

FOREIGN LANGUAGES AND VIETNAMESE

UTILIZING AI CHATBOT TO ENHANCE SPEAKING SKILLS OF NON-ENGLISH MAJORED STUDENTS AT HANOI UNIVERSITY OF INDUSTRY

TRAN NGOC DUC* - NGO THU NGÀ**

ABSTRACT: The implementation of AI Chatbot into improving students' speaking skills has recently been regarded as one of the most potential teaching methods at the universities in general and at Hanoi University of Industry in particular. Hence, the study sheds light on discovering the students' attitudes towards the utilization of AI in studying English speaking skills as well as exploring various aspects of enhancement in students' speaking skills with AI intervention. These findings made a significant contribution to spreading the application of AI-driven tools in EFL learning and teaching context.

KEY WORDS: the implementation of AI Chatbot; speaking skills; enhancement; the most potential teaching methods; universities.

RECEIVED: September, 16th, 2024.

EDITED: November, 18th, 2024

1. Introduction

In the digital age, Information and Communication Technologies (ICTs) has been proving its proficiency, effectiveness and multifunctions in many fields, especially in education (Tinio, 2002). According to Tinio (2002), ICTs has its unique features, that leads to its specific actions and functions. ICTs gives the capacity of recording, storing and processing data and information. Teaching and learning English at Hanoi University of Industry has kept pace with this trend over the past years by the implementation of ICTs tool into teaching English in general and in teaching English speaking in particular. However, the number of teachers utilizing AI tool in boosting speaking skills among the students remains low. Likewise, speaking plays pivotal role in oral communication. Kim (2021) pointed out that speaking itself is an essential means of communication and a channel through which human interaction and the sharing of thoughts and feelings are conducted. Therefore, teaching speaking skills should be focused and implemented with AI-driven tool. Especially, in the rapid expansion of globalization, English has been approved its vital role in many fields ranging from economy, politics to medicine and education. Thus, mastering English language has been really necessary worldwide. Brown and Lee (2015) indicated that accuracy and fluency the speakers obtain during the conversation are crucial factors determining successful English speaking. Nevertheless, Vietnamese students encounter with difficulties in mastering effective English speaking skills due to the lacks of motivating classroom environment, insufficient proficiency and limited exposure to English (Dao, 2017; Quyen et al., 2018; Thao & Nguyet, 2019). Additionally, Vietnamese teachers tends to use their mother tongue language in EFL classroom context, which limits the opportunities for their students to practise speaking English (Wang, 2014).

Meanwhile, AI voice chatbot is an effective tool facilitating EFL learners to enhance their speaking skills (El Shazly, 2021). Thanks to its flexibility, interactivity, and learner-centeredness, the learners achieve plentiful vocabulary, receive timely feedback and correction in terms of grammar and syntax, which support speaking English fluently and accurately. Kalpan (2016) stated that thanks to speech recognition and natural language processing algorithms, AI Voice chatbot can talk and have discussions as quickly and explicitly as human. AI voice chatbot is a useful technological tool that facilitates improving speaking skills for EFL learners in Vietnamese universities, especially at HUI. The research aims at enhancing English speaking skills among the students, spreading the

*Dr; Hanoi University of Industry; Email: hauitrannngocduc@gmail.com

**Hanoi University of Industry; Email: nthunga244@gmail.com

integration of AI voice chatbot into teaching English language among teaching staff at HAUI. Accordingly, the study's result and findings contribute to diversifying the methodology of teaching English speaking in general and at HAUI in particular. Therefore, two major research questions have been addressed in this study:

- 1) What are students' attitudes towards the use of AI Voice Chatbot in learning speaking skills?
- 2) To what extent does the use of AI Voice Chatbot enhance non-English majored students' speaking skills?

Based on the research objectives, qualitative method is employed to collect data and draw conclusion. The questionnaires are used to find out the results which are collected and analysed to give conclusion, discussion and implications.

2. Literature review

2.1. Speaking skills

2.1.1. The definition of speaking

Brown and Lee (2015) indicated that speaking skills is one's ability to communicate comprehensively with listeners in various real-life situations to show the thoughts, ideas and the acquisition of language. According to Wang (2014), Speaking competence is bound to two major criteria, namely fluency and accuracy. A smooth and coherent speech requires a learner for possessing abundant vocabulary, mastering a wide range of grammatical structures and having good pronunciation.

Speaking is a productive skill which is difficult to be taught and has been disregarded for a long time in EFL context (Guebba, 2021). Nonetheless, thanks to new communicative language teaching approach, speaking has been focused on "improving language learners' fluency and accuracy, respectively" (Guebba, 2021). Guebba (2021) denoted that speaking is the physical recognition of ideas, concepts and assumptions and it transforms abstract thoughts into speech sounds and meaningful sentences. It can be concluded that speaking is the process of interaction among the interlocutors in real-life situation. According to Guebba, speaking is classified into types in terms of use and usage. Speaking in terms of usage is productive process in which speech is used in certain frequency and manner with the regards to lexical and grammatical structures and it requires no interaction. Meanwhile, speaking in terms of use is not only productive but also receptive process in which interlocutors receive, decrypt and create utterances in accordance with specific purposes.

2.1.2. The aspects of speaking skills

Syakur (1987) stated that speaking skills consist of five main aspects, namely comprehension, vocabulary, grammar, pronunciation, and fluency. In the aspect of comprehension, speaking skills involve a topic to initiate and to respond to. While the students practise speaking, the message should be conveyed. Meanwhile, sufficient vocabulary is a decisive factor that helps people express their ideas and communicate with others. According to McCarten (2007), "without grammar very little can be conveyed; without vocabulary nothing can be conveyed" (p.20). In terms of grammar, it is essential that students build up sentences with correct grammar. Accurate grammatical structure helps students deliver the speech successfully. Regarding to pronunciation, a breakdown in communication may result from mispronunciation in conversations. Last but not least, the fluency refers to smooth and fluent speaking ability without unnatural pauses and long hesitations. Speakers are unnecessary to get much prompting and support from examiners and take little time to recall the flow of ideas for continuous speaking.

2.1.3. The role of speaking skills in language acquisition

According to Guebba (2021) speaking expresses one's language proficiency and show how effectively learners combine using all the facets of language consisting of vocabulary, sentence, pronunciation, intonation and morphology. Likewise, speaking facilitates teachers to explore their students' strength and drawbacks in language acquisition in order to give feedback and timely support. Moreover, students have more opportunities to drill speaking practices in real-life situation (Guebba,

2021). Speaking is a pivotal component of language learning (Guebba, 2021). According to Guebba (2021), the more students get engaged in speaking, having their grammar, vocabulary, pronunciation activated, the more they gain an effective use of language components. Speaking is the most essential and the hardest skills in acquiring the language (Hanim Rahmat, et al., 2020). Hanim Rahmat et al. (2020) pinpointed that speaking demands for the inborn knowledge of grammar which must be used in daily conversation. He also indicated that the learners have to get good pronunciation and have capability of producing cohesive and smooth utterance in order to be an effective language learner. Hanim Rahmat, et al. (2020) addressed that speaking plays an important role in every aspect of life. Moreover, speaking facilitates users to express the thoughts and show the ideas smoothly (Hanim Rahmat, et al., 2020). It can be clearly seen that speaking functions importantly in language acquisition.

2.1.4. Learning and teaching speaking skills

Speaking is a vital component in language acquisition process, however, it used to be neglected for many years with traditional teaching methodology (Guebba, 2021). Thanks to modern ELT pedagogy and methods, it has had “a new shape” (Guebba, 2021). The new trend of teaching speaking sheds light on the fluency and accuracy throughout a wide range of speaking activities, namely roleplay, conversations, presentation, storytelling, and so on.

Nevertheless, many issues have been addressed during teaching and learning English as a second language. There is little environment for learners to practise speaking in classroom. Dao (2017) indicated that Vietnamese students are supplied with little exposure to English, which demotivated them from practising speaking. The lack of vocabulary and limited opportunity to speak English are two main barriers for Vietnamese students to speak English successfully (Quyen et al., 2018). Wang (2014) denoted that teachers in Vietnamese classroom tends to use their mother tongue language to teach, which decreases the chances for learners to speak English. Guebba (2021) emphasized that teachers take an important part in English learning process and they should be both the participant of the conversations among their students and the feedback provider to scaffold their students timely and effectively. He also indicated that teachers should give suggestions to their students throughout speaking activities and offer timely facilitation whenever their students find it difficult to express the ideas.

The role of teachers in English learning process is undoubted. With the emergence of AI tools namely Chat GPT, AI voice chatbot..., teacher workload has been decreased, which help them to shed light on higher-level activities, such as roleplay, storytelling, conversations and discussions...to improve the teaching quality (Mai et al., 2024). With the appearance of AI tools, teaching and learning speaking skills has been evolutionized into simpler and effective methodology. This research will adapt to the previous studies by prestigious authors with implementing AI in teaching speaking English skills and pinpoint AI Chatbot effects on enhancing students' oral communication skills and spreading AI application in language teaching among the teaching staff at HAUI.

2.1.5. Assessing speaking skills

Speaking skills is the most important but hardest to master in EFL course (Knight, 1992) but there remains so many difficulties in evaluating oral skills in terms of assessment criteria. Knight (1992) emphasized the role of appropriate and reliable assessment in which students and teachers recognize the positive washback after the oral test. It means that they realize what to be done and what progress they made. Defining time, facilities and the personnel for oral testing is one difficulty. Another difficulty is what criteria should be used in assessment process. Hence, this research adapts the assessment model mentioned by Knight (1992). There are four criteria: viewing and reflection, discussion, list of assessment criteria, viewing and comment. Discussion step aims to let the teachers realize what criteria influence on their judgements and know other viewpoint of judgements (Knight, 1992).

2.2. Technology in teaching and learning speaking skills

AI implementation into teaching is an obvious tendency of modern education in the digital era. First and foremost, AI has multi-functions including speech recognition, checking grammar which provides timely feedback and correction. Moreover, thanks to Augmented Reality and Virtual Reality, AI offers simulated environment for learners to practise language speaking in the interactive context. Additionally, AI virtual chatbot assistant operates as a companion and interacts with users in text or audio form.

Alshumaimeri (2023) stated that speech recognition technology and language processing technology are the prominent embodiment of AI tools effects and they are revolutionizing language learning and enhancing learners' communication and speaking skills. AI tools can create simulated environment for learners to study English and interact with them as companion, which improves students' oral communication skills (Alshumaimeri, 2023). He added that teachers and students can create a group of online learners and a smart robot can provide guidance and support by offering phrase patterns and colloquial expressions for learners to practise speaking online.

Hanoi University of Industry has kept pace with the tendency to utilize AI technology in English learning and teaching. Because AI application in learning and teaching has been approved throughout many studies by well-known authors. Alshumaimeri (2023) indicated that educators can consider AI application as a useful auxiliary tool to save time and energy spent on grammar correction, or pronunciation practice and to support enhancing students' oral communication and speaking skills. AI technology should be exploited as an effective tool to gain benefits and compensates for the disadvantages of traditional classroom.

2.3. AI Voice Chatbot in teaching and learning English speaking skills

2.3.1. AI Voice Chatbot and foreign language teaching and learning

Each chatbot has its own function depending its design by developers. Ahmed et al. (2018) showed that AI Voice chatbot can understand user's question and give the answer at any time and help a great number of users simultaneously. Kim et al. (2019) introduced various AI Voice chatbots ranging from Eliza, Alice to Andy English bot and replica, to name but a few. Tam Duong (2024) indicated that an AI Voice chatbot can understand complicated user input, be able to remind user's name, capable of performing multilanguage, facilitate voice input and output and recall the history of dialogue. In all mentioned above AI Voice chatbots, Andy English bot seems to be prevalent because it can support English learners by making up the follow-up questions, providing an enormous amount of vocabulary and a plentiful of grammar for learners to keep the flow of communication when speaking.

Adamoupoulou and Moussiades (2020) indicated three major characteristics of an AI Voice chatbot consisting of the Natural Language Processing (NLP), Natural Language Understanding (NLU), and the Natural Language Generation (NLG). Thanks to the operation of the NLP component, AI voice chatbot sorts out the request by users, infer the users' intention, after that, give the responses. The NLU component allows AI Voice chatbot to check spelling, interpret, and understand the meaning of the request. Lastly, the NLG generates appropriate responses.

2.3.2. Using AI Voice Chatbot in teaching and learning English speaking skills

AI Voice Chatbot has the characteristics: interaction, productivity, repeatability and authenticity (Tam, 2024). AI Voice Chatbot can recognize speech, which helps communicate meaning with the learners (Kim et al., 2017). AI Voice Chatbot offers virtual interaction environment and personalizes learning experiences, which supports improving speaking skills. AI Voice Chatbot creates natural and human-like conversations thanks to the NLP (Natural Language Processing) and talks to the learners as a companion, which helps learners to upgrade speaking skills. More importantly, AI Voice Chatbot can make the follow-up questions when interacting with the learners, which boosts inter-understanding between the learners and the smart bot during the conversation. AI Voice chatbot

checks grammar and sentence structure and gives timely feedback and correction, which help improve the learners' progress in speaking skills.

2.3.3. *Teaching and learning English speaking skills at HAUI*

Over the past few years, Hanoi University of Industry (HAUI) has kept pace with the tendency of education reforms in the context of international integration. HAUI sheds light on the development of nurturing the teaching staff to improve their academic standards and professional competence in parallel with the implementation of Information and Communication Technologies (ICTs) into teaching and learning English. Many international conferences have been held and hosted by HAUI to boost the application of high technology into learning and teaching English, such as Applying Flipped Classrooms or Using AI in the English Classrooms, to name but a few. AI has recently emerged as an effective tool to enhance teaching and learning English in general and English speaking in particular. In the digital era, thanks to AI tool facilitation along with new teaching approach and methodology, teaching and learning English speaking is remarkably improved. Students' speaking proficiency is upgraded throughout the final exams and English Speak-up competitions at HAUI. Nonetheless, AI utilization in teaching and learning English speaking among the lecturers at HAUI remains limited for many reasons. Firstly, they encounter difficulty in operating and using AI while teaching their students. Secondly, the teachers are consistent with the traditional pedagogy, which demotivates them to use AI in teaching English speaking. Thirdly, the personal security accounts for the limitation of using AI in teaching and learning English speaking. There are many previous studies about the effectiveness of AI application in teaching and learning English. Nevertheless, there is a scarcity of studies examining the utilization of AI Voice Chatbot to enhance speaking skills of non-English majored students at a university in Hanoi. Therefore, this study was conducted to fill this existing research gap.

3. Research methodology

This study implemented the methodology of an action research which aimed at identifying problematic issues in current teaching situation and using AI Chatbot to intervene with the practice process of speaking skills among students in order to obtain improvements in their speaking competence. These positive changes were based on solid information that were collected, not on the assumptions by teacher. In order to obtain the objective of the research questions, this study employed qualitative research method. The questionnaires were used to find out how students' speaking skills were enhanced. The questionnaires were also used to explore students' attitude towards the use of AI Voice Chatbot in learning speaking skills. The question 13 was used to answer the research question 1: "What are students' attitudes towards the use of AI Voice Chatbot in learning speaking skills?". The questions 6, 7, 8, 9, 10, 11, 12 were used to answer the research question 2: "To what extent does the use of AI Voice Chatbot enhance non-English majored students' speaking skills?". The data gathering technique consisted of two forms: pretest and posttest. 30 students were divided into two groups: experimental group and control group. They were at different levels of speaking and 15 out of 30 students were selected at random into experimental group. Both groups were given pretest to find out the initial scores and their speaking competence. Then the experimental group received AI intervention during 6 weeks of learning speaking skills whereas the control group studied speaking skills in traditional way. The support from the teacher came to both groups during the process of speaking practice. Eventually, the posttest was given to both groups to identify the effects of AI Voice Chatbot on students' speaking skills.

The data analysis collected from the questionnaires was used to obtain information about students' attitudes towards the use of AI in learning speaking skills and to seek out what extents their speaking skills were enhanced. The results of the pretest and post test were used to confirm the effectiveness of AI utilization in studying speaking skills and conclusion was withdrawn thanks to these results.

The main participants of the research are 30 non-English majored students who are pursuing a major in Accounting and Auditing and Business administration at HaUI.

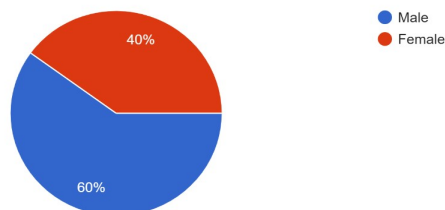
This research employed three data collecting instruments: a pre-test, a post-test, and the survey questionnaires. The structure of pretest and posttest for speaking were designed adapting A1 level assessment scales which are used at HAUI for speaking assessment.

4. Finding and discussion

The research was conducted on 30 students who are studying Accounting and Auditing and Business Administration at HAUI.

1. Are you male or female?

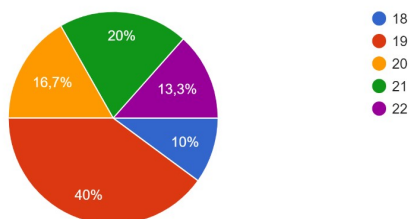
30 câu trả lời



Firstly, the subjects of the study include 30 non-English majors in which 60% of them are male and the female accounts for 40%. The result shows that the male outnumbers the female.

2. What is your age?

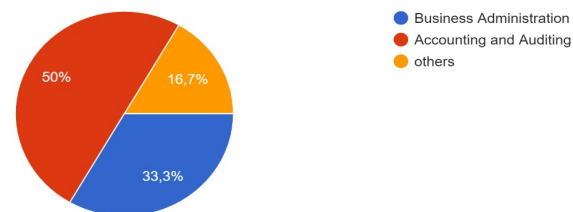
30 câu trả lời



Secondly, most of them are at the age of 19 to 20, 21 which represents 40%, 16,7%, 20% of the total numbers of students in the class respectively.

3. What is your major?

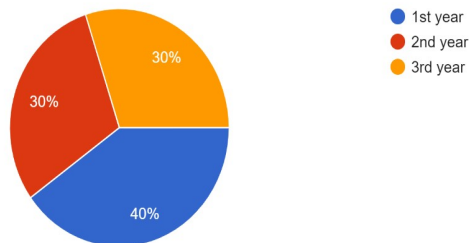
30 câu trả lời



Regarding their majors, 50% of them are learning Accounting and Auditing, whereas those studying Business administration and others contribute 33,3%, 16,7% respectively.

4. What about the year of study?

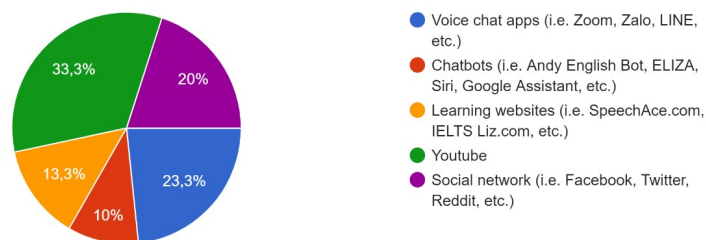
30 câu trả lời



Additionally, they are mixed in terms of the years of study, which shows different language proficiency levels.

5. What technology have you ever used for learning English speaking? You can select more than one option listed in this section.

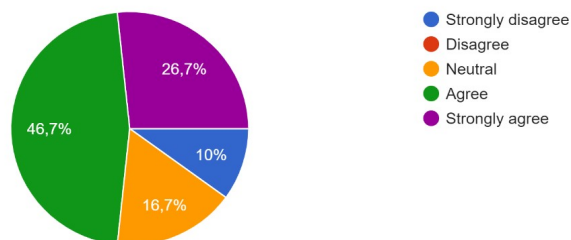
30 câu trả lời



Besides, from the results shown on the above piechart, over half of the students has used technological tool supporting their study. 33,3% of the total used youtube and those who utilizing social network such as Facebook or Twitter represent 20%. Voice chat apps seem to be one of their most common tools for studying, which account for 23,3%. The students using learning websites and Chatbots are 13,3% and 10%. Only 3 out of 30 students (parallel to 10%) used to experience chatbots in their studying, which show the fact that AI chatbots seem to be new but potential technological tool for them to exploit in the future.

6. After using AI Voice Chatbot for practicing speaking, do you feel more confident and get less pressure while speaking English with AI assistant?

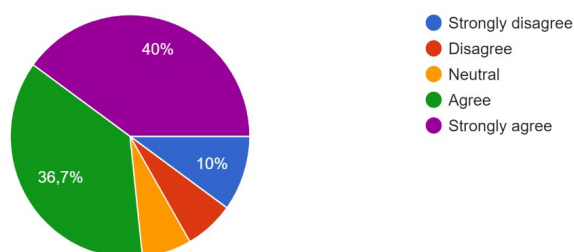
30 câu trả lời



Moreover, based on the above results, it is clearly seen that more than three quarters of the total number of students agreed that their confidence increased while pressure reduced when they practise speaking with AI Voice Chatbot. 46,7% of students agreed and those who strongly agreed account for 26,7%. Only 10%(3 out of 30 people) who strongly disagreed might not have the chance to contact with and use AI Voice chatbot. This is the reason why they did not discover the advantages that AI Voice Chatbot can take. However, those who disagreed remains a few, meanwhile those who agreed occupies 73,4% totally. Thanks to Natural Language Processing, AI Voice chatbot can create human-like conversations and communicate with the learners as a companion. Hence, the students feel more confident when talking to the smart bot, because they dismiss the phobia of losing face and have no pressure in comparison with speaking with the teacher.

7. After practicing with the AI voice chatbot, do you think you could speak English without making too many pauses and hesitations?

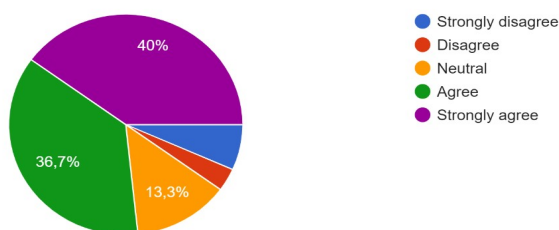
30 câu trả lời



What's more? According to the piechart, the percentage of people who agree and strongly agree with the fact that AI Voice chatbot helps them speak English with fewer unnatural pauses and hesitations occupies 76,7% (over three quarters in parallel compared to the rest opinions). The rate of those who strongly disagree remains very little. Most of the students reported that AI Voice chatbot facilitated them recall a great number of vocabulary and a wide range of sentence structures and supplied them with main ideas of the related topic during practising speaking, which helps maintain the flow of communication smoothly.

8. After practicing with the AI voice chatbot, do you think you could speak English with accuracy and fluency ?

30 câu trả lời

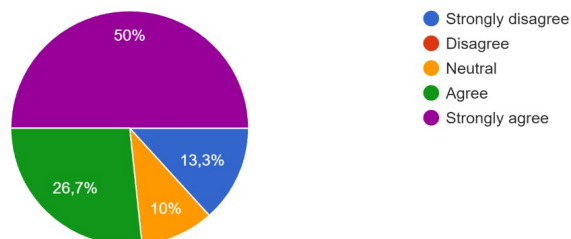


In terms of accuracy and fluency thanks to AI utilization, the number of people who agreed and strongly agreed contributes 36,7% and 40% respectively. Compared to this, the number of people who gave neutral standpoint only accounts for 13,3%. Meanwhile, those who strongly disagreed stays very little. Based on the above results shown in the piechart, AI voice chatbot helps increase

fluency and accuracy because it can maintain the smooth communication and give timely grammatical correction and feedback.

9. Do you think you could speak English with better pronunciation by using AI voice chatbot?

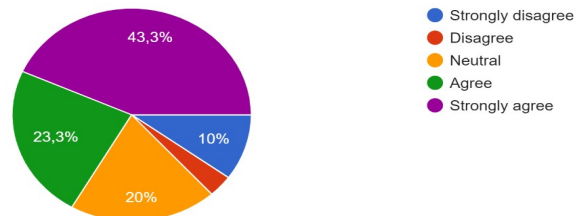
30 câu trả lời



In accordance with the survey results, the rate of people who are strongly in favour of using AI voice chatbot to reinforce pronunciation still remains high, occupying 76,7%. Meanwhile, the percentage of people who had neutral viewpoint or disagreed only represents 10%, 13,3% respectively (totally 23,3% which is far fewer than the number of 76,7%). Most of AI assistants communicate with the users with native accents, can create virtual conversations and talk to the users as a companion, which help improve their pronunciation remarkably.

10. After practicing with the AI voice chatbot, do you think you could use appropriate sentence structures when I spoke English?

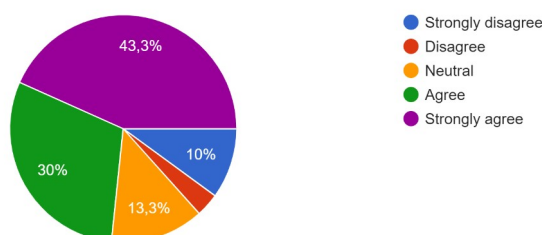
30 câu trả lời



From the above piechart, a great deal of students who agreed and strongly agreed the use of AI voice chatbot to raise a variety of sentence structures account for 23,3%, 43,3% respectively, which is very high rate. Thanks to the Natural Language Understanding, AI Voice chatbot can recognize speech, provide the users with a plentiful of grammatical structures, make up the follow-up questions to increase inter-understanding between the learners and the AI assistant. All these aforementioned factors help the students select and use appropriate sentence structures.

11. After practicing with the AI voice chatbot, do you think you could use appropriate words and vocabulary when speaking English?

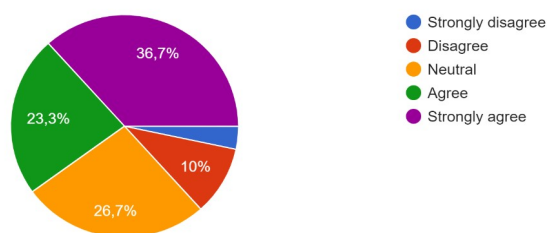
30 câu trả lời



From the above piechart, it can be clearly seen that the percentage of people agreed (73,3% in total) outweighed that of people disagreed (23,3% totally). This figure reflects the fact that AI Voice chatbot possesses an enormous lexical source and can provide a great number of users simultaneously at the same time during their speaking practice.

12. Do you find it easier to recall main ideas for topic speaking with AI Voice chatbot?

30 câu trả lời

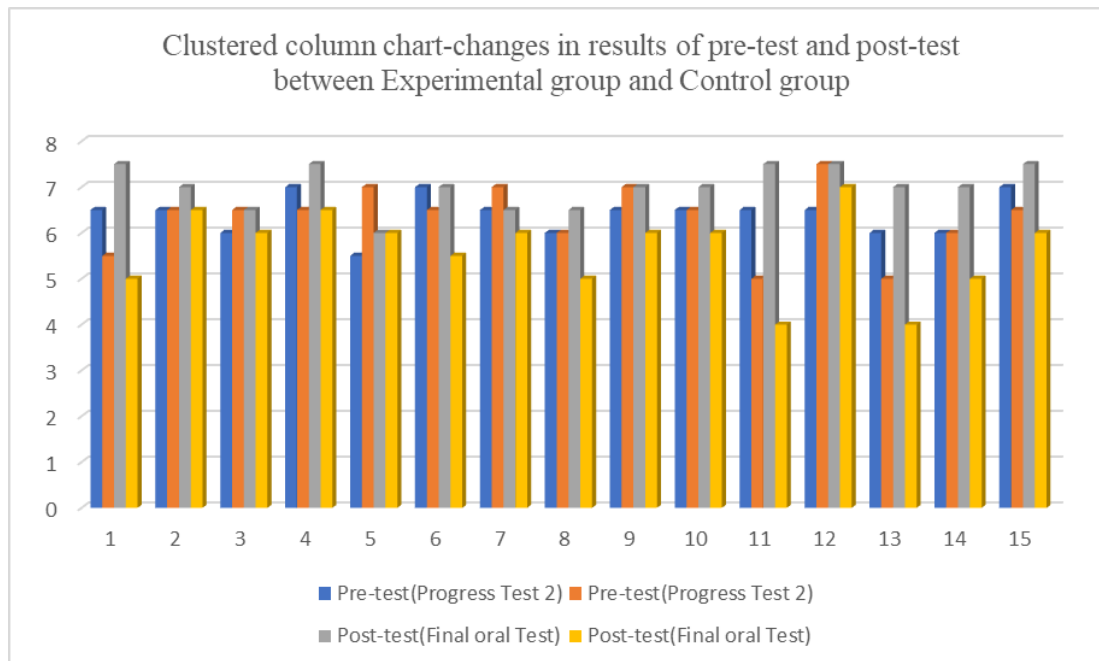


It is likely that the rate of people in favour of using AI voice chatbot to recall ideas for topic speaking (60%) outnumbers that of people opposing (36,7%). The neutral ideas remains 26,7%, whereas no one strongly disagreed. AI voice chatbot can infer the users'intention, interpret the users'requests and give appropriate responses, which helps generate main ideas for topic speaking.

This is an open-ended questions designed for exploring students'attitudes towards the use of AI Voice chatbot in improving their speaking skills. Basing on students'responses, it is clearly shown that they have positive attitudes towards AI voice chatbot implementation. Most of them claimed that AI Voice chatbot helps them expand their vocabulary, improve their pronunciation, extended grammatical structure ranges and increase confidence and fluency. They also reported that AI Voice chatbot is a wonderful tool for learning speaking skills and useful for improving comprehension while practising speaking. Nevertheless, they indicated that fluency increases but accuracy seems to decrease a little bit. The limited linguistic competence and the way they exploited AI Voice chatbot account for this unreasonable situation. Another reason for this lies on the limited time that AI Voice chatbot were implemented. The duration time of only six weeks might not be enough for students to upgrade all the aspects of speaking skills at the same time.

Apart from the questionnaires, the data collection instruments of this study are the pretest and the posttest. The pretest is adapted from Progress test 2. Two groups were given the pretest to identify their initial language proficiency. Then, both groups experienced the posttest after AI Voice chatbot

intervention on experimental group. The results were collected and analyzed to compare between two groups.



Looking at the clustered column chart above, the vertical axis displays score levels from mark 1 to mark 8, likewise, the quantity of testees are shown on the horizontal axis (15 testees for each group). The blue columns are the pretest results of experimental group while the grey columns are the posttest results of experimental group. Meanwhile, the orange columns are the pretest results of the control group and the yellow columns are the posttest results of the control group. It can be seen that most of the grey columns are higher than the blue ones, which reveals that experimental group get higher marks for the posttest after AI voice chatbot were utilized during 6 weeks of their learning speaking skills. Mark values are shifted from 6,5 to 7,5; 6 to 7; 5,5 to 6..., which gradually rises from 0,5 to 1 score plus. Only the height of the blue and grey columns at the position number 6 and 7 on the vertical axis remains the same(the pretest and the post test stay the same at 6,5 score). It means that the testees obtain the same marks after AI intervention, which might be due to their limited linguistic competence and the inaccurate way they applied AI voice chatbot.

Whereas, the results for pretest and posttest of control group are not changed, and even lower. This chart shows that most of the yellow columns are lower than the orange ones. It can be deduced that the marks of the testees were decreased remarkably without AI voice chatbot facilitation during their practising speaking skills. Mark values go down from score 5,5 to 5; 7 to 6; 5 to 4; 6,5 to 6... The rate of score decrease is at slight level. Compared with the orange columns (the pretest of the control group), most of the yellow columns (the posttest of the control group), except for yellow columns No. 2 and 4, are lower than the orange ones. It can be understood that speaking skills performed by the control group slightly fell without AI voice chatbot application. As a result, the control group's linguistic proficiency are approved to be worse than that of the experimental group.

4.4. Discussion

Basing on these above figures and facts, AI Voice chatbot has had positive influence on improving students' speaking skills in terms of pronunciation, participation, fluency and accuracy. Thanks to its Natural Language Processing (NLP) function, AI Voice Chatbot can classify voice input from different users in multi-languages, create virtual speaking environment for users to talk to AI virtual assistant of which accent is extremely human-like and native. And this helps reinforce students' pronunciation. Regarding to participation, AI Voice chatbot can recognize speech, decode users' requests and interpret their intentions thanks to its Natural Language Understanding (NLU) feature, which helps increase interaction between AI smart bot and the users throughout its ability to make follow-up questions that boost their mutual understanding. By this way, AI Voice chatbot raises students' engagement in virtual conversations, which helps increase students' self-confidence. Apart from that, students are likely to have no pressure when talking to AI virtual assistant because they can dismiss the phobia of losing face if there is something wrong during their speaking practice. Moreover, AI Voice chatbot can supply the users with abundant vocabulary and a wide range of grammatical structures, give timely feedback and corrections, and generate appropriate responses along with its ability to personalize learning (thanks to its Natural Language Generating (NLG) function), which enhances accuracy and fluency while students practise speaking. These are benefits that the use of AI Voice chatbot in enhancing students' speaking skills brings.

Nevertheless, there remains *limitations* in this study related to samples and limited time for conducting AI voice chatbot in classroom-based speaking activities. The fact that the participants have different level of language proficiency is a challenge for applying AI voice chatbot in their speaking learning. Beside, the way they use AI voice chatbot as a supported tool for their speaking studying is still inappropriate at times, which affects the effectiveness of this AI-driven tool. Hence, the percentage of increasing the posttest scores compared to pretest results remains a little bit low, ranging from 0.5 to 1 point. In addition, the limited linguistic competence among the experimental group also accounts for the limitation of the study. Eventually, the experimental group experienced only six weeks under AI voice chatbot intervention, which is small obstacle for better results. In general, all these aforementioned factors lead to the fact that fluency increase while accuracy seem to be a little bit low. These unavoidable limitations should be taken into consideration for the next study in the future.

As a consequence, some *implications* should be suggested for AI voice chatbot application in the classroom-based context. Firstly, teachers should set specific objectives for students while exploiting AI Voice chatbot as a supported tool in certain speaking activities in the classroom. For examples, they should avoid mispronunciation when talking to AI smart bot or else AI virtual assistant can not understand their requests to generate correct responses. Secondly, teacher should instruct students to install free account of AI Voice chatbot, guide them clearly how to operate AI Voice chatbot on their smartphones and determine when students should use AI voice chatbot in learning speaking. Specifically, when students encounter the complicated topic and have no ideas for their speaking, they should give their requests to AI virtual assistant for suggestions. Before presenting their speech in front of the class, they should speak to AI smart bot at first to receive timely feedback and corrections in terms of vocabulary, grammar and pronunciation. Thirdly, teacher should encourage students to make use of the user interface when speaking to AI smart bot because it both communicates as a native speaker and provides messages in text form with visual aids. Finally, it is suggested that the influence of AI Voice chatbot on other skills such as writing, reading and listening should be regarded in the future research in the related field.

5. Conclusion

In the digital era, education reforms and teaching method modernization are essential all over the world. Viet Nam is out of exception, so most of the universities across the country have tendency to

integrate AI -driven tools into teaching and learning foreign languages in general and English in particular. Although AI effects on education remains controversial among the scholars , AI Voice chatbot has been approved to be useful tool for supporting to improve students' speaking skills. Many scholars showed their concerns about AI authorship and ownership, forged citations and bias information, the decrease in critical thinking and human creativity. However, it can not be denied that AI technology has been booming in almost every fields thanks to its multi-functions and benefits, especially in education. Educators should assess to AI technology with openness and curiosity. We should not compete with AI, but have to cooperate with AI to explore our potential capacity. Artificial Intelligence and Human Intelligence should be collaborated with each other to create enormous benefits for human life. Instead of regarding AI introduction as the death of education, educator should be the “conductor” who regulates the “concert” of AI advantages to shape our education in the future.

REFERENCES

1. Adamopoulou, E. & Moussiades, L. (2020), Chatbot: History, technology, and applications. *Machine Learning with Applications*, 2, 100006.
2. Adamopoulou, E. & Moussiades, L. (2020), An overview of chatbot technology.
3. Adamopoulou, E. & Moussiades, L. (2020), Machine Learning with applications.
4. Aburazeq, I.M. (2020), The impact of flipped classroom on Developing Arabic speaking skills.
5. Alshumaimeri, Y. U. (2023), The Extent of AI Applications in EFL Learning and Teaching.
6. Burns, A. (2009), *Doing action research in English language teaching: A guide for Practitioners*. Routledge.
7. Dao, H. (2017), Identify factors that negatively influence: Non-English majors students' speaking skills. *Higher Education Research*, 2(2), 35-43.
8. El Shazly, R. (2021), Effects of artificial intelligence on English speaking anxiety and speaking performance: A case study. *Expert Systems*, 38(3), e12667.
9. Edmett, A., Ichaporia, N., Crompton, H., & Crichton, R. (2023), *Artificial intelligence and English language teaching: Preparing for the future*. British Council.
10. Guebba, B. (2021), The Nature of Speaking in the Classroom: An Overview. *British Journal of Philosophy, Sociology and History*, 1(1), 37-41.
11. Knight, B. (1992), Assessing Speaking Skills: a Workshop for Teacher Development. *ELT journal* 46
12. Kaplan, J. (2016), *Artificial intelligence what everyone needs to know*. Oxford University Press.
13. Lantolf, J. P., & Thorne, S. L. (2006), *Sociocultural Theory and the Genesis of Second Language Development*. Oxford University Press.
14. McArthur, D., Lewis, M. & Bishary, M. (2005), The Roles of Artificial Intelligence in Education: Current Progress and Future Prospects. *Journal of Educational Technology*, 1(4), 42-80.
15. McCarton, J. (2007), *Teaching Vocabulary Lessons from the Corpus, Lessons for the Classroom*. Cambridge University Press.
16. Mishra, P., & Koehler, M. J. (2006), Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record*, 108(6), 1017-1054. DOI: 10.1111/j.1467-9620.2006.00684.x.
17. Quyen, V. P., Nga, P. T. M., & Nguyen, H. T. (2018), Challenges to speaking skills encountered by English majored students: A Story of one Vietnamese university in the Mekong Delta. *Can Tho University Journal of Science*, 54(5), 38-44.

18. Rahmat, H. N., Shahabani, S. N. & Ibrahim, W. I. (2020), Function of speaking in English Language and speaking anxiety.
19. Syakur, A. (1987), *Language Testing and Evaluation*. Sebeles Maret University Press.
1. 20. Spiezia, V. (2010), "Does Computer Use Increase Educational Achievements? Student - level Evidence from PISA", OECD Journal: Economic Studies, vol. 2010/1, https://doi.org/10.1787/eco_studies-2010-5km33scwlvkf.
20. Tinio, V. L. (2002), *ICT in Education*. Manila: Roberto R. Romulo.
21. Tam, D., & Suppasetsee, S. (2024), The effects of an Artificial Intelligence Voice Chatbot on Improving Vietnamese Undergraduate Students' English Speaking Skills. *International Journal of Learning, Teaching and Educational Research*.
22. Thao, T. Q., & Nguyet, D. T. N. (2019), Four aspects of English speaking difficulties encountered by tertiary English majored students. *Ho Chi Minh City Open University Journal of Science*, 9(2), 53-64.
23. Widowson, H. G., (1978), *Teaching Language as Communication*. Oxford University Press.
24. Wang, Z. (2014), Developing accuracy and fluency in spoken English of Chinese EFL learners. *English Language Teaching*, 7(2), 110-118.

**Sử dụng Chatbot ứng dụng công nghệ Trí tuệ Nhân tạo để nâng cao kỹ năng nói
cho sinh viên không chuyên tiếng Anh tại Trường Đại học Công nghiệp Hà Nội**

Tóm tắt: Việc sử dụng Chatbot ứng dụng công nghệ Trí tuệ Nhân tạo vào việc nâng cao kỹ năng nói cho sinh viên gần đây được coi là một trong những phương pháp giảng dạy tiềm năng nhất tại các trường Đại học nói chung và trường Đại học Công nghiệp Hà Nội nói riêng. Vì vậy, nghiên cứu tập trung vào tìm hiểu thái độ của sinh viên về việc sử dụng AI trong việc học nói cũng như khám phá ra những mặt được cải thiện trong kỹ năng nói của sinh viên nhờ có sự trợ giúp của AI. Những phát hiện này đã đóng góp cho việc lan tỏa sử dụng những công cụ có ứng dụng Trí tuệ Nhân tạo vào trong môi trường học tập và giảng dạy tiếng Anh như một ngoại ngữ.

Từ khóa: Việc ứng dụng AI Chatbot; kỹ năng nói; sự nâng cao; những phương pháp giảng dạy tiềm năng nhất; các trường Đại học.