ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

The Impact of AI Speaking Companion Tools on Speaking Anxiety Among Non-English Major College Students

Wantong Li *

School of International Studies, Northeast Normal University, Changchun, China

* Corresponding author: liwantong422@nenu.edu.cn

Abstract

Amid the growing prevalence of English worldwide, the rapid advancement of artificial intelligence (AI) has significantly transformed the field of English learning. However, the wide variety of AI tools, coupled with the absence of reasonable, unified, and standardized criteria, has led to considerable anxiety among college students in their English learning process under such disorganized influence of AI. Against this backdrop, this study employs the "Xingkong Waiyu" AI speaking practice tool in an experiment. A total of 36 eligible participants were recruited and selected to take part in a nine-day experiment, during which they used the "free chat" mode of the AI tool for at least 20 minutes of speaking practice each day. Data were analyzed using SPSS software through data preprocessing, normality tests, paired-sample t-tests, and correlation analysis. The results indicate a significant difference in participants' speaking anxiety scores before and after the intervention ($t = 15.447$, $P < 0.001$), with anxiety levels markedly decreasing. This tool aligns with the core tenets of Krashen's Affective Filter Hypothesis, effectively alleviating fear of negative evaluation and communication apprehension by lowering the affective filter and avoiding interpersonal evaluation pressure. It should be noted that the participants in this study were limited to a specific CET-4 score range, with a moderate sample size; thus, the generalizability of the findings requires further validation with larger and more diverse samples. This research confirms the practical effectiveness of the "Xingkong Waiyu" AI speaking practice tool in reducing English speaking anxiety, offering practical insights for integrating AI technology into college English speaking instruction, supporting teaching optimization and students' speaking proficiency improvement, and providing a foundation for future practical exploration.

Keywords

English speaking anxiety; AI speaking practice tool; second language acquisition; educational strategies.

1. Introduction

In the context of globalization, English, as an international common language, has seen its learning value and importance become increasingly prominent. In recent years, with the rapid iteration of AI technology, the convenience of its content generation has gradually transformed the English learning patterns of university students. Many students have become overly reliant on AI-generated content, lacking deep thought and active inquiry, thus falling into superficial learning patterns and developing anxiety—anxiety that is particularly pronounced in speaking situations. This speaking anxiety not only affects students' learning motivation but also, to some extent, hinders the improvement of their language proficiency. Against this backdrop, with the rapid advancement of AI technology, an in-depth exploration of the impact of AI speaking practice tools on the speaking anxiety of non-English major university students holds significant theoretical and practical value.

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

This study aims to clarify the specific effects of AI speaking practice tools on the speaking anxiety of non-English major university students and to reveal their positive role in speaking learning. On the one hand, it seeks to provide theoretical support for the deep integration of AI technology and language teaching, promoting the practical application of theories related to speaking anxiety. On the other hand, it offers practical references for educators and relevant researchers, helping to improve the current state of speaking learning among non-English major university students and enhance their language expression skills. Therefore, this study has certain practical significance.

2. Literature Review

Currently, there is a substantial body of literature on speaking anxiety. In general, scholars have focused on two core directions: first, foundational research on speaking anxiety, which examines the current situation and distribution characteristics among non-English major college students, as well as internal (e.g., self-confidence, fear of making mistakes) and external (e.g., classroom evaluation, peer comparison) influencing factors, clarifying the differences in speaking anxiety across various groups and contexts. The second direction concerns research on strategies to alleviate speaking anxiety, covering traditional approaches such as optimizing teaching models, specialized communication training, and multimodal teaching applications, as well as innovative approaches that have emerged in recent years, such as AI-enabled teaching. These studies explore the practical effects of various strategies on reducing speaking anxiety and improving speaking proficiency. Within AI-related research, existing findings predominantly focus on overall application strategies of AI technology in speaking instruction. Targeted research on AI speaking practice tools remains relatively fragmented, and studies specifically addressing the application of AI speaking practice tools in this field are comparatively scarce. This paper reviews the theory and development of speaking anxiety, focusing on the core topic of "the impact of AI speaking practice tools on the speaking anxiety of non-English major college students." It concludes that the application of AI speaking practice tools can significantly improve students' speaking abilities.

This study draws on Krashen's "Affective Filter Hypothesis," proposed in *Principles and Practice in Second Language Acquisition*, as its core theoretical foundation. It explores the impact of AI speaking practice tools on the speaking anxiety of non-English major college students, verifies the anxiety-relief effect of these tools, and provides theoretical support for the deep integration of AI technology and language teaching. [1]

Domestic scholars have systematically explored the current situation and influencing factors of college students' speaking anxiety. Through large-scale surveys, Guo Yan and Xu Jinfeng revealed the specific manifestations of speaking anxiety in multiple contexts, verified the correlation between variables such as grade level and language proficiency and anxiety levels, and provided comprehensive empirical support [2]. Xiong Huilan identified key triggers of speaking anxiety, including learners' lack of confidence and pressure from classroom evaluations, pointing the way for the development of intervention strategies [3]. Using cluster analysis, Wu Wensheng et al. categorized anxious individuals into high, medium, and low groups, deepening the nuanced understanding of anxiety [4]. These studies have constructed a foundational framework for research on speaking anxiety among non-English majors, laying both theoretical and empirical groundwork for subsequent explorations of alleviation strategies.

Domestic scholars have also undertaken diverse explorations of alleviation strategies, covering areas such as traditional teaching optimization, specialized training, and the application of emerging technologies. Wang Yue found that the flipped classroom model can reduce students' pressure to speak immediately, effectively alleviating speaking anxiety [5]. Li Hui confirmed

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

that systematic communication training can enhance communicative confidence and reduce anxiety [6]. Sun Yihan proposed that multimodal strategies can lower students' barriers to speaking [7]. With the development of AI technology, Wang Xiaojin pointed out that AI speaking practice tools can provide a personalized, non-judgmental practice environment, thereby reducing speaking anxiety and increasing the courage to express oneself [8]. This provides a practical foundation for the research presented in this paper.

Overseas research on foreign language speaking anxiety is rooted in the exploration of affective factors in the field of second language acquisition. Krashen's Affective Filter Hypothesis identifies anxiety as a key negative affective factor hindering language acquisition, providing a core theoretical framework for studying the mechanism of anxiety's effects [1]. Building on this foundation, Horwitz et al. defined the concept of foreign language classroom anxiety, delineated three dimensions—including communication apprehension and fear of negative evaluation—and developed a standardized measurement scale, clarifying the core components of speaking anxiety [9]. These two contributions together form the basis of relevant international research and provide theoretical and methodological support for investigating the use of AI tools to intervene in anxiety. In recent years, foreign scholars have introduced AI tools into the study of foreign language learning. The core logic remains grounded in the aforementioned theories, aiming to reduce the pressure of interpersonal interaction, alleviate specific dimensions of anxiety, and thus lower the level of affective filtering.

3. Research Methods

3.1. Research Design

The core objective of this study is to explore the impact of AI speaking practice tools on the speaking anxiety of non-English major college students. Participants were recruited through an online platform, with a total of 102 individuals initially enrolled. Based on three screening criteria—being current non-English major undergraduates, scoring between 425 and 550 on the College English Test Band 4 (CET-4), and having not used any AI speaking practice tools in the past three months—42 eligible participants were identified. During the experiment, 6 participants withdrew, leaving 36 who completed the entire process, including the pre-test, 7-day intervention, and post-test. Grounded in Krashen's Affective Filter Hypothesis and Horwitz et al.'s (1986) [9] three-dimensional model of language anxiety, the study focuses on "fear of negative evaluation" and "communication apprehension" in interactive scenarios. A self-developed oral anxiety scale was used, with a pre-test score above 24 serving as an additional screening criterion. Participants used the "StarTalk" AI speaking practice tool for at least 20 minutes daily at a fixed time (engaging in real-time speaking responses) and uploaded their practice reports each day, without engaging in additional oral practice. Data analysis was conducted using SPSS and other software, integrating experimental data for statistical analysis to verify the tool's effectiveness.

3.2. Research Overview and Experimental Design

This study selected 36 non-English major undergraduate students as participants. Their College English Test Band 4 (CET-4) scores ranged from 425 to 550, and their pre-test scores for speaking anxiety were no less than 24 points. The experiment lasted a total of 9 days and was divided into three phases: pre-test, intervention, and post-test. The pre-test was conducted on Day 1, the intervention phase lasted for 7 days (from Day 2 to Day 8), and the post-test was conducted on Day 9. The study established two types of core variables: the intervention variable was the use of the StarTalk AI speaking practice tool, and the outcome variable was the change in participants' speaking anxiety levels. Two main types of tools were used in the experiment. The first was the AI experiment tool, namely the StarTalk AI speaking practice

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

platform, which utilized the platform's free conversation practice mode throughout the experiment. The second was a measurement tool, a speaking anxiety scale developed by the researchers. This scale was designed around two dimensions: communication apprehension and fear of negative evaluation, and it employed a 5-point scoring system (1 = strongly disagree to 5 = strongly agree).

The specific experimental procedure was as follows: On Day 1, during the pre-test phase, participants were asked to complete the speaking anxiety scale to record and calculate their initial speaking anxiety scores. From Day 2 to Day 8, the intervention phase, participants were required to practice daily with the designated AI speaking practice tool during a fixed time period, with each speaking practice session lasting no less than 20 minutes. Participants were asked to upload daily practice screenshots and reports. During the experiment, no other forms of speaking practice activities were permitted. On Day 9, the post-test phase, participants completed the same speaking anxiety scale again. Their speaking anxiety scores after the intervention were collected, forming paired sample data with the pre-test scores to prepare for subsequent analysis.

3.3. Participants and Data Collection

The participants in this study were non-English major undergraduates, with a total of 36 valid subjects ultimately included in the statistical analysis, covering multiple grade levels and various academic disciplines.

A questionnaire survey method was adopted for data collection. The questionnaire consisted of two parts: a survey on the basic information of the participants and an assessment using the speaking anxiety scale. The questionnaires were uniformly distributed and collected through an online platform, ensuring the standardization, accuracy, and validity of the data collection process.

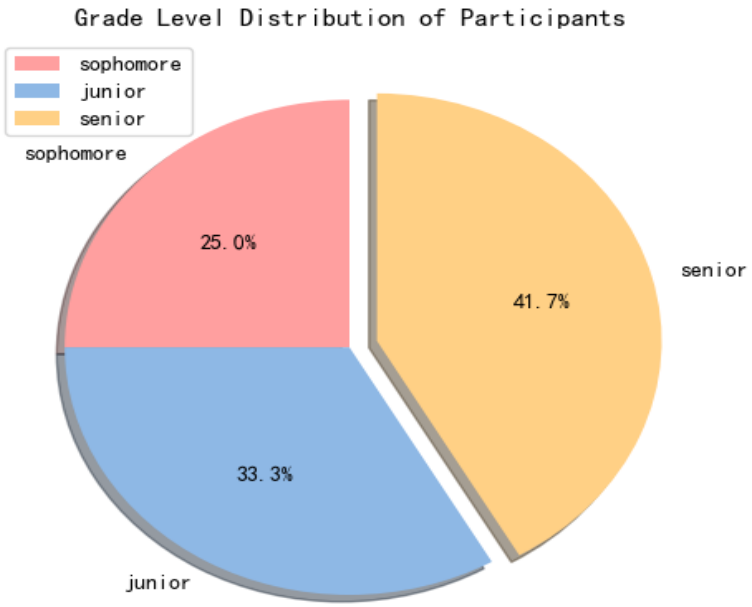

Figure 1. Grade Level Distribution of Participants

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

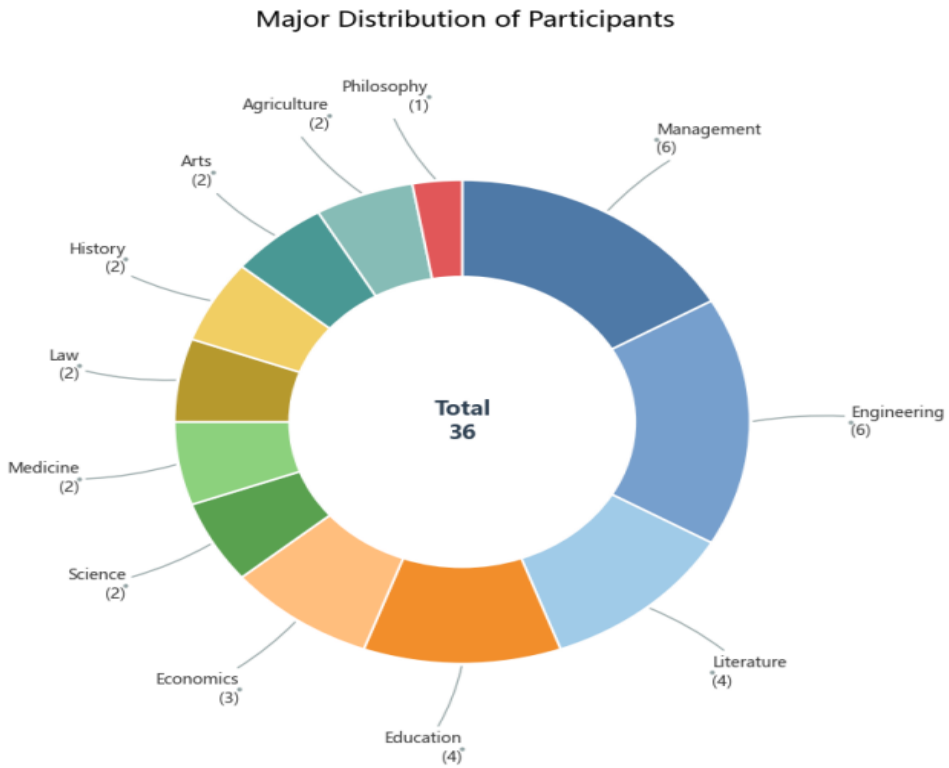

Figure 2. Major Distribution of Participants

3.4. Data Processing and Analysis

This study conducted a quantitative analysis of the intervention effect of the "Xingkong Foreign Language" AI speaking practice tool on speaking anxiety, with 36 non-English major undergraduates as valid participants. SPSS statistical software was used for data processing and analysis to ensure a scientifically rigorous analytical process. The core procedures for data processing and analysis were as follows: First, the collected pre-intervention and post-intervention speaking anxiety scores of the participants were preliminarily screened to identify and remove invalid data and outliers, ensuring data validity. Subsequently, a normality test was performed to verify the appropriateness of the data distribution. Descriptive statistics were then used to present the overall characteristics of the participants' speaking anxiety scores, with the core focus on validating the research hypothesis through paired-sample t-tests. This was supplemented by correlation analysis and analysis of variance to refine the research conclusions. In the statistical tests, $p < 0.05$ was set as the criterion for determining statistically significant differences, ensuring the reliability and scientific validity of the findings. The specific process and results are as follows.

3.4.1. Data Preprocessing

First, the paired scores of the 36 participants (pre-test speaking anxiety scores and post-test speaking anxiety scores) were systematically organized and recorded. The completeness and validity of the data were strictly verified, confirming that all 36 sets of data were complete and properly paired, thus laying a solid foundation for subsequent statistical analysis.

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

Table 1. Comparison of Pre-test and Post-test Scores

ID	Pre-use Rating	Post-use Rating	Difference (Pre - Post)
1	35	17	18
2	38	26	12
3	29	14	15
4	33	23	10
5	36	24	12
6	28	17	11
7	36	25	11
8	35	17	18
9	37	12	25
10	28	22	6
11	27	23	4
12	35	20	15
13	36	30	6
14	37	21	16
15	35	24	11
16	27	13	14
17	33	22	11
18	31	14	17
19	35	22	13
20	28	18	10
21	34	26	8
22	29	14	15
23	27	14	13
24	35	17	18
25	29	16	13
26	35	22	13
27	28	18	10
28	33	13	20
29	28	26	2
30	36	30	6
31	31	18	13
32	35	19	16
33	32	23	9
34	35	29	6
35	31	15	16
36	26	16	10

3.4.2. Test of Assumptions: Normality Analysis

The core prerequisite for the paired-sample t-test is that the score differences before and after the intervention follow a normal distribution. Therefore, normality was first verified through statistical tests and graphical visualization.

(1) Statistical Test Results

From the normality test table (Table 1), it can be seen that for the difference data (N=36) between "pre-use score" and "post-use score", the skewness is 0.147 and the kurtosis is 0.415,

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

both close to 0, indicating that the data distribution is approximately symmetric with moderate kurtosis. The Shapiro-Wilk (S-W) test statistic is 0.983 with a corresponding p-value of 0.855 > 0.05, and the Kolmogorov-Smirnov (K-S) test p-value is 0.608 > 0.05. Both tests do not reject the null hypothesis that "the differences follow a normal distribution", satisfying the core assumption of the paired sample t-test. In addition, for the "post-use score", the S-W test p-value is 0.137 > 0.05 and the K-S test p-value is 0.176 > 0.05, indicating that the overall data distribution is acceptable. Although both test p-values for the "pre-use score" are less than 0.05, given that the normality of the difference distribution has been verified and the sample size (N=36) is moderate, the Central Limit Theorem provides a certain degree of robustness, which does not affect the validity of subsequent tests.

Table 2. Normality Assessment

Variables	N	Mean	SD	Skewness	Kurtosis	S-W Test	K-S Test
Pre-score	36	32.306	3.608	0.282	1.415	0.901(0.004)	0.217(<.001)
Post-score	36	20.000	5.077	0.300	0.850	0.954(0.137)	0.125(0.176)
Difference (Pre - Post)	36	12.306	4.780	0.147	0.415	0.983(0.855)	0.093(0.608)

(2) Visual Validation

Figure 1 presents a histogram of the differences between pre-use and post-use scores (36 observations in total). As shown in the figure, the differences are concentrated between 3.4 and 23.6, exhibiting an approximately unimodal right-skewed distribution. The peak occurs around 12.1 (with a frequency of 11). Although the overall distribution slightly deviates from an ideal normal curve—where the theoretical curve is relatively flat, whereas the actual data are more concentrated in the center with slightly longer tails—the sample size exceeds 30. Therefore, the Central Limit Theorem applies, ensuring the robustness of the paired-sample t-test. This further confirms that the data meet the fundamental assumptions of the paired t-test, allowing the analysis to proceed to the hypothesis testing stage.

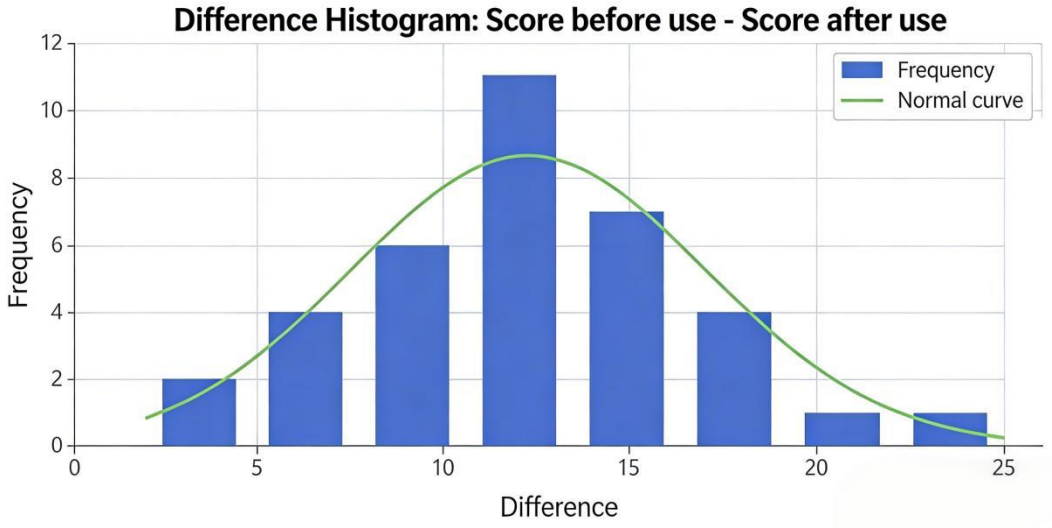

Figure 3. Histogram of the Differences

3.4.3. Primary Statistical Analysis: P ired Sample t-Test

To verify the intervention effect of the "StarTalk" AI speaking practice tool, a paired-sample t-test was conducted on the participants' speaking anxiety scores before and after the intervention, with a significance level set at $\alpha = 0.05$.

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

(1) Descriptive Statistics

Before the intervention, the mean score for speaking anxiety among participants was M_1 = 32.306, with a standard deviation of SD_1 = 3.608, indicating that after screening, individual differences in participants' initial anxiety levels were relatively small. After the intervention, the mean score for speaking anxiety dropped to M_2 = 20.000, with a standard deviation of SD_2 = 5.077, showing a significant decrease compared to pre-intervention levels, while the increase in standard deviation suggested that individual differences in participants' anxiety levels became more pronounced following the AI tool intervention.

(2) Hypothesis Test Results

The paired-sample t-test results in Table 2 show that the mean difference in scores before and after the intervention is 12.306, with a t-value of 15.447 and a p-value < 0.001 (well below α = 0.05). This leads to the rejection of the null hypothesis that "there is no difference in participants' speaking anxiety scores before and after the intervention," confirming a highly significant statistical difference in the level of speaking anxiety among participants after the intervention. Considering the trend in mean scores, it is clear that the use of the "StarTalk" AI speaking practice tool has significantly reduced speaking anxiety among non-English major college students.

Table 3. Paired Samples t-Test Table

Name	Paired (Mean ± SD)		Mean Difference (Pair 1 - Pair 2)	t-value	P-value
	Pair 1	Pair 2			
Paired Pre-use and Post-use Ratings	32.306±3.608	20.000±5.077	12.306	15.447	<.001

3.4.4. Supplementary Analysis: Correlation Analysis

To investigate how participants' baseline English proficiency influences the anxiety-relief effect of AI tools, a Pearson correlation analysis was conducted, with CET-4 scores (ranging from 425 to 550) as the independent variable and the difference between pre-use and post-use ratings (i.e., the change in anxiety level) as the dependent variable.

As shown in the correlation matrix in Table 3, the correlation coefficient between CET-4 scores and the change in anxiety level was r = -0.091, with p = 0.597 > 0.05, indicating no statistical significance. The absolute value of the correlation coefficient was less than 0.1, suggesting an extremely weak negative correlation. Moreover, this negligible association is likely attributable to sampling error rather than a genuine linear relationship. It can therefore be concluded that the anxiety-relief effect of the AI speaking practice tool is not influenced by participants' baseline English proficiency (within the CET-4 score range of 425 to 550).

Table 4. Correlation Matrix

	CET-4 Scores	Difference
CET-4 Scores	1.000	-0.091(0.597)
Difference	-0.091(0.597)	1.000

3.4.5. Data Analysis

Based on the statistical analysis of the experimental data, it can be clearly concluded that AI speaking practice tools can effectively reduce English speaking anxiety among non-English major university students. According to Krashen's Affective Filter Hypothesis, this reduction in anxiety can lower learners' affective filter, thereby minimizing the barrier that negative

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

emotions create for language input. This provides emotional support for second language acquisition and confirms the theoretical hypothesis of this study.

4. Conclusion and Future Directions

4.1. Research Conclusions

According to the findings of this study, AI-powered speaking practice tools have had a significant positive impact on the speaking anxiety of non-English major university students. A comparative analysis of pre-test and post-test results from participants shows that students' confidence in oral expression was effectively enhanced after using the tool.

In the post-test, the researcher added the question: "After one week of practicing speaking with an AI tool, do you feel your speaking anxiety has improved? Why?" The results indicate that most participants believe this new technology can effectively reduce the anxiety experienced during oral expression, and they are more willing to make mistakes and learn from them during practice. Participants generally reported a stronger grasp of the content they were speaking about, as well as noticeable improvements in fluency and pronunciation accuracy.

Taking the changes in three participants as examples: Participant 1, who initially avoided speaking due to fear of pronunciation errors and concern about how others might perceive them, became more emotionally stable in conversations after one week of AI-assisted practice. They became more accepting of mistakes, and instances of nervousness and stumbling decreased significantly. Participant 2, who had previously experienced high anxiety in impromptu speaking situations and was reluctant to speak without preparation, demonstrated more fluent language organization and improved logical coherence after one week. Their self-reported speaking anxiety score also dropped noticeably. Participant 3, who lacked confidence due to non-standard pronunciation and often hesitated or remained silent during practice, showed improved pronunciation accuracy after targeted exercises and repeated practice. This led to a stronger sense of self-worth, and they appeared more relaxed and natural in subsequent tests.

These observations suggest that AI speaking tools can foster a more supportive and open learning environment, encouraging students to actively participate in oral practice. Not only do they enrich the language learning experience, but they also deepen the overall learning outcomes.

In the post-test, the researcher also included the question: "Will you continue to use the AI speaking tool in the future? Why?" A word frequency analysis was conducted on the responses to this question, and a visual word cloud was generated to explore the subjective perceptions and user experiences of non-English major students regarding the AI tool. In the word cloud, the font size of each word is positively correlated with its frequency of occurrence. The core features can be summarized into three dimensions, clearly reflecting the relief of speaking anxiety among students after one week of AI-assisted practice and confirming the practical value of the tool.

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

Figure 4. Word Cloud of Participants' Subjective Perceptions

Based on the distribution of core keywords in the word cloud, "speaking," "practice," and "AI" form the foundational context of the feedback, reflecting students' clear understanding of the tool's core application scenarios. Negative words such as "anxiety," "worry," and "ridicule" stand in stark contrast to positive terms like "relief," "confidence," and "speaking," highlighting the tool's psychological value. Words focusing on the tool's functional attributes, such as "pronunciation," "correction," "grammar," and "guidance," reflect students' recognition of its effectiveness in supporting their learning. Additionally, terms like "one week" and "unaware" intuitively demonstrate the acceptability and engagement of short-term concentrated practice.

Combining the core keywords from the word cloud with the original survey responses, this study selects three types of representative feedback for detailed analysis, aiming to present students' authentic subjective experiences after one week of AI speaking practice.

First, corresponding to core keywords in the word cloud such as "anxiety," "ridicule," and "speaking," this category reflects the tool's role in alleviating "social evaluation anxiety." For example, Participant 4 reported: "Yes. Because the AI speaking tool offers diverse scenarios for practice and corrects my pronunciation and grammar. I'm not afraid of others ridiculing me when I make mistakes—it's a great tool for practicing speaking." Participant 5 similarly noted: "Yes, I used to be afraid to speak English because I thought others would mock my accent. But after practicing with AI, I've improved my English skills and no longer worry about being judged for speaking poorly." Such feedback directly confirms that AI practice eliminates the "fear of being evaluated" in real-life conversations, creating a stress-free environment for expression. This is a key reason students dare to speak and overcome speaking anxiety.

Second, corresponding to functional keywords in the word cloud such as "correction," "pronunciation," "grammar," and "guidance," this category reflects the tool's role in supporting "skill improvement." Participant 6 explicitly stated: "Of course, AI provides a lot of guidance. Nowadays, AI speaking software has many functions that meet the needs of speaking practice. For example, it offers suggestions and corrections for pronunciation, grammar, and linking words. Speaking practice is about cumulative effort." Participant 7 also mentioned: "Yes, after this week of speaking practice, I feel like I've improved a bit. I've started paying attention to tense issues... After a week of practice, I feel like my vocabulary recall has slightly returned." It is evident that the tool's real-time corrections and targeted guidance not only enhance students' language skills but also strengthen their confidence through "visible progress," indirectly alleviating anxiety caused by "perceived inadequacy."

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

Third, corresponding to experiential keywords in the word cloud such as "unaware," "relaxed," and "active learning," this category reflects the tool's role in stimulating "learning motivation." Participant 8 shared: "I would use it. Practicing speaking with AI feels more enjoyable than studying alone. You can freely discuss various topics, and time passes by unaware, which promotes active learning." Participant 9 added: "I would use it because AI patiently follows along with what I say, making me feel relaxed and alleviating speaking anxiety." Such feedback indicates that the engaging and interactive nature of AI practice reduces the monotony and psychological pressure of speaking exercises, allowing students to participate actively in a relaxed atmosphere. This creates a virtuous cycle of "alleviating anxiety—actively practicing—improving skills."

AI speaking practice tools demonstrate significant potential in effectively reducing speaking anxiety among non-English major college students and enhancing their language skills, offering innovative ideas and practical directions for future language teaching. It is recommended that subsequent studies expand the sample scope and employ different assessment tools to validate and further explore the long-term benefits.

4.2. An Investigation into the Functional Advantages and Learning Value of the "StarTalk" AI Speaking Companion Tool

"StarTalk" AI Speaking Practice Tool effectively alleviates speaking anxiety among non-English majors from multiple perspectives, including psychological experience, practice scenarios, skill enhancement, and learning feedback, thanks to its clear interface, standard pronunciation, and comprehensive functions. The tool provides systematic guided courses, starting with foundational content such as self-introductions, greetings, and personal information, progressing step-by-step. Combined with dialogue simulations, it allows even zero-basis learners to steadily build a solid foundation in speaking, reducing expression anxiety caused by weak fundamentals. At the same time, it leverages a vast array of real-life scenarios—covering high-frequency practical contexts such as dining, shopping, travel, tourism, and navigation—to immerse learners in authentic communication simulations. This helps them adapt to real conversations in a safe environment, alleviating nervousness and unease when facing actual situations.

The tool's AI-powered intelligent correction function provides real-time evaluation of pronunciation and grammar, pinpointing errors word by word and offering optimization suggestions. This enables learners to clearly identify their weaknesses, avoiding aimless practice, and continuously improve pronunciation accuracy and expression norms through ongoing corrections. The accompanying comprehensive practice report automatically identifies learning gaps, supports report export and error review, helping learners address specific shortcomings and gradually build expression confidence through manageable progress.

Additionally, its free chat mode allows learners to control the pace of conversations, further expanding practice scenarios and reducing speaking pressure. More importantly, "StarTalk" serves as a companion-like AI practice partner, creating a judgment-free, stress-free environment where learners need not worry about making mistakes or feeling embarrassed. They can practice freely at their own pace, gradually transforming from being afraid to speak to becoming willing and confident speakers. This truly alleviates speaking anxiety while enhancing speaking skills, fully demonstrating the significant value of AI-powered speaking practice tools in supporting college students' English learning.

4.3. Limitations and Future Directions

4.3.1. Research Limitations

This study validates the significant relief effect of the "Xingkong Foreign Language" AI speaking practice tool on speaking anxiety among non-English major university students. However, due

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

to objective constraints in research design, sample selection, and other factors, the generalizability and depth of the research conclusions have certain limitations. First, there were multiple constraints in sample selection. The effective sample size of this study was only 36 participants, strictly limited to non-English major undergraduate students with College English Test Band 4 (CET-4) scores between 425 and 550, who had not used any AI speaking practice tool in the past three months, and who scored ≥24 on the pre-test speaking anxiety scale. The study did not cover students with weak English foundations (CET-4 < 425) or those with higher English proficiency (CET-4 > 550 or passing CET-6), nor did it include English major students. Additionally, the grade distribution of the participants was uneven, and an analysis of differences based on academic background was missing. Consequently, it is impossible to determine the variation in the tool's intervention effects among students from different grades and academic backgrounds (humanities/sciences/engineering/arts). The potential influence of individual factors, such as participants' family English background and offline speaking learning experiences, on the experimental results was also not considered.

Second, the research period and evaluation dimensions were singular. The experimental intervention phase lasted only seven days, constituting short-term intensive practice. This setup can only validate the tool's short-term effect on alleviating anxiety but cannot explore its long-term sustained utility or the potential for learning burnout over extended use. The core evaluation relied on score changes on a self-developed speaking anxiety scale, supplemented by subjective questionnaire feedback, without conducting standardized quantitative assessments of the participants' speaking abilities.

Third, the study did not explore the relationship between academic background and speaking needs. The actual application scenarios and needs for English speaking vary among students from different academic backgrounds (for example, engineering students tend to require workplace English, while humanities students lean towards daily communication and academic exchanges). This research did not analyze the alignment between the tool's functions and the needs of students from different academic backgrounds, nor did it clarify the moderating role of academic background on the user experience and effectiveness of the tool.

4.3.2. Future Prospects

The deep integration of AI technology with language teaching is an inevitable trend in educational development. The application of AI speaking practice tools should adhere to the principle of maximizing benefits while minimizing drawbacks, achieving standardized and scientific use through multi-party collaboration. Future exploration can be advanced from multiple dimensions.

At the student level, it is essential to use AI tools rationally and avoid over-reliance. Students should treat AI as a supplementary tool for speaking practice, leveraging its pressure-free environment to overcome the fear of expression and using intelligent corrections to solidify foundational skills. At the same time, they must refrain from excessive dependence on AI-generated content, actively engage in language organization and logical thinking, and integrate human-computer practice with real interpersonal communication. This approach facilitates the transition from "daring to speak" to "being able to communicate effectively." Additionally, students should develop personalized practice plans based on their own proficiency levels, balancing online exercises with diverse offline learning formats.

At the teacher level, educators should play a leading role in empowering teaching. They need to proactively enhance their AI literacy and integrate AI speaking practice tools into the entire "teaching-learning-practicing-evaluating" process of oral language instruction. By designing targeted practice tasks tailored to students' proficiency levels and leveraging tool-generated practice reports, teachers can accurately identify students' weaknesses and implement focused classroom teaching. Furthermore, activities such as group discussions and situational

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202604_9(4).0019

simulations can compensate for the limitations of human-computer interaction. Using data from these tools, teachers can provide personalized guidance to students, thereby constructing a new model of AI-empowered oral teaching.

At the education authority level, it is necessary to improve regulations and strengthen supervision. Industry standards and evaluation criteria for AI educational tools should be established promptly, creating a unified regulatory framework covering aspects such as content design, functional accuracy, and data security. The collection and use of student learning data must be strictly monitored to ensure information security. Additionally, a platform for evaluating and recommending AI educational tools should be developed to help teachers and students select high-quality, compliant tools. At the same time, collaboration between universities and enterprises should be promoted to develop customized AI tools that better meet the specific needs of college oral English teaching.

Overall, AI speaking practice tools offer a new pathway to alleviate college students' speaking anxiety and enhance the efficiency of oral language learning. Only through the coordinated efforts of students, teachers, and education authorities can their technological advantages be fully leveraged, application challenges be mitigated, and deep integration with college English oral teaching be achieved. Ultimately, this will enable technology to truly empower language education.

References

[1] Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986). Foreign language classroom anxiety. The Modern Language Journal, 70, 125–132.

[2] Guo, Y., & Xu, J. F. (2014). A multidimensional study on English learning anxiety among non-English majors. Foreign Language World, (04), 2–11.

[3] Xiong, H. L. (2007). An analysis of factors affecting oral English anxiety among English learners. China Adult Education, (13), 178–179.

[4] Wu, W. S., Lu, J. M., & Guo, W. (2009). A cluster analysis of foreign language oral anxiety among college students. Psychological Science, 32(05), 1091–1094.

[5] Wang, Y. (2016). An investigation on English learning anxiety of non-English majors under the flipped classroom model. Journal of Guangxi Normal University (Philosophy and Social Sciences Edition), 52(04), 134–139.

[6] Li, H. (2013). An empirical study on the effect of communication training on foreign language communication apprehension among non-English postgraduates. Journal of Educational Science of Hunan Normal University, 12(03), 122–124.

[7] Sun, Y. H. (2022). Multimodality: An effective strategy to alleviate students' oral anxiety. Shanghai Research on Education, (10), 87–92.

[8] Wang, X. J. (2024). A study on college oral English teaching strategies empowered by AI technology. Overseas English, (19), 141–143.

[9] Krashen, S. (1982). Principles and practice in second language acquisition. Pergamon Press.