal academic practice. This finding is further supported by a mean score of 4.86, indicating a high inclination towards prolonged utilisation of the chatbot. In the end, a significant proportion of respondents, as much as 20.50% strongly agreed and 60.50% agreed, expressed their inclination towards using the chatbot if it was suggested by their professors. The average rating of 4.78 further highlights the substantial impact of instructor endorsement on user adoption. The collective results presented in this study emphasise the very favourable reception of chatbots in the field of linguistics education. These findings confirm the valuable contribution of chatbots in improving learning efficiency, fostering motivation, and boosting overall academic achievement among students.

4.2. Discussion of Findings

It is important to further explore the results as presented in the preceding sections. As such, the focus here is to discuss the key findings in the tables.

4.2.1. Discussion of the Ease of Using Chatbots in Enhancing Students' Academic performance in Linguistics Courses

The data shown in the table 2 provides valuable insights into students' perspectives on the use of chatbots in the field of linguistics education. Initially, a considerable proportion of students expressed a strong consensus on the positive impact of using the chatbot in their grasp of linguistics courses, hence emphasising the efficacy of this instrument in facilitating understanding. The aforementioned discovery is consistent with other research that highlights the significance of chatbots in augmenting students' educational experiences (Abbas et al., 2022; Essel et al., 2022). Furthermore, the participants said that they found the interface of the chatbot to be user-friendly, which in turn facilitated their study of the features related to phonology and phonetics. Previous studies have documented comparable findings in the realm of user experience and interface design within the context of educational technology (Diwanji et al., 2018; Okonkwo & Ade-Ibijola, 2021).

In addition, the research findings indicate that students perceived a low level of cognitive effort while engaging with the chatbot to understand basic concepts such as morphology and syntax. The aforementioned simplicity in comprehension reflects the efficacy of chatbots in elucidating intricate subjects, as supported by scholarly investigations on instructional aids utilising artificial intelligence (Fidan & Gencel, 2022; Mageira et al., 2022). Furthermore, the chatbot's capacity to provide succinct and customised instruction in areas such as pragmatics and stylistics was recognised. The customised assistance provided is consistent with study results that highlight the importance of customization and adaptation in educational tools powered by artificial intelligence (Chang et al., 2022; Kim, Cha & Kim, 2019).

The students further demonstrated a sense of confidence about the chatbot's capacity to improve their academic achievements in the field of linguistics. Previous research has shown a comparable level of trust in educational technologies that use artificial intelligence (IA), as evidenced by studies examining learners' perceptions and attitudes towards technology-enhanced learning (Chang, Kuo & Hwang, 2022; Haristian, 2019). The participants also reported seeing the chatbot as a supplementary source of advice, similar to an additional instructor, which enhanced their overall learning experience. This notion of chatbots as extra instructional tools is in accordance with studies showing the collaborative potential of human-robot interactions (Ji, Han & Ko, 2023; Lin & Mubarak, 2021). In the end, the participants reported a higher level of comprehension in linguistics courses

after the implementation of digital lecture sessions aided by chatbots. This conclusion correlates with research stressing the value of digital tools in augmenting conventional classroom experiences (Ebadi & Amini, 2022; Lee, Hwang & Chen, 2022). In general, the aforementioned results highlight the many advantages of incorporating chatbots into the field of linguistics education. This integration facilitates tailored, user-centric, and efficient learning opportunities for students.

4.2.1.1. Discussion of the Findings in Usefulness of Chatbot in Linguistics Courses

The data in table 3 presents a detailed summary of the participants' replies to various claims about their experiences with a chatbot in terms of its impact on their comprehension of linguistics courses. The participants' replies have been categorised into four distinct sections: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). Additionally, the Mean and Standard Deviation (Std. Dev) have been calculated for each statement. This discourse will explore the discoveries, substantiated by citations, that illuminate the ramifications of these reactions. The results presented in this study are consistent with previous research that has shown the beneficial effects of technology on academic achievement (Wu, 2019; Geng & Yu, 2023). The second statement, which states that "The chatbot allows me to enhance my comprehension of complex concepts and processes in Linguistics courses," has an average rating of 4.89. A significant proportion of respondents, namely 24.00%, expressed strong agreement, whilst a majority of 56.00% indicated agreement. The results of this study align with the notion that chatbots provide effective help in comprehending intricate language ideas, a viewpoint that is substantiated by existing research on artificial intelligence and digital technology in the field of education (e.g., Guo et al., 2023; Jeon, 2021; Lee et al., 2022). The substantial agreement percentages demonstrate the efficacy of chatbots in enhancing understanding. The third assertion, which states that the effects of the chatbot have increased motivation to study linguistics courses, has a mean score of 5.12. Of the participants, 19.50% strongly agree with this statement, while 61.50% agree. The aforementioned results are consistent with other studies that have examined the effects of technology-enhanced learning on motivation (Kohnke, 2022; Conjam, 2014). The use of chatbots has the potential to enhance student motivation and engagement, hence exerting a positive impact on their academic achievement. The substantial agreement percentages suggest that the chatbot is widely regarded as a stimulating instrument in the realm of linguistic instruction.

The mean score for the fourth statement, which states that "The chatbot is a valuable tool that I have incorporated into my collection of resources to enhance my performance in all of my Linguistics courses," is 5.24. A significant proportion of respondents, i.e., 26.00%, expressed strong agreement, whilst a majority of 54.00% indicated agreement. The scholarly literature emphasises the significance of chatbots as excellent educational tools for students (Chiu et al., 2023; Jeon, 2021; Mageira et al., 2022). The aforementioned percentages underscore the chatbot's function as a valuable resource in enhancing success in diverse language courses. The fifth statement, which states the intention to include the chatbot into normal academic practise, had an average rating of 4.86. Among the respondents, 22.50% strongly agreed with the statement, while 58.50% agreed. This discovery aligns with previous research indicating that the use of technology into conventional educational methods may result in improved educational achievements (Zhai & Wibowo, 2022; Zhang et al., 2022). The substantial agreement percentages suggest a strong inclination to integrate the chatbot into regular academic practises.

The concluding statement, "I will be more inclined to utilise the chatbot if my lecturers recommend it," has a mean score of 4.78, with 20.50% of respondents strongly agreeing and 60.50% agreeing. This discovery provides evidence in favour of the notion that the endorsement and support from faculty members regarding the use of chatbots might have a favourable impact on students' adoption and utilisation of such technology (Ait Baha et al., 2023; El Shazzy, 2021; Yin et al., 2021). The observed high agreement percentages indicate the significant influence that teachers may have in promoting the use of chatbots within the realm of linguistics education.

5. CONCLUSIONS

This in-depth research paper delves into the impact of incorporating chatbots into the realm of linguistics education, yielding a multitude of significant findings derived from an intricate examination of students' feedback. The results, as depicted in the tabular data, emphasise the

profound influence of chatbots on the academic experiences of students. Significantly, a considerable proportion of students have conveyed a favourable perception with regards to the impact of the chatbot on their academic achievements, efficiency in understanding the course material, and overall motivation in the field of linguistics. A notable proportion of students expressed a high level of agreement or agreement regarding the positive impact of the chatbot on their academic performance, underscoring its pivotal role in augmenting learning outcomes. The findings of the study provide additional evidence of students' acknowledgement of chatbots as valuable resources that are essential to their academic skill set. Moreover, a considerable number of participants expressed their intention to integrate these technological advancements into their study routines. The aforementioned findings collectively underscore the significant role that chatbots play in transforming the domain of linguistics education, thereby augmenting students' levels of engagement, comprehension, and motivation.

In summary, this research presents compelling empirical evidence that substantiates the efficacy of incorporating chatbots into the realm of linguistics education. The favourable outcomes observed among students, as indicated by their high levels of agreement and favourable mean scores, provide compelling evidence for the substantial influence of chatbots in augmenting educational experiences. The inclination of students to adopt chatbots and incorporate them into their learning practices, particularly when endorsed by their instructors, highlights the recognition and prospective enduring efficacy of these technologies within the realm of education. In light of the findings presented, it can be inferred that the utilisation of chatbots holds considerable potential in enhancing the academic achievements, understanding, and drive of students enrolled in linguistics courses. The integration of chatbots within the realm of educational technology signifies a significant advancement towards the cultivation of inventive and efficacious learning environments.

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