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YILDIZ TECHNICAL UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
DEPARTMENT OF FOREIGN LANGUAGES EDUCATION
ENGLISH LANGUAGE TEACHING PROGRAM

MASTER'S THESIS

THE IMPACT OF AI-ASSISTED SPEAKING PRACTICE ON FOREIGN LANGUAGE SPEAKING ANXIETY

GÖKÇE AYBAT
227C5019

THESIS ADVISOR
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Gökçe AYBAT tarafından hazırlanan “The Impact of AI-Assisted Speaking Practice on Foreign Language Speaking Anxiety” başlıklı çalışma, **29/05/2025** tarihinde yapılan savunma sınavı sonucunda oybirliği ile başarılı bulunmuş ve jürimiz tarafından Yabancı Diller Eğitimi Ana Bilim Dalı İngiliz Dili Eğitimi Programında **YÜKSEK LİSANS** tezi olarak kabul edilmiştir.

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ÖZET

YAPAY ZEKA DESTEKLİ KONUŞMA PRATİĞİNİN YABANCI DİL KONUŞMA ANKSİYETESİ ÜZERİNDEKİ ETKİSİ

Bu çalışma, yapay zekâ destekli konuşma pratiğinin yabancı dil konuşma kaygısı ve öğrenci tutumları üzerindeki etkisini incelemektedir. Son yıllarda yapay zekâ (YZ) araçları giderek daha fazla dil öğrenme ortamında kullanılmaya başlanmış olsa da, bu teknolojilerin öğrenenlerin duygusal ve algısal boyutları üzerindeki etkileri hâlâ yeterince araştırılmamıştır. Bu çalışmanın amacı, ChatGPT'nin sesli konuşma modu aracılığıyla yürütülen yapılandırılmış konuşma etkinliklerinin öğrencilerin konuşma kaygısını azaltıp azaltmadığını belirlemek ve öğrencilerin YZ'yi bir dil öğrenme aracı olarak nasıl algıladıklarını ortaya koymaktır. Araştırma, Türkiye'deki bir vakıf üniversitesinin İngilizce hazırlık programında öğrenim gören B1 düzeyindeki 28 öğrenciyle gerçekleştirilmiştir. Yarı deneysel desene dayalı olarak yürütülen çalışmada, katılımcılar yapay zekâ partner ile konuşma pratiği grubu (YZ grubu) ve insan partner ile konuşma pratiği grubu olmak üzere ikiye ayrılmıştır. Veriler, Short-Form Foreign Language Classroom Anxiety Scale (S-FLCAS) ve AI-Assisted L2 Learning Attitude Scale (AL2AS-CCS) adlı iki ölçek aracılığıyla toplanmıştır.

Bulgular, yapay zekâ destekli konuşma pratiğinin öğrencilerin konuşma kaygısını anlamlı düzeyde azalttığını ortaya koymuştur. Ayrıca, öğrenciler YZ kullanımına yönelik genel olarak olumlu tutumlar sergilemiş ve özellikle öğrencilerin bilişsel tutumları açısından yapay zekanın dil öğreniminde kullanımına dair pozitif sonuçlar elde edilmiştir. Bu sonuçlar, YZ tabanlı konuşma araçlarının kaygı düzeyi yüksek öğreniciler için destekleyici bir alternatif olabileceğini göstermektedir.

Anahtar Kelimeler: Yabancı Dil Konuşma Kaygısı, Yapay Zekâ, ChatGPT, Öğrenci Tutumları.

ABSTRACT

THE IMPACT OF AI-ASSISTED SPEAKING PRACTICE ON FOREIGN LANGUAGE SPEAKING ANXIETY

This study investigates the impact of AI-assisted speaking practice on foreign language speaking anxiety and learner attitudes among Turkish university preparatory students. In recent years, Artificial Intelligence (AI) tools have been integrated into language learning environments increasingly, yet their emotional and perceptual effects on learners remain underexplored. The study aimed to examine whether structured speaking activities conducted via ChatGPT's voice mode could reduce speaking anxiety and what attitudes students have toward AI as a language learning partner. A quasi-experimental design was adopted with two intact B1-level classes (N = 28) from an English preparatory program at a foundation university in Türkiye. Participants were divided into two groups: the AI-practice group engaged in weekly speaking tasks with ChatGPT, while the human-practice group performed the same tasks with peers. Data were collected through the Short-Form Foreign Language Classroom Anxiety Scale (S-FLCAS) and the AI-Assisted L2 Learning Attitude Scale (AL2AS-CCS).

The findings revealed that AI-assisted practice significantly reduced students' speaking anxiety, and the AI-practice group showed a greater decrease compared to the human-practice group. Additionally, participants expressed overall positive attitudes toward using AI for language learning, particularly in terms of their beliefs about its usefulness and their willingness to engage with it in the future. The results highlight the potential of conversational AI models as a supportive tool in anxiety-sensitive EFL settings.

Keywords: Foreign Language Speaking Anxiety, Artificial Intelligence, ChatGPT, Learner Attitudes.

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LIST OF ABBREVIATIONS

AI	: Artificial Intelligence
AL2AS-CCS Students	: AI-Assisted L2 Learning Attitude Scale for Chinese College
BC	: Behavioural Component
CC	: Cognitive Component
EFL	: English as a Foreign Language
FLCAS	: Foreign Language Classroom Anxiety Scale
FL	: Foreign Language
FLA	: Foreign Language Anxiety
FLSA	: Foreign Language Speaking Anxiety
GenAI	: Generative Artificial Intelligence
L2	: Second Language
LLMs	: Large Language Models
PSCAS	: Public Speaking Classroom Anxiety Scale
S-FLCAS	: Short-Form Foreign Language Classroom Anxiety Scale
SLSAS	: Second Language Speaking Anxiety Scale

1. INTRODUCTION

In recent years, the integration of Artificial Intelligence (AI) technologies into educational contexts has gained considerable attention, especially in the field of language learning. As one of the core language skills, speaking often poses unique challenges for learners due to its real-time, performance-based nature. This thesis explores the potential of AI-assisted speaking practice in addressing foreign language speaking anxiety (FLSA) among university preparatory students in Türkiye. By investigating both the anxiety and attitudinal aspects of learners' experience, the present study attempts to make a contribution to the growing body of literature on the use of AI in foreign language education.

1.1. Background of the Study

When compared to other linguistic skills, speaking is generally considered the most anxiety-inducing one for foreign language learners. This is because speaking requires learners to produce language in real time, often in front of others, which increases the pressure to perform accurately and fluently. Foreign Language Speaking Anxiety (FLSA) can be defined as the fear or tension that an individual experiences when they have to express themselves orally in a language other than their mother tongue (Horwitz, Horwitz, & Cope, 1986). It is a skill-specific type of anxiety that can adversely affect learners' willingness to participate in classroom activities and limit their opportunities for improving their speaking skills (MacIntyre & Gardner, 1994).

In comparison to other language skills like reading or writing, speaking offers little time for planning and self-correction. Mistakes that are made during oral communication are immediately noticeable to others, which may lead to fear of negative evaluation and embarrassment (Young, 1991). As a result, learners with high levels of speaking anxiety tend to avoid speaking tasks, stay silent in class, or speak less confidently, even when they have the linguistic knowledge to do better (Woodrow, 2006). Since speaking plays a crucial role in academic performance, professional

communication, and social interaction, reducing speaking anxiety is considered essential for successful language learning.

In the Turkish EFL context, speaking anxiety is particularly prevalent among university students enrolled in English preparatory programs. These students are often required to demonstrate their speaking skills in both classroom activities and high-stakes assessments, such as oral proficiency exams, which contribute to increased pressure and performance-related stress. Furthermore, the classroom environment in Türkiye, where emphasis is frequently placed on accuracy over fluency, may intensify the fear of students about making mistakes and being negatively evaluated by other students or instructors (Özer & Akçayoğlu, 2021). As a result, many learners develop a tendency to avoid speaking in class, which limits their opportunities to improve and reinforces a cycle of anxiety and silence. Despite the fact that speaking is a key component of communicative competence and is essential for academic success, many Turkish students graduate from English preparatory programs with limited speaking confidence. Therefore, addressing speaking anxiety in this specific context is crucial, as it directly affects learners' willingness to communicate and their overall progress in foreign language learning.

Recent developments in Artificial Intelligence (AI), particularly in large language models (LLMs) such as ChatGPT, have introduced new possibilities for language learning and practice. These tools can simulate interactive conversations, provide instant feedback, and create opportunities for personalized learning that adapt to learners' needs. In the context of speaking practice, AI-supported systems offer learners the opportunity to engage in low-pressure oral communication without the fear of being judged by peers or instructors. Since many students feel more relaxed when interacting with a non-human interlocutor, these tools may help reduce language learners' anxiety and increase their confidence in speaking tasks (Zhang et al., 2024). Moreover, AI-based speaking environments are available outside the classroom, offering flexible and consistent practice opportunities that are often limited in traditional educational settings. With features such as voice input, corrective feedback, and simplified language use, AI-powered platforms hold strong potential to support learners who experience speaking-related anxiety, especially in contexts where access to speaking partners is limited.

Although there is a growing interest in the use of AI tools in foreign language teaching, most studies have focused either on learners' affective responses or their attitudes toward AI use, rather than examining both simultaneously. Additionally, the majority of existing research has been conducted in East Asian or Middle Eastern contexts, with limited attention given to Turkish EFL learners, particularly those enrolled in university preparatory programs. However, these students represent a critical group as they face intensive English instruction and frequent performance-based evaluations within a relatively short academic timeframe. Despite the increasing availability of AI-powered speaking tools, few empirical studies have explored their impact on speaking anxiety in this population. Therefore, there is a need for research that not only investigates the effects of AI-assisted speaking practice on learners' anxiety but also considers their attitudes toward using such technologies as part of their language learning process. This study aims to address these gaps by providing data from a Turkish EFL setting and offering insights into both the emotional and attitudinal outcomes of AI-mediated speaking practice.

1.2. Significance of the Study

The present study holds significance for several reasons. First, it contributes to the limited body of research that explores how AI-integrated speaking tasks function in lowering speaking anxiety levels of foreign language learners, particularly in the Turkish EFL context. By examining both affective and attitudinal dimensions of language learning, the study offers a more comprehensive understanding of how AI technology may influence learners' anxiety levels and attitudes toward AI-assisted language learning. Second, this research provides empirical evidence from a university preparatory school setting, a population that is often overlooked in AI-related language learning studies despite facing intense language instruction and speaking-based assessments. Third, by adopting a quasi-experimental design, the study allows for a comparison between human-practice and AI-practice groups, offering practical insights into the effectiveness of integrating conversational AI tools, such as ChatGPT, into speaking-oriented curricula. The findings of this study may inform language instructors, curriculum designers, and educational policymakers who seek to incorporate AI technologies into language education in a pedagogically sound and learner-sensitive manner.

1.3. Purpose of the Study

This study seeks to examine the impact of AI-integrated speaking practice, through the use of ChatGPT, on the anxiety levels experienced by Turkish EFL learners at the university preparatory level. In addition to exploring the emotional impact of AI-assisted practice, the study also aims to examine students' attitudes toward integrating AI into language learning, with a particular focus on both cognitive and behavioural components of their attitudes.

By integrating structured speaking activities using ChatGPT into the foreign language learning process, this study seeks to determine whether AI-mediated foreign language speaking practice can serve as an effective tool to reduce learners' anxiety, which is often a major barrier to active oral communication in EFL classrooms. Moreover, by assessing learner attitudes, the research also explores how students perceive AI as a learning partner and what attitudes they have toward using it after the intervention process. Accordingly, the study adopts a quasi-experimental approach that involves pre-tests and post-tests, comparing one set of students engaged in AI-assisted speaking practice with another group who practiced speaking through human-assisted speaking activities. Additionally, the study incorporates a quantitative attitude scale to gain insight into learners' attitudes about AI's role in their language development. Overall, this research aims to contribute to the growing body of evidence on AI integration in foreign language education, especially by addressing gaps related to foreign language speaking anxiety, learner attitudes, and the Turkish EFL context, which is an area that has been underrepresented in previous studies.

In line with the aims of the study, three research questions were formulated. The first and second questions aim to investigate the effectiveness of AI-assisted speaking practice on dispelling foreign language speaking anxiety that students experience, both within the AI-assisted practice group and in comparison to a human-assisted speaking group. The third question explores students' attitudes toward the use of AI-assisted speaking practice in the context of EFL learning. Accordingly, the following research questions and hypotheses were developed:

RQ_1: To what extent does AI-assisted speaking practice reduce foreign language speaking anxiety among tertiary EFL students?

- **H_0:** There is no significant difference in foreign language speaking anxiety levels of students before and after participating in AI-assisted speaking practice.
- **H_1:** There is a significant decrease in foreign language speaking anxiety levels of students after participating in AI-assisted speaking practice.

RQ_2: Is AI-assisted speaking practice more effective than human-assisted speaking practice in reducing foreign language speaking anxiety?

- **H_0:** There is no significant difference in the reduction of speaking anxiety between students who participate in AI-assisted speaking practice and those who participate in peer-assisted speaking practice.
- **H_1:** Students who participate in AI-assisted speaking practice show a significantly greater reduction in speaking anxiety compared to those in peer-assisted speaking practice.

RQ_3: What are students' attitudes toward the use of AI-assisted speaking practice in language learning?

1.4. Limitations of the Study

Like all empirical studies, this research has several limitations that should be acknowledged. First, the sample size was relatively small, consisting of only 28 participants from a single institution. While the findings offer valuable insights, they may not be fully generalizable to broader EFL contexts or other educational settings. Second, the duration of the intervention was limited to five weeks, which may not be sufficient to observe long-term changes in speaking anxiety or learner attitudes. A longer intervention period might provide more stable and comprehensive results. Third, although a quasi-experimental structure was employed, lacking random assignment and the use of intact classes may have introduced uncontrolled variables, such as group dynamics or classroom atmosphere. Finally, students' prior exposure to AI technologies or their level of digital literacy was not assessed, which might have influenced the engagement of the AI-practice group with ChatGPT. These factors should be considered when interpreting the results and designing future studies.

2. LITERATURE REVIEW

This literature review explores the key themes related to AI-assisted speaking practice and its impact on foreign language learning anxiety and language learner attitude. First, it discusses anxiety in language learning, including its definition, types, its relationship with foreign language learning, specifically with foreign language speaking, as well as some assessment tools used to measure it. Next, it focuses on learner attitudes in foreign language education by also covering explanatory models and influencing factors. Additionally, it reviews artificial intelligence (AI) and its role in education, sharing information about large language models (LLMs) and their application in foreign language learning. Finally, relevant studies from the literature are presented to contextualize the research with existing findings and highlight gaps this study aims to address.

2.1. Anxiety

The term anxiety refers to the feeling of discomfort, worry, or fear when faced with a threat or a challenge (Kazdin, 2000). These feelings are natural reactions that can be observed in different phases of an individual's life span. However, some individuals may experience anxiety more often and/or for a longer period than others without any particular reason, and it may affect their lives in a negative way (Duvall & Roddy, 2020).

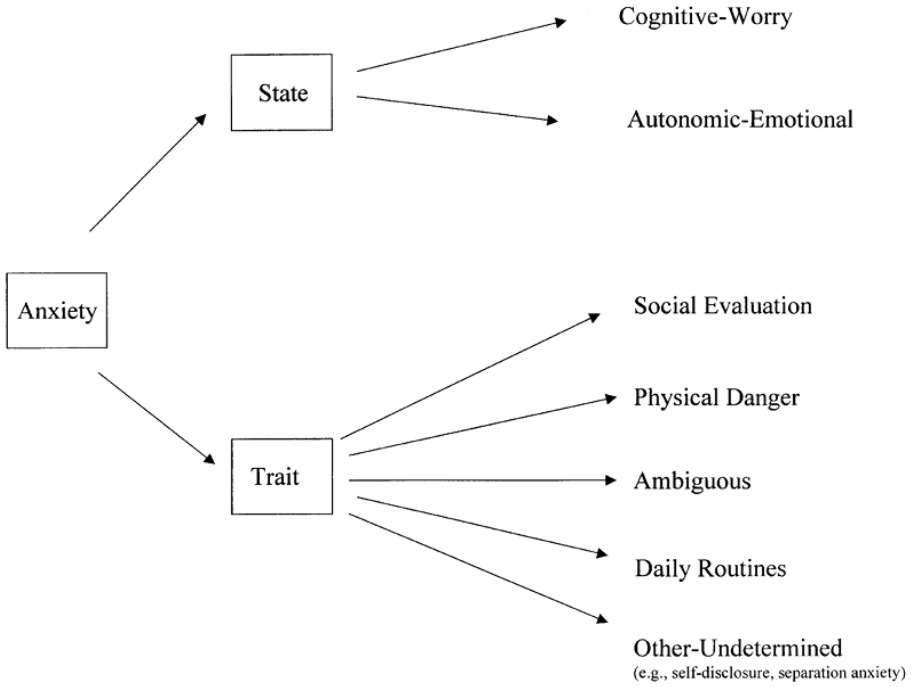
Anxiety is a psychological, physiological, and behavioural state that occurs in both animals and humans when their well-being or survival is under threat, and it is characterized by hyperstimulation, autonomic and neuroendocrine activation, and certain behavioural patterns (Steimer, 2002). It is a mental state that results from the anticipation of a potential threat (Grupe & Nitschke, 2013). Excessive anxiety may turn into a disorder, and it is determined by a combination of genetic and environmental factors in early life (Gross & Hen, 2004). When anxiety makes it hard to handle the stress one's mind and body are under, it can become pathological, which

is called an anxiety disorder and is a serious condition significantly affecting sufferers' ability to cope with life's challenges (Hale, 1997).

Anxiety can emerge under both natural and pathological circumstances and is a complex physiological and psychological state. It has genetic foundations in individuals, as well as environmental foundations (Fox-Gaffney & Singh, 2025), which means it can be triggered in different environments such as home, social gatherings, and school.

According to Spielberger (2013), anxiety has two types: state anxiety and trait anxiety, and these two types of anxiety are based on different physiological and psychological foundations and are related to different circumstances and personality traits.

Figure 1. The Multidimensionality of State Anxiety and Trait Anxiety



Source: Endler & Kocovski, 2001, p. 234

State anxiety refers to feeling anxious temporarily owing to some certain condition or occurrence (Saviola et al., 2020). This type of anxiety lasts shorter and is usually triggered by a certain stressor. For instance, the feeling of nervousness before an important exam or a presentation is a typical form of state anxiety. Trait anxiety, on

the other hand, is a long-lasting, sometimes permanent, personality trait with which a person tends to worry in general (Endler & Kocovski, 2001). It means that an individual who has trait anxiety frequently experiences feelings of worry and fear about various everyday situations. Trait anxiety is acknowledged as a part of the sufferer's personality and is shaped by genetics and early-life environmental factors (Endler & Kocovski, 2001). Trait anxiety increases the probability of experiencing state anxiety, as the people who constantly live with high levels of worry show more intense anxiety reactions when facing stressful situations (Kendall, 1978).

Some different forms of anxiety were first described by Hanterberg in 1910, using the umbrella term "shyness" (Pélissolo & Lépine, 1995), two of which are social anxiety and performance anxiety. Social anxiety is characterized by the feeling of anxiety experienced before or during social circumstances (Lievore et al., 2022). It can be characterized by the fear of being judged, criticized, and humiliated in social environments (Jefferson, 2001). This type of anxiety may have a negative impact on individuals' daily activities, social interactions, and even work performance. Individuals experiencing this particular type of anxiety often encounter a range of symptoms that can significantly impact their daily lives. These symptoms may include an intense fear of speaking in front of an audience, which can manifest as physical discomfort such as sweating, trembling, and heart palpitations (Alomari et al., 2022). Additionally, they may feel apprehensive about participating in group activities, fearing judgment or rejection from others (White, 2019). This anxiety can also lead to concerns about potential humiliation in social situations, resulting in a pervasive sense of inadequacy and self-doubt (Hedman et al., 2013). As a result, feelings of embarrassment may arise, further inhibiting their willingness to engage with others and participate fully in social or professional environments. Social anxiety generally emerges during puberty and can become chronic over time if left untreated (Fink et al., 2009). According to the American Psychiatric Association (APA) (2013), as well as genetic factors, neurochemical imbalance in the brain and environmental factors also play a role in the development of social anxiety. Social anxiety can lead to loneliness and lack of self-esteem in the individual (Ma et al., 2014). Research shows that social anxiety is often associated with depression, substance abuse, and other anxiety disorders (Stein & Stein, 2008).

Social anxiety is closely related to performance anxiety in particular, which is also classified and diagnosed as social anxiety or social phobia (APA, 2013). This is a situation that an individual experiences when they anticipate failure before and/or during important tasks, which leads to impaired performance (Powell, 2004). It can particularly occur under circumstances like public speaking, taking exams, having a job interview, and performing on a stage. Individuals may experience the feeling of increasing stress and worry before a performance, with physical symptoms such as nausea, trembling, muscle tension, and increased heart rate (Xu et al., 2025). Performance anxiety can hinder sufferers' potentials, affecting their social and professional lives, as well as their academic lives.

Just as in every other aspect of life, anxiety also significantly impacts the educational lives of its sufferers. It especially emerges in educational settings, where it is required for learners to perform academically, build social relationships, and express themselves to others (Ustabaşı, 2024). Students might experience intense feelings of worry and nervousness in some situations, like when they are asked to respond to questions, read aloud, or write on the whiteboard. This could have a negative impact on their learning process and overall academic achievement.

Anxiety is an important factor that significantly affects the cognitive skills of learners (Cai et al., 2024). High levels of anxiety may disrupt the processes of memory, concentration, and information processing (Robinson et al., 2013). Students struggle with the recollection of existing knowledge and with concentrating on the questions when they experience intense anxiety during assessment (Doctor & Altman, 1969). In a study examining the link between social anxiety and concentration, the study found that higher social anxiety was associated with lower concentration and poorer educational achievement in students (Leigh et al., 2021). Anxiety also may lead to some negative outcomes, such as academic procrastination and poor time management in students (Roshanisefat et al., 2021). It is not only detrimental to the self-confidence of learners but also damages their academic performance.

Social dynamics of educational settings is an important source of anxiety (Mudi, 2024). Some activities, especially the ones requiring active in-class participation, such as pair and group work, can create high-anxiety circumstances (Cohen et al., 2019). Learners experiencing social anxiety tend to avoid situations like speaking in front of authority figures, asking and answering questions, and attending social events (Urbán

et al., 2024). This kind of behaviour limits academic and social development opportunities by restricting active participation in the learning process. In a study by Archbell and Coplan (2021), the researchers, using a conceptual model that uses academic communication to connect social anxiety to students' experiences and socioemotional functioning, found out that student engagement is favourably correlated with communication with peers and teachers and that peer and teacher interactions are significant indicators of achievement in the classroom for anxious learners. Thus, communication in the classroom is key, and not only among peers; anxiety also affects the education processes of students through student-teacher relationships. The fear of being judged and criticized by their teachers can increase students' performance anxiety (Giray et al., 2022). Teacher feedback directly influences students' anxiety levels (Di Loreto & McDonough, 2013), therefore their engagement and achievement. According to a study conducted with tertiary-level students in a writing classroom at a Japanese university, when given feedback, low-anxiety students were found to be more inclined to act on it, whereas high-anxiety students were more likely to respond adversely (Elwood & Bode, 2014).

There may be negative effects of anxiety on the long-term educational goals of individuals as well. Highly anxious learners may decide to aim lower or even completely give in owing to the fear of failure (Van Ameringen et al., 2003). A longitudinal study by Duchesne and his colleagues (2008) explored trajectories of anxiety during elementary school and their predictive value for high school noncompletion, and what they found out was that students with high anxiety were more likely to not continue their high school education. Therefore, anxiety could adversely affect not only the educational lives of learners but also their overall life qualities.

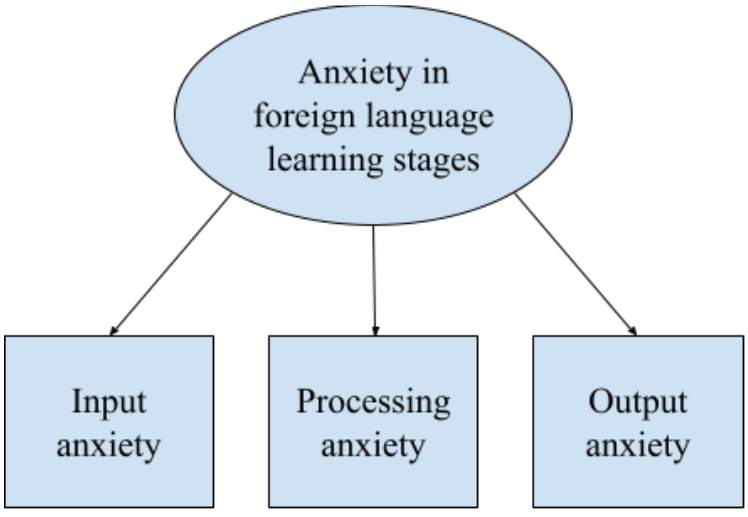
To be able to cope with anxiety in education, some approaches can be adopted by learners. Students can employ various strategies to manage their anxiety, and these can be categorised as adaptive and maladaptive coping strategies, the latter of which is not effective in overcoming it and has a negative correlation with students' well-being (Chaaya et al., 2025). Adaptive coping strategies include working through the problem causing the anxiety, finding resources that help with the challenge, seeking support from other people and even authorities, and also some self-regulation strategies like self-talk and deep breathing (England et al., 2019). Maladaptive coping strategies, on the other hand, are often adopted by learners discouraged by their anxiety, such as

avoiding the situations that lead to it, and although these avoidance strategies may help reduce the state anxiety in an immediate way, they could lead to long-term academic failure (Thomas et al., 2017).

2.1.1. Anxiety in Foreign Language Education

Foreign language learning is a complex process that affects cognitive, social, and emotional aspects of individuals (Javaid et al., 2023). This multidimensionality is the main reason why many foreign language learners experience intense anxiety, especially in the foreign language classroom. Foreign Language Anxiety (FLA) refers to the state of affective responses such as anxiety, worry, and stress experienced by language learners as a reaction to their learning situations (Ellis, 2001). It is a phenomenon that can occur during each phase of the language learning process: input, processing, and output (Bailey, 2000), each of which has a critical role in achieving attainment in language learning. In the input phase, distractions like fear of negative evaluation can block information from being encoded, whereas in the processing phase, storing information may become slower and less accurate (Haroud et al., 2025). In the output phase, on the other hand, some students are able to make up for the negative effects of anxiety through increased effort, as noted by MacIntyre and Gardner (1994).

Figure 2. Stages of Language Learning in Which FLA is Experienced



Just as with generalized anxiety, FLA can also be identified as state FLA and trait FLA, along with a third type named situation-specific anxiety, which refers to a type of anxiety that is only experienced under a particular situation (MacIntyre & Gardner, 1991). Research has shown a significant relationship between state-trait anxiety and FLA, with generalized anxiety often accompanying FLA. This relationship is particularly pronounced among Turkish learners of English as a Foreign Language (EFL) (Önem, 2010). Therefore, symptoms of other anxiety types can be observed in students with FLA, like the fear of speaking in language classes, exam anxiety, and fear of being negatively evaluated. FLA can have a negative influence on foreign language attainment and may also reduce the level of motivation (Horwitz et al., 1986). This type of anxiety can stem from a range of factors. Individual differences, such as students' beliefs about language learning, play a significant role in whether they will experience FLA (Young, 1991). Additionally, low self-esteem has been identified as a contributing factor for experiencing FLA (Yamini & Tahriri, 2006). Furthermore, the learning environment and the role of the language teacher can also influence the development of such anxiety (Oteir & Al-Otaibi, 2019). Students' perceptions of their own self-efficacy, expectations of academic success, and experiences in the language classroom may also affect their anxiety levels (Onwuegbuzie et al., 1999). Chen and Chang (2017), in their study where they investigated the relationship between foreign language learning difficulties and anxiety, discovered that the difficulties in students' language learning history also predicted their foreign language anxiety levels.

FLA is frequently observed in foreign language classrooms; therefore, language teachers may need to employ a variety of strategies to reduce the level of anxiety experienced by their students. Individual support, raising the perception of self-efficacy, and developing positive attitudes towards learning the language are among the recommended strategies (Özer & Akçayoğlu, 2021). According to the research by Jin and his fellow researchers (2021), having students reminisce about their past achievements in foreign language learning helps reduce foreign language anxiety. Another study suggests that building a supportive and non-competitive environment in the classroom also could help reduce anxiety in foreign language learners (Nilsson, 2019).

2.1.2. Foreign Language Speaking Anxiety

FLA is a multidimensional phenomenon that affects the reception, processing, and production of the target language, and it can have a negative impact on the language learning process. Among language skills, speaking is often regarded by foreign language learners as the most anxiety-inducing and threatening (MacIntyre & Gardner, 1994), as it typically requires real-time performance in social contexts, making learners feel more exposed to judgment and error. Foreign language speaking anxiety (FLSA) is a subcategory of FLA and refers to "the feeling of tension and apprehension" specifically before and/or during oral production, according to MacIntyre and Gardner's definition (1994). This type of anxiety may hinder the development of productive linguistic skills and affect learners' linguistic performance negatively. FLSA mostly becomes evident during in-class activities, spontaneous conversations, and interactions with native speakers (Horwitz et al., 1986). In a study conducted by Marzec-Stawiarska (2015), the anxiety levels of advanced learners of English were investigated, and it was found that FLSA is common even among advanced learners and that most of the students are worried about their fluency, vocabulary, pronunciation, and content of their oral performance. The students also stated that they experience higher levels of anxiety when they are communicating with native speakers (Marzec-Stawiarska, 2015).

FLSA may cause some physical (trembling, sweating, nausea) and emotional (intense worry, fear) symptoms in individuals during speaking tasks, just as in other types of anxiety. Learners may also experience some other symptoms like laughing, stammering, and avoiding eye contact while speaking due to FLSA (Chiu et al., 2010).

The most common causes of FLSA include worry about committing mistakes and anxiety over receiving negative feedback from peers or instructors, the need for spontaneous speech, and low self-esteem (Woodrow, 2006). Brown (2014) suggests that one of the main reasons learners feel anxious when speaking a new language is the fear of making mistakes or saying something incorrect, foolish, or unclear, and he explains that the concept of a "language ego" makes learners associate their identity with the way they speak, which leads learners to become hesitant and afraid of being judged by their listeners (p. 269). On the other hand, FLSA can be experienced differently in and out of the classroom. A study by Nastiti (2023) discovered that the existence of teachers and peers in the classroom increases the level of speaking

anxiety, and that the degree of anxiety is even higher in authentic target language environments, for example, in the native country of the target language.

As FLSA can play a hindering role in the language learning process, there are various strategies employed by language teachers in order to help learners overcome their anxiety. The most commonly used approach is creating a safe and supportive classroom environment, since learners' feeling comfortable and relaxed in the classroom plays a critical role in reducing their anxiety levels (Inada, 2021). Language teachers should create a supportive and safe classroom environment and a strong rapport in order to reduce the anxiety levels of language learners. Creating more opportunities to speak in the target language for students and highlighting that making mistakes is a natural process of learning are important steps for overcoming FLSA (Akkakoson, 2016). A supportive learning environment promotes speaking without concern about making mistakes; thus, teachers should build an atmosphere in which learners can receive constructive and positive feedback and are able to practice speaking freely and safely. Teachers should also observe learners very carefully and be able to identify the symptoms of anxiety so that they can communicate with anxious learners to develop strategies according to their needs (Tsiplakides & Keramida, 2009). These students can be addressed to use some methods such as cognitive behavioural therapy (CBT), meditation, and mindfulness techniques to help improve their anxiety coping skills (Prisniakova et al., 2023).

Students feel more assured when they are well-prepared and given the opportunity to practice. Practicing regularly can be effective in reducing learners' anxiety. Therefore, teachers should provide learners with resources and activities to practice outside the classroom (Nuraeni et al., 2024). Besides, teachers can also employ techniques of positive thinking and positive feedback in order to have learners gain confidence. They should emphasize learners' achievements and encourage them (Kao & Craigie, 2013).

Collaboration through pair or group work enables students to overcome their anxiety and speak much more confidently (Bozkurt & Aydin, 2023). Collaborative learning strategies help learners improve their language skills by interacting with one another. Thus, language teachers may promote collaborative learning by having learners form pairs or groups in the classroom.

There are also other techniques that can be employed for reducing FLSA. According to Luo and his colleagues (2025), slow and deep breathing can reduce anxiety. Theriana (2023) also recommends emotion regulation techniques such as deep breathing, which are practices that alleviate the symptoms of FLSA. Meditation and mindfulness interventions can also help learners keep their anxiety under control (Haberlin & Bradshaw, 2025). Positive self-talk is another method that enhances learners' self-confidence and reduces the feeling of worry so that they can manage their stress by sending positive and encouraging messages to themselves (Kao & Craigie, 2013). Language teachers can introduce these techniques to learners and integrate their applications into the classroom.

Language learners can also adopt numerous strategies to get over FLSA. The first and most effective of all is preparation and practice. Lack of preparation is a major factor causing speaking anxiety; therefore, learners can reduce their anxiety levels by preparing well and practicing regularly (Asysyfa et al., 2019). Preparation strategies include working on vocabulary and grammar and practicing speaking in the target language frequently (Nuraeni et al., 2024). As students study and practice, it enables them to improve their language skills and reduce their anxiety levels. It is advisable for foreign language learners to create daily study plans for achieving their language goals (Abdurrahman & Rizqi, 2020). On the other hand, practicing speaking generally requires another interlocutor, which may not always be available for the second/foreign language learners, especially in the expanding circle countries. This may result in a lack of speaking practice outside the classroom. To bypass this problem, language learners can self-talk in the target language as if they are speaking with another person. According to Alnaeem (2025), self-talk helps reduce EFL learners' speaking anxiety levels. This strategy can be used by narrating daily activities, talking about past events and plans, and using a mirror or recording device.

In conclusion, there are a number of effective strategies that could help learners cope with FLSA, for both teachers and learners, including building a supportive classroom atmosphere, providing students with preparation and practice facilities, introducing positive thinking and giving positive feedback, integrating collaborative learning strategies, and techniques like practice, meditation, and self-talk. These strategies can be introduced to learners by language teachers, also emphasizing how natural it is to experience FLSA.

2.1.2.1. Measuring FLSA

FLSA stands out as one of the biggest obstacles that language learners encounter during the time they learn and use their foreign language. Because it is an important aspect of foreign language learning, there have been many attempts to design scales to assess learners' anxiety levels. There are various scales that were designed to measure and are validated, which aim for objectively assessing the level of anxiety that foreign language learners experience. The most prevalently used instruments amongst all scales that measure FLSA are the Foreign Language Classroom Anxiety Scale (FLCAS), Short-Form Foreign Language Classroom Anxiety (S-FLCAS), Second Language Speaking Anxiety Scale (SLSAS) and Public Speaking Classroom Anxiety Scale (PSCAS). These scales are widely known and used by researchers and language teachers to determine and manage the anxiety levels of foreign language learners.

The Foreign Language Classroom Anxiety Scale (FLCAS), designed by Horwitz and colleagues in 1986, is a 33-item Likert scale measuring learners' communication anxiety, test anxiety, and fear of negative evaluation on a 5-point scale ranging from 5 (Strongly Agree) to 1 (Strongly Disagree). Table 1 below displays the items categorized by the three subdimensions:

Table 1. FLCAS Items Categorized by the Three Dimensions

Area	Number	Statement
Communication Anxiety		
	1	I never feel quite sure of myself when I am speaking in my English class.
	9	I start to panic when I have to speak without preparation in English class.
	14	I would not be nervous speaking English with native speakers.
	18	I feel confident when I speak in English class.
	24	I feel very self-conscious about speaking English in front of other students.
	27	I get nervous and confused when I am speaking in my English class.
	29	I get nervous when I don't understand every word the English teacher says.
	32	I would probably feel comfortable around native speakers of English.
Test Anxiety		
	2	I don't worry about making mistakes in English class.
	8	I am usually at ease during tests in my English class.
	10	I worry about the consequences of failing my English class.
	19	I am afraid that my English teacher is ready to correct every mistake I make.
	21	The more I study for an English test, the more confused I get.
Fear of Negative Evaluation		
	3	I tremble when I know that I'm going to be called on in English class.
	7	I keep thinking that the other students are better at English than I am.
	13	It embarrasses me to volunteer answers in my English class.
	15	I get upset when I don't understand what the teacher is correcting.
	20	I can feel my heart pounding when I am going to be called on in English class.
	23	I always feel that the other students speak English better than I do.
	25	English class moves so quickly, I worry about getting left behind.
	31	I am afraid that the other students will laugh at me when I speak English.
	33	I get nervous when the English teacher asks questions which I haven't prepared in advance.

Source: Berowa, 2018, p. 5

The Short Form of Foreign Language Classroom Anxiety Scale (S-FLCAS) is the short form of FLCAS. It was created by MacIntyre (1992) in his doctoral dissertation by selecting out 8 items from the original 33-item scale. The new scale was afterwards used in a study by Dewaele and McIntyre (2014). To be able to fully validate the scale, Botes and her colleagues (2022) implemented comprehensive research with the participation of 370 foreign language learners to ensure the validity and reliability of S-FLCAS. After administering it to the participants and conducting various analyses on the dataset using factor analysis and validity tests, they found out that the shorter scale has a single-factor structure; in other words, it includes 8 items that are related

to the same underlying variable, and it was shown to be reliable and valid, remaining consistent across different ages, gender, education levels, and first language groups (Botes et al., 2022). Also, S-FLCAS offers a more practical use while keeping the psychometric validity and reliability that the original scale has (Karabulut, 2023). Therefore, the shorter version of the scale can be confidently recommended for use in academic research.

Table 2. Factor Values of S-FLCAS

Item	Factor 1
1. Even if I am well prepared for FL class, I feel anxious about it	0.775[a]
2. I always feel that the other students speak the FL better than I do	0.611[a]
3. I can feel my heart pounding when I0′m going to be called on in FL class	0.779[a]
4. I don0′t worry about making mistakes in FL class[b]	0.476[c]
5. I feel confident when I speak in FL class[a]	0.754[a]
6 I get nervous and confused when I am speaking in my FL class	0.737[a]
7. I start to panic when I have to speak without preparation in FL class	0.840[a]
8. It embarrasses me to volunteer answers in my FL class	0.781[a]

[a] High loading (>0.6).
[b] Reverse-scored items.
[c] Acceptable loading (0.4–0.6).

Source: Botes et al., 2022, p. 14

SLSAS is another scale used to measure this type of learner anxiety, and it was developed by Woodrow (2006) to measure English as a second language learners' level of speaking anxiety. It consists of 12 items in which learners read the statements and choose the level of anxiety they experience in certain situations. SLSAS has been validated and acknowledged as a reliable and significant instrument for measuring FLSA (Woodrow, 2006).

Table 3. Items of SLSAS

1	2	3	4	5
Not at all anxious	Slightly anxious	Moderately anxious	Very anxious	Extremely anxious

Situation	*Anxiety*
1. The teacher asks me a question in English in class.	O O O O O 1 2 3 4 5
2. Speaking informally to my English teacher out of class.	O O O O O 1 2 3 4 5
3. Taking part in a group discussion in class.	O O O O O 1 2 3 4 5
4. Taking part in a role-play or dialogue in front of my class.	O O O O O 1 2 3 4 5
5. Giving an oral presentation to the rest of the class.	O O O O O 1 2 3 4 5
6. When asked to contribute to a formal discussion in class.	O O O O O 1 2 3 4 5
7. Talking to administrative staff of my language school in English.	O O O O O 1 2 3 4 5
8. Taking part in a conversation out of class with more than one ***native speaker*** of English.	O O O O O 1 2 3 4 5
9. Starting a conversation out of class with a friend or colleague who is a ***native speaker*** of English.	O O O O O 1 2 3 4 5
10. A lecturer/supervisor in my intended university faculty of study asks me a question in English.	O O O O O 1 2 3 4 5
11. Asking for advice in English from a lecturer/supervisor in my intended university faculty of study.	O O O O O 1 2 3 4 5
12 A ***native speaker*** I do not know asks me questions.	O O O O O 1 2 3 4 5

Source: Woodrow, 2006, p. 327

Another scale developed by Yaikhong and Usaha (2012), PSCAS was created to measure the public speaking anxiety that is experienced in English language classes by adopting some items from different anxiety scales. It includes the subdimensions communication anxiety, test anxiety, fear of being negatively evaluated, and comfort in using English (Yaikhong & Usaha, 2012). The scale was validated and showed high internal consistency after being administered to 76 participants.

Table 4. Items of PSCAS

Item No	Statements adopted with minor adaptation in wordings	Opinion				
		(5) Strongly Agree	(4) Agree	(3) Undecided	(2) Disagree	(1) Strongly Disagree
1	I never feel quite sure of myself while I am speaking English.					
2	I start to panic when I have to speak English without a preparation in advance.					
3	In a speaking class, I can get so nervous I forget things I know.					
4	I feel confident while I am speaking English.					
5	I get nervous and confused when I am speaking English.					
6	I am afraid that other students will laugh at me while I am speaking English.					
7	I get nervous when the English teacher asks me to speak English which I have prepared in advance.					
8	I have no fear of speaking English.					
9	I can feel my heart pounding when I am going to be called on.					
10	I feel relaxed while I am speaking English.					
11	It embarrasses me to volunteer to go out first to speak English					
12	I face the prospect of speaking English with confidence.					
13	Certain parts of my body feel very tense and rigid while I am speaking English.					
14	I feel anxious while I am waiting to speak English.					
15	I dislike using my voice and body expressively while I am speaking English.					
16	I have trouble to coordinate my movements while I am speaking English.					
17	Even if I am very well prepared, I feel anxious about speaking English.					

Source: Yaikhong & Usaha, 2012, p. 10

2.2. Learner Attitude

According to Wesely (2012), a learner's attitude consists of perceptions, beliefs, and views about both language learning and their own identity as a language learner, all of which have a significant impact on learning outcomes. Attitudes learners have may affect their motivation, engagement, willingness to communicate, and overall academic performance (Wesely, 2012). Throughout their journey of foreign language learning, students embrace different beliefs and opinions regarding their learning, which are cognitive aspects of attitude, and these have negative or positive influences on learners. When a student is convinced that language learning will be beneficial for their career opportunities in the future, for instance, they tend to be more focused on and motivated about learning (Dörnyei, 2003). Therefore, the cognitive component of attitude is crucial for learners since individuals' beliefs determine their actions, and actions lead to outcomes. The affective component of attitude, on the other hand, is more about emotions and feelings toward learning experiences, such as the feelings

arising from classroom setting, teacher, peers, and even materials. If a student is worried about making mistakes in a foreign language class, it stems from their feelings toward past and/or current learning experiences, which is the affective aspect of learner attitude (Sardegna et al., 2018).

Finally, attitude also has a behavioural component, and it refers to how an individual acts in response to something (Dogan & Tuncer, 2020). The behavioral component of learner attitude is relatively easy to observe for teachers. To illustrate, a student with a positive behavioural attitude may actively participate in classes, whereas a student with a negative attitude may avoid volunteering. All three components are interrelated to and interact with each other, and they altogether are influenced by and also shape the language learning journey of students.

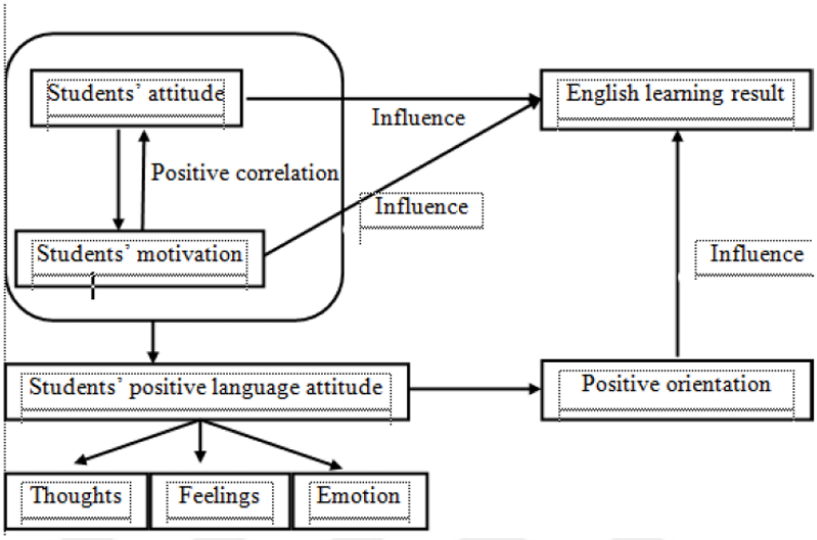
One of the most important models that explain learner attitudes in second/foreign language learning is the Socio-Educational Model (Gardner, 1985). In this model, it is suggested that language learning is not just a cognitive process; it is influenced by social and affective factors, which refers to the two components of learner attitude (Gardner, 1985). In terms of second/foreign language achievement, attitude toward language learning is one of the most significant predictors; that is, alongside motivation and context, attitudes play a crucial role in language attainment, according to Gardner (1985). To measure these factors, Gardner (2004) developed the Attitude/Motivation Test Battery (AMTB), which aims to assess attitudes of learners toward the learning environment and target language community, their motivation levels, and anxiety. Another important model that contributes to the understanding of learner attitude in foreign language education is the L2 Motivational Self System introduced by Dörnyei (2005). According to the model, a learner's motivation, which is a part of their attitude towards learning, consists of three main components: Ideal L2 Self, Ought-to L2 Self, and L2 Learning Experience. Ideal L2 Self refers to learners' inner visions in which they imagine themselves while speaking the target language fluently. It strengthens intrinsic motivation as learners put effort into reaching the identity they imagine having (Dörnyei, 2009). Ought-to L2 Self describes the motivation that the learner developed to fulfil other people's perceptions and to avoid the fear of failure. Unlike the former one, it is more related to extrinsic motivation. L2 Learning Experience, on the other hand, encompasses individuals' experiences, learning environments, interactions with teachers and peers, and learning

materials. This component focuses on how positive experiences in the learning process affect the learner's attitude. Dörnyei and Ushioda (2021), in their book on motivation, argue that this system explains how motivation, a key part of attitude, is shaped by both individual and contextual factors. These factors affecting learner attitude can mainly be classified as individual factors, social setting, learning environment, and technology use.

Learner attitude is directly influenced by learners' personality traits, such as being empathic or proactive (Fandoz-Herrera et al., 2023). Also, environmental factors like a pleasant school environment and friendly atmosphere play a significant role in shaping learner attitudes (Umm-e-Rabania, 2024). One of the most significant factors affecting learner attitude is motivation. In a mixed-method design study by Nevisi and Farhani (2022) investigated the motivational factors' effect on 180 Iranian EFL learners aged between 18-31, and the findings revealed that intrinsic motivation, like personal enjoyment, social prestige, and intellectual challenge, has a significant role in determining the attitude of language learners. It was also found out that beginner-level language learners mostly rely on extrinsic motivation stemming from some factors such as career opportunities, higher education, and financial gain (Nevisi & Farhani, 2022). Another important element in learner attitude is the language proficiency level of students. Their proficiency level impacts students' attitudes toward the language learning process. Yue and Fan (2022), in their study, in which they investigated the relationship between language attitudes of students and some influencing factors, including language proficiency, recruited Chinese language learners and conducted regression analyses to find out how different variables are related to each other. They found out that the language proficiency level of learners significantly impacts their attitudes; students with higher proficiency levels show more positive attitudes toward language learning (Yue & Fan, 2022). Cultural exposure and understanding of language learners are also significant influencing factors in learner attitudes. Using materials and contexts that include the target culture may result in a positive learner attitude. Kormos and Csizér (2008) examined various variables and their impact on language learner attitudes, including integrativeness, instrumentality, and cultural interest. A 76-item questionnaire was administered to 202 language learners, and one of the main findings revealed that the students who are exposed to

English-language cultural products show greater motivation, which plays a key role in positive learner attitude (Kormos & Csizér, 2008).

Figure 3. Visualization of the Students' Attitude Toward Learning English as a Foreign Language



Source: Mustafa et al., 2015, p. 4

The most important factor in classroom-based education is arguably the educational environment. Numerous studies have demonstrated the significant impact of physical and social learning settings on learner attitudes. For instance, with the participation of 68 English language teachers and 389 English language students at Chinese universities, Yang (2024) observed that teachers that support the autonomy of their students and support from peers foster learners' emotional well-being and engagement, resulting in positive attitudes. The study by Wu and Dong (2024), also investigating the teacher and peer effect on 387 university-level language learners' attitude and emotional well-being, also supports the previous one, concluding that supportive teachers help reduce students' anxiety in the classroom and promote their motivation. Supportive teachers can also help to mitigate the negative effects of peers by creating a collaborative learning environment (Feng & Li, 2016). Peer relationships are critical in a learning setting. Students generally interact with each other for vast amounts of time in language classes, as language learning is based on communicative skills. Learners can encourage or deter each other in the classroom. As well as teacher feedback, getting feedback from peers is also an effective way of learning. In an

experimental study by Ghani and Asgher (2012), the results of pre- and post-tests after an intervention involving a feedback activity showed that students have positive attitudes toward peer feedback, and it helped them enhance their writing performance. Another study by Xu and her colleagues (2005) explored the effects of peer tutoring on social interactions of English language learners and native English-speaking students. The results demonstrated that peer tutoring increased positive social interactions for both groups, and students found the process enjoyable and showed the tendency to continue doing it (Xu et al., 2005); that is, students' positive experiences while interacting and learning with one another strengthen their attitudes toward language learning. In conclusion, educational environments and interpersonal relationships, including teacher-student and student-student relationships, profoundly shape language learners' attitudes. Supportive teachers directly influence students' engagement and learning outcomes. Peers also play a vital role, affecting each other positively when a collaborative and interactive classroom environment is created by their teachers.

2.3. Artificial Intelligence

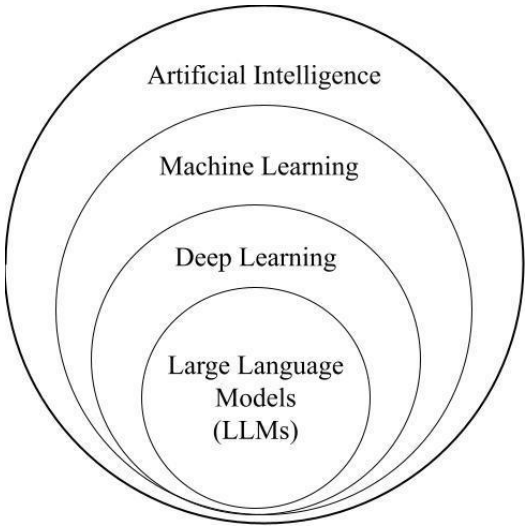
Artificial Intelligence (AI) is the ability of machines and/or computer systems to simulate and conduct tasks that normally require human intelligence (Li, 2017). Among these tasks, there are cognitive abilities such as reasoning, learning new information and behaviour, and solving problems. AI utilizes machine-learning algorithms for machines to apply certain cognitive abilities and fulfil tasks (Ahuerma, 2022). AI developers aim at developing computers and machines that have cognitive abilities, learning, adaptation, and decision-making capabilities like human intelligence.

Development of AI has been shaped by various milestones and important developments in technology. The origins of AI can be traced to philosophy, literature, and imagination. The earliest inventions in electronics and engineering had affected the development of AI. For example, the robot drawings of Leonardo Da Vinci pioneered the innovations in robotic surgery (Buchanan, 2005). In 1950, Alan Turing, also the inventor of general-purpose computers, developed the Turing Test in order to determine whether machines display human-like intelligence and laid the foundations of AI (Copeland & Proudfoot, 2007). The official birth of AI occurred with the

Dartmouth Conference held in 1956. Pioneers like John McCarthy, Marvin Minsky, Nathaniel Rochester, and Claude Shannon discussed the notion of artificial intelligence and commenced their research in the field (McCarthy et al., 2006). Towards the end of the 1950s and the beginning of the 1960s, AI researchers gained some accomplishments, like machines being able to play chess and to prove mathematical theorems (Bleakley, 2020). However, some overly positive estimations were also done in those years. In the late 1970s and beginning of 1980s, a period named "AI Winter" was experienced due to not fulfilling expectations and lack of funding, although there were great advancements in AI research, which led to the ceasing or slowing of many related projects (Toosi et al., 2021). At the end of the 1980s, AI research was resuscitated through expert systems, that is, the computer programs providing expertise in certain knowledge areas used in fields such as medicine, engineering, and finance (Muthukrishnan et al., 2020). Today AI is commonly used and integrated into various sectors such as health, education, and many others.

Large Language Models (LLMs) are a sub-branch of machine learning and artificial intelligence fields, which are state-of-the-art artificial intelligence systems that are able to process and generate texts with coherent communication (y Arcas, 2022). LLMs utilize provided training data and generate completely new content similar to them. It is used for developing models that can generate texts, images, audio, video, and other media types. Widely known and used examples of LLMs include ChatGPT by OpenAI, Gemini by Google, and Claude by Anthropic. These models are capable of generating meaningful texts as responses to user prompts. They are prevalently used for different areas such as copywriting, customer service, translation, education, and so on. A different kind of example for LLMs commonly used today is DALL-E, a model capable of generating high-quality and original images according to textual descriptions provided by users. It is also developed by OpenAI and widely benefits the fields of arts, advertisement, design, and entertainment. LLM is a branch of AI technology that is developing fast and has a profound impact on content creation and creative processes. Along with the advancements in machine learning and artificial intelligence, the influence and usage areas of LLMs are also expanding.

Figure 4. The Field of Artificial Intelligence in Layers



ChatGPT is a large language model built by OpenAI. It is an advanced AI model trained on massive datasets to be able to understand and generate human-like textual and auditory responses. The model is known for its advanced natural language processing (NLP) capabilities, which enable human-like interactions. It is still being trained and developed while simultaneously utilized by millions of users, demonstrating diverse applications in different sectors, including education.

The main key feature of ChatGPT is that it is a conversational AI that serves as a chatbot, a virtual assistant, and even as a foreign language instructor due to its ability to engage in natural dialogues. Users can type their prompts and get textual responses from ChatGPT or go even further and use the voice mode, which allows them to interact with the generative AI model by speaking. This mode provides users with natural, real-time voice conversations by using speech-to-text and text-to-speech technology. In this mode, the model is integrated with an advanced automatic speech recognition (ASR) technology to perceive and analyse users' voice prompts, text-to-speech (TTS) configuration, and camera access so accurately and instantaneously that it is even able to provide support to visually impaired users (Kuzdeuov et al., 2024).

2.3.1. AI and Language Learning

AI technologies, especially large language models, have significantly shaped various sectors, with education being one of the most impacted. The impact of technology on the field of education is observed in various dimensions. ChatGPT First and foremost,

LLMs can offer individualized learning experiences adjusted to learners' learning pace and styles. For example, in a recent study, Jauhiainen and Guerra (2023) examined the use of conversational AI in primary school education, with the participation of 110 students aged 8-14 years old. The students engaged in test lessons using laptops, during which an AI model, ChatGPT 3.5, was employed to create and modify content, text, figures, and exercises. They found that AI is capable of personifying students' learning materials, and it has positive effects on learner motivation and learning outcomes. The students found the materials prepared by ChatGPT more engaging and supportive for their learning processes. The study has shown that AI models can improve learners' learning processes by offering individualized learning materials (Jauhiainen & Guerra, 2023).

LLMs can also be used to transform traditional teaching methods. In an experimental study by Leiker (2023), researchers explored the impact of AI-generated synthetic learning videos on education. 83 learners participated in two micro-learning sessions. The learning videos generated using traditional methods and the ones generated using Dall-E 2 were compared by the participants in these sessions. The findings revealed that AI-generated videos can be alternatives to traditionally generated videos in education (Leiker et al., 2023).

AI advancements enable the development of innovative teaching strategies in education. Using this technology, teachers can personalize their students' learning experiences, create interactive content, and make adaptive assessments. Hence, it has the potential to increase student participation and strengthen knowledge retention. In a 2023 review, it was examined how generative AI can strengthen teaching strategies. The research has shown that AI's ability to personalize course content and create interactive content can make students' learning processes more engaging. This also has the potential to increase efficiency in education by supporting teachers' lesson planning and evaluation processes (Kadaruddin, 2023).

Whereas offering opportunities, conversational AI also brings a number of challenges with its prevalent use in educational settings. An experimental study investigated the impact of AI models on learning efficacy in academic reading, revealing that excessive reliance on AI can result in adverse academic outcomes. In the study, it was observed that completely relying on AI in writing tasks reduced learners' writing accuracy by 25 percent; on the other hand, the summarization tasks done with the help of AI have

shown an increase in both the quality and accuracy of outcome (Ju, 2023). These findings demonstrate the dangers of complete dependence on AI while also showing using it as a supportive tool can be beneficial for educational purposes.

Revolutionizing the field of education, AI offers powerful tools to transform the process of foreign language learning. The use of AI in language learning has made learning processes more effective, personalized, and accessible. AI-assisted language learning can be categorized into various applications such as mobile applications, conversational chatbots, assignment grading bots, and speech recognition.

AI technologies are prevalently used in mobile language learning applications. These applications provide users with advantages like immediate feedback, personifying the learning process, and increasing motivation. In a recent study, Getman et al. (2023) employed an AI-assisted language learning application for enhancing young learners' pronunciation training process. The results of the study revealed that the AI-assisted application made language learning more fun and engaging and improved learning outcomes.

Large language models (LLMs) can be used by learners to get feedback, and interactive writing and speaking practice. Conversational chatbots, such as ChatGPT, could help learners improve their foreign language skills and also give feedback to teachers on learners' progress. In a study conducted with 314 Korean EFL students aged 10-15, the participants performed three speaking tasks using a task-based AI chatbot, and it has been found that practicing with AI provides a high level of interaction and increases the motivation for language learning (Yang et al., 2022). Similarly, in another study investigating the effect of the interaction with AI chatbots on vocabulary learning, 53 Korean EFL primary school students attended two sessions where they received graduated assistance from the AI tool. The findings suggest that AI-assisted systems enable learners to improve their vocabulary knowledge significantly. Moreover, they were also found to be effective in offering diagnostic information regarding learners' vocabulary learning (Chang et al., 2023). The findings of recent research are continuing to support the benefits of using chatbots powered by AI in the language learning process.

Table 5. A Summary of Key Features of ChatGPT for ELT

No.	Key features of ChatGPT-4o for ELT
1	Analyzing grammar, vocabulary, and context
2	Provide excellent real-time feedback for language acquisition
3	Tailor responses to individual students' academic ability and learning styles
4	Generate summaries, outlines, quizzes, conversation prompts, reading passages, and other interactive activities
5	Mimic authentic, human-like conversations
6	Create more opportunities for engaging learning sessions and enhance interaction between learners and AI
7	Enable teachers and students to overcome communication barriers, provide access to a variety of linguistic resources, and create a more welcoming learning atmosphere for multilingual learners
8	Allow students to practice speaking English in varied circumstances, get immediate feedback, and learn to recognize and react to non-verbal signals in real time

Source: Pang et al., 2024, p. 7

Another application of AI tools in EFL instruction involves the use of generative AI for the automatic assessment of student assignments. Lin and Chang (2020) examined the effectiveness of an AI-powered chatbot in improving students' writing proficiency. The students engaged with the chatbot while drafting argumentative essays and used it to refine the feedback they provided during peer review. Some participants also shared reflections upon completing the process. The findings indicated that integrating the AI chatbot into the essay writing process supported peer review and contributed to improved writing performance (Lin & Chang, 2020). Another study by Dai and her colleagues (2023) explored the effectiveness of ChatGPT in providing feedback to students and enhancing their learning experience. The researchers evaluated the feedback given by ChatGPT on student papers and compared it with feedback from an actual instructor. The results indicated that ChatGPT provided more detailed, coherent, and fluent feedback on student assignments than the instructor. Additionally, the instructor agreed with the feedback generated by the chatbot (Dai et al., 2023).

Automatic Speech Recognition (ASR), which is a recent technology that processes human speech and turns it into textual data, can be made use of for the purpose of language learning. ASR, commonly integrated into AI language models in order for

chatbots to interact with users via speech, can textualize and analyse learners' speech while they are speaking the target language. As it works together with AI, it is also able to provide linguistic feedback when responding. An experimental study by Liu and his colleagues (2022) investigated learners' perceptions towards ASR technology with 249 students whose majors were English. The participants used ASR for speaking practice and filled out questionnaires and reflective journals throughout the process. The findings demonstrate that the participants found ASR technology beneficial in oral practice and useful for students to gain an understanding of their speaking level (Liu et al., 2022). In light of these and numerous other studies, it can be asserted that AI can easily and effectively be incorporated into foreign language classrooms and learning processes, achieving great enhancements in learning outcomes.

2.4. Relevant Studies

Since AI chatbots have been released and are developing day by day, using AI for foreign language speaking practice has attracted significant attention in the academic fields of linguistics and language teaching. Researchers have been investigating the impact of the integration of AI into the process of improving speaking skills and learners' attitudes toward using AI to learn in terms of various aspects. Recent research can be categorized into two according to their purposes: the ones exploring its effect on the language students' affective filters, specifically anxiety, and the ones focusing on learners' attitudes toward the use of AI for learning, specifically foreign language learning.

Shazly (2021) explored the AI integration's role for foreign language speaking practice in the foreign language anxiety management among 48 undergraduate Egyptian EFL learners. In the study, the researchers embraced a quasi-experimental design, using pre- and post-testing to measure learners' levels of speaking anxiety using Horwitz's 33-item FLCAS. During the intervention, the participants were engaged in role-plays including real life social and academic situations using AI. The results of the study revealed that AI chatbots are auspicious for improving speaking proficiency; however, further investigation is needed regarding their impact on learners' speaking anxieties.

In another study, Zhang and her colleagues (2024) researched the effect of Lora, an AI-speaking assistant, and examined how Chinese EFL students' enjoyment, anxiety levels, and willingness to speak in a second language were influenced. 131 students

were assigned to either an intervention group or a comparison group (EG, n=65; CG, n=66). The students of the experimental group practiced speaking English for six weeks using the AI assistant. Results demonstrated that the use of AI models to practice enhanced students' enjoyment and willingness to communicate and also helped to mitigate their anxiety. The participants of the experimental group demonstrated significantly lower levels of communication anxiety during their interactions with AI than when interacting in classrooms.

Wang and colleagues (2024) explored how various conversational GenAI chatbots affect EFL learners' willingness to communicate (WTC), foreign language speaking anxiety (FLSA), self-perceived communicative competence (SPCC), and speaking performances. They recruited three groups of Chinese undergraduate students as two experimental groups and a control group (EG_1, n=33; EG_2, n=33; CG, n=33). The control group practiced their speaking during in-class activities with their teachers and peers, whereas the first experimental group practiced with Typebot, a text- and voice-based GenAI chatbot, and the second experimental group did the same with a different chatbot called D-ID Agent, which not only features text and voice conversations but also offers human-like avatars. Quantitative analysis of the data obtained from the participants revealed that, compared to CG, participants in EG_2 demonstrated a significant increase in WTC and SPCC, and a significant reduction in their FLSA levels, indicating that GenAI chatbots can be adopted to alleviate the affective factors during foreign language production.

A study by Kim and her colleagues (2021) also looked at whether using AI chatbots improves learners' speaking performance. The participants were 110 university students divided into three different groups: a face-to-face speaking practice group (n=38), AI text-chatting group (n=35), and AI voice-chatting group (n=37). The participants were then assigned three speaking tasks in which they described a picture, responded to questions, and expressed their opinions. According to the findings, it was shown that both AI groups improved their speaking performances after the experiment, and the researchers also noted that participants were less anxious when interacting with the AI chatbots than they were with their peers.

Chan and Hu (2023) explored university students' perceptions of generative AI, like ChatGPT, and their use in higher education in terms of students' familiarity, willingness to engage, benefits, challenges, and integration. 399 university students

from Hong Kong were administered an online questionnaire that consisted of closed and open-ended questions, which covered topics like students' knowledge of GenAI, ChatGPT, how AI technologies are being incorporated into educational contexts, and how this affects students' learning experiences. The results from analyses on the questionnaire suggested that students expressed favourable perceptions of using GenAI in educational settings due to the personalized learning opportunities and the help with writing and brainstorming that GenAI models offer.

A study by Belda-Medina and Calvo-Ferrer (2022) aimed to explore tertiary-level language learners' knowledge, level of satisfaction, and perceptions related to the application of conversational AI in language learning. The researchers recruited 176 undergraduate students who are from Spain (n=115) and Poland (n=61), and the participants interacted with three different conversational AI models for a duration of four weeks outside the classroom. They found that students held generally positive perceptions on the integration of such chatbots into language education, particularly in terms of perceived ease of use and attitudes, concluding that language teachers should be informed about AI chatbots and their integration in language teaching contexts.

Another attitude-focused study was conducted by Baharloo and Baghi (2024). The researchers examined the impact of AI-assisted learning activities on speaking proficiency using a quasi-experimental study design. The study involved 40 Iranian EFL students, who were assigned either to experimental or control groups, each having a sample size of 20. Participants in the experimental group utilized two conversational AI models (Gliglish, Sayra) to complete speaking activities in English for one academic semester. To evaluate speaking skills, pretest and post-test instruments were used as a part of the quantitative data collection process, while qualitative data were gathered through interviews to explore students' perceptions of AI use. The results showed that the experimental group's English-speaking skills improved significantly more than those of the control group. Concerning learner attitudes, the researchers found participants of the experimental group held positive views about AI-assisted learning and demonstrated increased motivation and engagement.

2.5. Literature Gap and Contribution of the Study

Although there is a growing interest in AI-related research in foreign language speaking anxiety and learner attitude, several gaps remain unaddressed.

To begin with, most studies in the existing literature have been conducted with university students from various countries, such as China (Zhang et al., 2024; Wang et al., 2024), Egypt (Shazly, 2021), Iran (Baharloo & Baghi, 2024), Poland and Spain (Belda-Medina & Calvo-Ferrer, 2022). However, research focusing specifically on Turkish EFL students—particularly those enrolled in English preparatory programs at universities—remains limited. This is a noteworthy gap, as students in such programs often face unique cultural and educational challenges that may shape their levels of speaking anxiety and their attitudes toward the integration of AI tools. Furthermore, these students are frequently required to participate in English-medium classes and take high-stakes language proficiency tests, including speaking exams, which can intensify their anxiety levels.

Secondly, while previous research has investigated the impact of AI chatbots on foreign language speaking anxiety (e.g., Shazly, 2021; Wang et al., 2024) and learners' attitudes towards AI-assisted education (e.g., Chan & Hu, 2023), limited studies have analysed both aspects simultaneously. Given that anxiety and attitude are closely interrelated and can significantly influence speaking performance and learners' willingness to communicate, investigating them together can yield a more comprehensive understanding of students' affective experiences during AI-assisted language learning.

This study seeks to address these gaps by examining the effects of AI use on both foreign language speaking anxiety and attitudes toward AI-assisted speaking practice among Turkish university preparatory students. In doing so, it contributes to the growing literature on AI integration in EFL contexts, particularly within Türkiye. By simultaneously focusing on both affective dimensions—anxiety and attitude—the study offers a more holistic perspective on how AI chatbots influence students' emotional engagement and participation in foreign language speaking tasks.

3. METHODOLOGY

3.1. Research Design

This study adopted a quantitative approach using a quasi-experimental framework to examine the effects of AI-assisted speaking practice on foreign language speaking anxiety and to explore language learners' attitudes toward integrating AI in foreign language teaching. Two groups were formed as AI-assisted practice group and human-assisted practice group. To compare the effectiveness of AI-assisted and human-assisted speaking practices, both pre-intervention and post-intervention tests were utilized. This design enabled the researchers to examine both within-group changes in speaking anxiety and between-group differences in anxiety reduction.

The independent variable was the type of speaking practice (AI-assisted vs. human-assisted), while the dependent variable was the level of foreign language speaking anxiety. In addition to quantitative measures of anxiety, a separate questionnaire was administered to explore students' attitudes toward AI-assisted speaking practice. The quasi-experimental design allowed the researchers to obtain valid and meaningful findings despite the absence of random participant assignment.

3.2. Study Context and Participants

The study took place within the English preparatory department of a foundation university in Istanbul, Türkiye. Students enrolled in the university must demonstrate at least a B2 level of English proficiency to begin their departmental studies, as the majority of undergraduate and graduate programs are delivered in English. Each new academic cycle starts with an English proficiency exam where all newly registered students take a two-phase language examination assessing their speaking, writing, listening, and reading skills. Based on their results, students who are required to improve their English proficiency before beginning their departmental courses are placed in level-specific preparatory classes ranging from A1 to B2.

This study focused on students with B1-level proficiency scores. Since the researcher teaches at the institution where the study was conducted, participants were chosen using a convenience-based selection method. Before the semester began, two of the researcher's assigned classes were randomly assigned as the human-assisted and AI-assisted practice groups. The study sample consisted of 28 students with B1-level English proficiency, evenly distributed between the two groups (14 students in each).

Table 6. Gender Distribution of the Participants Per Group

AI-practice group		**Human-practice group**	
Female	**Male**	**Female**	**Male**
8	6	6	8

As can be seen in Table 6, there is a difference in gender distribution between the two groups (AI-practice: 8 females, 6 males; Human-practice: 6 females, 8 males) although the total number of students in each group remains the same ($N_{AI\text{-}practice} = N_{Human\text{-}practice} = 14$). Convenience sampling naturally produces such disparities, which can be ignored because gender was not an independent variable of the study. The age distribution of the participants of each group reflects the natural and incidental structure of the pre-existing classes that were selected using the convenience sampling method. The mean age of the participants in both the AI-practice and human-practice groups was 18.6, which indicates a highly comparable age profile across the groups.

3.3. Data Collection Instruments

In the study, the data on students' speaking anxiety and attitudes towards AI supported practice were collected by using questionnaires. The data related to students' speaking anxiety was collected using the Short-Form Foreign Language Speaking Anxiety Scale and data related to their attitudes was collected using the AI-Assisted L2 Learning Attitude Scale.

The first instrument used in the study was the *Foreign Language Classroom Anxiety Scale* (FLCAS), originally developed by Horwitz, Horwitz, and Cope (1986). The

FLCAS is one of the most widely used instruments for assessing foreign language anxiety and comprises 33 items, each measured on a scale consisting of five response levels commonly used in Likert-based assessments, with options spanning from complete disagreement (1) to complete agreement (5). It evaluates several key dimensions of language learning anxiety, covering aspects such as anxiety during communication and testing and fear of being judged negatively.

Aligning with this study's purposes, the short form of the scale—*Short-Form Foreign Language Classroom Anxiety Scale* (S-FLCAS)—was employed. The S-FLCAS is a unidimensional measure specifically targeting speaking anxiety in foreign language learning contexts. Unlike the original 33-item scale, this version includes only eight items, which were selected by MacIntyre (1992) during his doctoral research. Since its development, the S-FLCAS has been widely adopted in empirical research (e.g., Dewaele & MacIntyre, 2014), reflecting its growing recognition as a practical and efficient alternative to the full scale.

The S-FLCAS has been shown to possess strong psychometric properties. The scale consists of 8 Likert-scale items, including items like "*I can feel my heart pounding when I'm going to be called on in FL class."* and "*I start to panic when I have to speak without preparation in FL class.*". Validation studies have confirmed that all eight items load onto a single latent factor, treating foreign language anxiety as a general construct (Botes et al., 2022). S-FLCAS was found to be a reliable and valid instrument. The Cronbach's Alpha ($\alpha = 0.891$) and McDonald's Omega ($\omega = 0.893$) values of the scale demonstrate that it has high internal consistency (Botes et al., 2022).

The S-FLCAS was selected as the primary data collection tool in this study rather than Horwitz's original 33-item scale (1986). This selection was made due to the feasibility of administration for the researcher and convenience for the participants, as the scale comprises only eight items. This brevity not only conserves time but also mitigates participant fatigue, thereby reducing the likelihood of distractions. Such conditions foster a more positive engagement with the data collection process, resulting in more reliable responses. Additionally, the use of shorter questionnaires proves particularly advantageous for researchers working within classroom environments, where the time available for data collection is often constrained by class schedules. This tool was used to assess participants in both AI-practice and human-practice groups before and after the intervention. It is a prevalently used and validated instrument and assesses foreign

language learners' anxiety levels in terms of speaking in the foreign language in classroom settings.

The second data collection instrument was also a Likert-type questionnaire: AI-Assisted L2 Learning Attitude Scale for Chinese College Students (AL2AS-CCS). Although the scale's name includes the phrase "Chinese College Students", this does not imply that it is exclusively applicable to students of Chinese descent. The items of the questionnaire are general statements that can be administered to the college students in different contexts. Wu and his colleagues (2024) suggested that the scale's validity could be examined in various settings and that it could be used to gauge learners' overall attitudes toward AI-assisted foreign language learning. Additionally, both China and Türkiye exhibit comparable contexts concerning English language education. In each country, English is learned as a foreign language, and learners in both countries consider English language learning as critically important for enhancing their academic and employment opportunities. Due to these reasons, the AL2AS-CCS was chosen to be employed to gather data within the scope of this research.

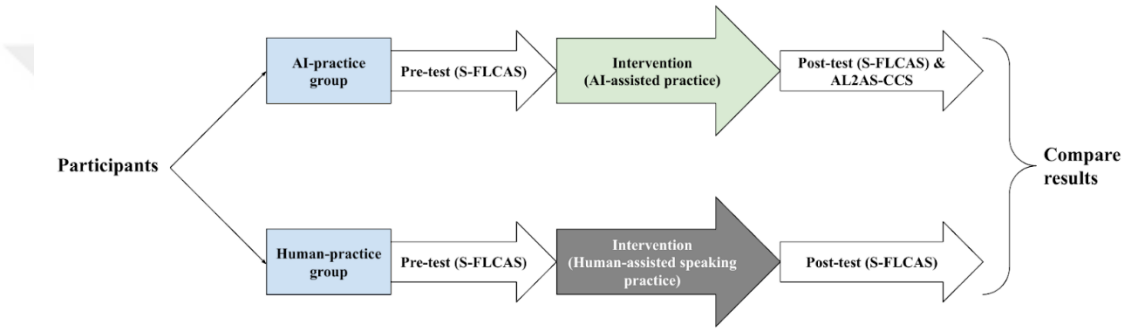
This scale was exclusively administered as a post-test to the AI-practice group to assess their attitudes regarding the integration of AI into their second/foreign language learning process. AL2AS-CCS was developed and validated by Wu and colleagues (2024). It was specifically designed to measure learners' attitudes toward incorporating AI technologies into second or additional language education. Its focus on college students further enhances its relevance to our study's context, making it an ideal instrument for our research.

The scale has two subdimensions, cognitive and behavioural, with a total of 12 items. The items 1 to 6 measure cognitive attitudes, whereas the items 7 to 12 measure behavioural attitudes. The cognitive dimension measures the students' beliefs regarding the benefits and necessity of AI use in language learning (e.g., item 4: To improve L2 proficiency, I believe it's worthwhile to learn to use AI.), while the behavioral dimension measures the will and tendency of learners to actually use the AI tools for language learning (e.g., item 8: If there is a club related to AI-assisted L2 learning, I would like to join.). A Cronbach's alpha value of 0.881 was obtained, indicating high internal consistency (Wu et al., 2024).

3.4. Data Collection Process

The study included two different groups: the AI-practice group and the human-practice group. The AI practice group participants used ChatGPT's voice mode to complete weekly structured English-speaking tasks for five weeks. The human group, on the other hand, completed the same weekly structured English-speaking tasks in class with their human peers. Both groups were provided with the same content (instructions) and materials (question sets) during the intervention.

Figure 5. The Design of the Study

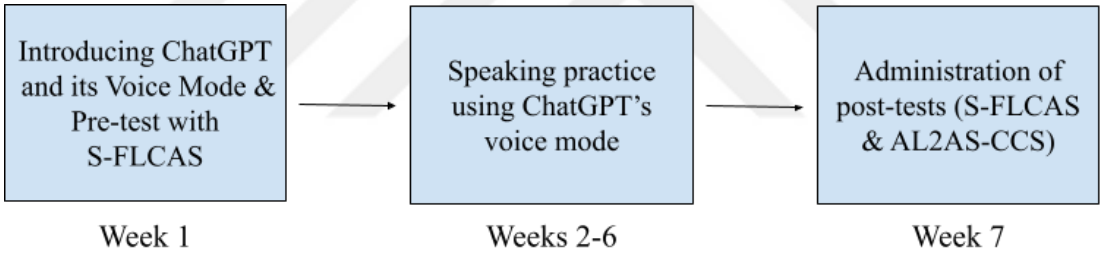


3.4.1. Intervention

The data collection process for the AI-practice group lasted for 7 weeks, including the administration of pre- and post-test and 5-week intervention. At the beginning of the data collection phase, in Week 1, the AI-practice group's participants completed the S-FLCAS, along with some questions for demographic data such as their age and gender, as a pre-test to measure their speaking anxiety levels. Following the pre-test, the researcher demonstrated how to download ChatGPT app on their phones, create an account, adjust the settings, and start the voice mode; showing each step on the smartboard. Following the demonstration, the students carried out these steps on their own devices, and the researcher went around the classroom to provide assistance to those who experienced difficulties. The students had previously been asked to bring headphones for the session; however, the researcher brought a few extra pairs to make sure that students who had forgotten theirs could still participate. Once the students had successfully started the voice mode, they started to explore ChatGPT in any language they wished without any specific prompt. Afterwards, the researcher shared

the designated prompt for the demo session with all students via group chat and asked them to copy and paste it into ChatGPT then restart the voice mode. Students continued to interact with the AI, after completing a mini-demo of the intervention. However, it became apparent during the in-class demo that background noise and overlapping voices created a cacophony that was not suitable for speaking practice. Therefore, the students and the researcher together decided to continue the AI-assisted speaking activities outside of the classroom during the intervention period. Participants assigned to the AI-based practice group began engaging in speaking tasks to practice English speaking with ChatGPT's voice mode, using the prompts provided by the researcher to tailor their experience according to their course syllabus. The prompt remained the same throughout the intervention (weeks 2 to 6), while the question sets following the prompt changed each week to align with B1 level objectives and learning outcomes in terms of target grammar and vocabulary.

Figure 6. Data Collection Process for the AI-practice Group



The prompt given to the AI model is as follows:

"*You are speaking with an A2-level English language learner who is currently studying B1 level. Each week, the learner will share a set of questions for speaking practice, focusing on that week's grammar and vocabulary. The learner will signal their readiness by saying, "I'm ready." Your job is to ask the questions one by one, wait for their response, and give short, simple feedback on target grammar and vocabulary only if needed. Speak slowly, using A2-level vocabulary in your feedback. Be friendly, encouraging, and guide the learner through their practice. Focus on helping them improve their speaking skills through positive reinforcement and gentle corrections.*"

The prompt was specifically designed with the aim of providing the most convenient and effective experience to the participants. The design is learner-cantered, taking students' current language level (A2) when providing responses. It creates a speaking environment suitable for their comprehension and production skills. The question sets included target grammar and vocabulary aligned with the curriculum of the preparatory program. The prompt for ChatGPT to use A2-level vocabulary and grammar adheres to Krashen's (1985) comprehensible input hypothesis (*i*+1). This indicates that the feedback provided by the AI model is comprehensible to the learners at their linguistic level. Furthermore, the prompt specifies that the model should articulate responses slowly. This approach enhances learners' ability to receive and comprehend the input effectively while also alleviating anxiety and fostering confidence in their communicative abilities.

Once the AI model had received the prompt, students copied and pasted the question sets that their instructor had provided. The question sets were created by the Materials Development Office of the English Preparatory Program. These sets included open-ended questions that are specifically designed to comply with the weekly curriculum, ensuring coherence and continuity in instruction. Each set incorporates targeted grammatical structures and vocabulary items, which are selected to reinforce students' language learning.

The question sets are designed to encourage students to engage in discussions about real-life scenarios, thereby fostering the effective development of communication skills among learners. The question sets used in this study are provided in Appendix 5. Below are two sample sets:

(Week 2)

Have you ever visited another country?

If "yes": What year did you go there?
Which city or cities did you visit?
Did you travel alone or with someone?
What kind of activities did you do there?
How many days did you stay?
Did you buy anything special?
What did you like most about the trip?
What do you usually take with you when you go on a trip?

(Week 3)

Are you in a relationship now?

If "yes": How long have you been together?

How did you two become close?

When was the first time you saw him/her?

Has he/she ever given you a meaningful gift?

If "yes": What was the gift? Did you like it?

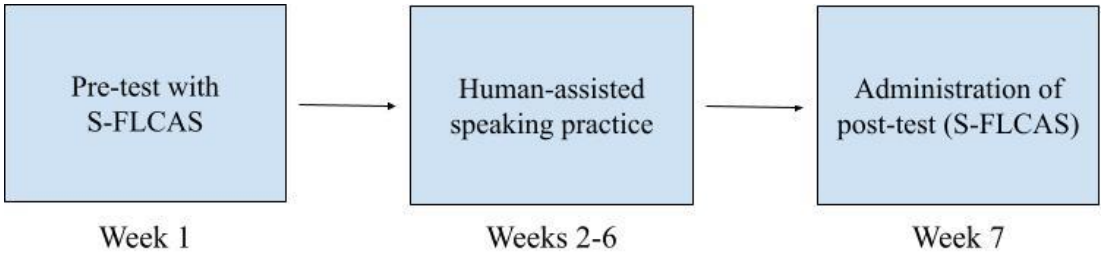
What is your happiest memory with your partner so far?

In the Week 2 question sets, the grammatical focus is the past simple tense, whereas in Week 3, the present perfect simple tense was predominantly covered. During the intervention, ChatGPT employed an adaptive approach. Each session began with the AI asking the first question from that week's question set. Based on the student's response, the AI decided whether to ask follow-up questions for further elaboration or to proceed to the next question or question set. This approach was particularly beneficial for students, as it provided personalized practice sessions that helped reduce their anxiety by allowing them to demonstrate their ability to engage with follow-up questions.

Following the five-week intervention period, students were given post-tests to assess the effects of AI-assisted practice on their anxiety levels and to determine their attitudes towards using AI in language learning. All participants completed the S-FLCAS as a post-test. Furthermore, the AI-practice group completed the AL2AS-CCS to measure their attitudes. The post-tests were conducted during a class hour, and the instructor made sure to assist every participant during administration, giving adequate time for filling out the questionnaires and clarifying any uncertainties.

In the human-practice group, the same procedure of data collection was followed.

Figure 7. Data Collection Process for the Human-Practice Group



Although this group did not practice speaking with ChatGPT, they were also provided the same weekly question sets. They practiced these questions with their peers during in-class speaking activities. In this research, the human-practice group functioned as the control group, enabling researchers to systematically compare the effectiveness of AI-assisted speaking practice against traditional in-class speaking activities. This comparison specifically focused on the impact of AI-assisted practice in reducing foreign language speaking anxiety among learners. By analysing the differences in anxiety levels between the two approaches, the researchers aimed to gain valuable insights into the potential benefits of integrating AI technologies into foreign language education.

3.4.2. Ethical Considerations

Prior to data collection, the Research Ethics Committee at Istanbul Bilgi University granted approval for the research prior to data collection (Approval Number: 2024-20101-216, Date: 28.01.2025). Participation in the study was voluntary, and informed consent was obtained from all participants. Students were informed about the purpose of the research, their right to withdraw at any time, and the confidentiality of their responses. Anonymity was maintained throughout the study, and no identifying information was collected or reported.

3.5. Data Analysis

The data collected from pre-tests and post-tests were first processed by coding the responses to facilitate statistical analysis. The responses from both scales were converted into numerical data.

The descriptive statistics (means, standard deviations, and frequency distributions) were calculated for each variable. The histograms and descriptive statistics were taken into account when analysing the normality of the continuous variables.

Table 7. Normality Test Results of Pre- and Post-test S-FLCAS of AI-practice and Human-practice Groups

Group	FLCAS	Shapiro-Wilk			Skewness	Kurtosis
		Statistic	df	p		
AI-practice	Pre-test	0.929	14	0.296	-0.321	-0.860
	Post-test	0.930	14	0.305	0.758	0.0310
Human-practice	Pre-test	0.943	14	0.463	0.837	0.682
	Post-test	0.939	14	0.409	0.808	0.160

Table 7 presents the results of the Shapiro-Wilk normality tests, skewness and kurtosis values for the S-FLCAS administered to AI-assisted practice and human-practice groups. The Shapiro-Wilk test was conducted to determine whether the S-FLCAS scores in the groups follow a normal distribution. The null hypothesis (H_0) of the test states that data is normally distributed. A p-value that is higher than 0.05 means that the null hypothesis is not rejected; thus, data is not significantly deviated from normality. The Shapiro-Wilk test results for the AI-practice group and the human-practice group are shown in the table above. Since all p-values are greater than 0.05, null hypothesis of normality is not rejected for any given conditions. This suggests that S-FLCAS scores for both groups, in both pre- and post-intervention phases, follow a normal distribution. In addition to the Shapiro-Wilk test, skewness and kurtosis values were calculated to assess normality even further. Skewness values between -1 and +1 show approximately symmetrical distributions whereas kurtosis values between -2 and +2 show no significant deviation from normality. As shown in Table 7, all skewness and kurtosis values are within the acceptable range, which supports the normality assumption.

To assess the impact of AI-assisted speaking practice on foreign language speaking anxiety, paired samples t-tests were conducted separately for each group on the S-FLCAS scores. This analysis aimed to examine whether there was a significant difference within each group before and after the intervention. To compare the anxiety levels of the AI-practice and human-practice groups following the completion of the intervention, an independent sample t-test was done on post-intervention S-FLCAS results. This approach allowed for the evaluation of whether the AI-practice group,

which engaged in AI-assisted speaking practice, had significantly lower speaking anxiety compared to the human-assisted practice group, which practiced with peers.

For AL2AS-CCS, which was administered only to the AI-practice group, descriptive statistics were used to analyse participants' attitudes toward AI-assisted language learning. Additionally, a paired-sample t-test was conducted to determine if a significant difference existed between the cognitive and behavioural components of AI attitudes.

All statistical analyses were conducted using Jamovi, with a significance level set at $p < 0.05$.

4. RESULTS

In this section, the results of the analyses will be presented. The Short-Form Foreign Language Classroom Speaking Anxiety (S-FLCAS) and the AI-Assisted Language Learning Attitude Scale (AL2AS) were administered during the data collection process. This chapter will cover the results obtained from the analyses of these two scales. The findings will be interpreted with reference to the study's research questions.

4.1. Effects of AI-Assisted Speaking Practice on Foreign Language Speaking Anxiety

In order to be able to find out the answer to this question, various analyses, including descriptive analysis, independent samples t-test, and paired samples t-test, were conducted.

Table 8. The Descriptive Statistics for the S-FLCAS Scores in AI-Practice and Human-Practice Groups

Group	FLCAS	N	Mean	Median	Sd	Minimum	Maximum
AI-practice	Pre-test	14	23.1	22.0	4.87	15	30
	Post-test	14	17.3	16.0	5.17	10	28
Human-practice	Pre-test	14	21.4	20.5	5.18	14	33
	Post-test	14	22.2	21.0	3.96	17	31

Table 8 presents the descriptive statistics for the S-FLCAS scores in both the AI-practice and human-practice groups. The data include the mean, median, standard deviation, and minimum-maximum values for pre-intervention and post-intervention scores.

Before the intervention, the AI-practice group had a slightly higher mean S-FLCAS score (M = 23.1, SD = 4.87) compared to the human-practice group (M = 21.4, SD =

5.18), which means that participants in the AI-practice group exhibited higher levels of anxiety. The median scores of the AI-practice group (Mdn = 22) and the human-practice group (Mdn = 20.5) also support this suggestion.

After the intervention, the AI-practice group's mean S-FLCAS score decreased significantly to 17.3 (SD = 5.17), which indicates a reduction in their anxiety levels. The median score also dropped from 22.0 to 16.0, suggesting a general downward shift in anxiety among participants who practiced speaking with AI. Minimum S-FLCAS score decreased to 10, while the maximum remained stable at 28. This indicates that some students showed significant anxiety reductions, but others retained moderate anxiety levels.

To investigate whether students' foreign language speaking anxiety changed after five weeks of intervention in the control group, a paired samples t-test has been done using the pre- and post-intervention S-FLCAS scores. The results are presented in Table 9.

Table 9. Descriptive Statistics of Pre- and Post-intervention Scores of the Human-Practice Group

Human-practice group	N	Mean	Median	SD	SE
Pre-test S-FLCAS	14	21.4	20.5	5.18	1.39
Post-test S-FLCAS	14	22.2	21.0	3.96	1.06

The descriptive statistics for the human-practice group's pre-test and post-test S-FLCAS scores are shown in Table 9. The human-practice group's pre-test mean was 21.4, while the post-test average reached 22.2, showing a slight increase. However, the standard deviation in the post-test (SD = 3.96) is lower than the pre-test (SD = 5.18). This indicates a reduction in variability between participants' anxiety levels.

To investigate whether students' foreign language speaking anxiety changed after five weeks of intervention in the human-practice group, an analysis comparing S-FLCAS results before and after the intervention was performed using a paired-samples t-test. The results are presented in Table 10.

Table 10. Paired-samples T-Test Results of Pre-test and Post-test S-FLCAS Scores of the Human-Practice Group

						95% Confidence Interval			
	statistic	**df**	**p**	**Mean difference**	**SE difference**	**Lower**	**Upper**		**Effect size**
Student's t	-0.551	13.0	0.591	-0.857	1.55	-4.22	2.50	Cohen's d	-0.147

The paired sample t-test results for the human-practice group's pre-test and post-test results are shown in Table 10. The results indicated an absence of statistically significant difference in foreign language speaking anxiety scores between pre-test (M = 21.4, SD = 5.18) and post-test (M = 22.2, SD = 3.96, t(13) = -0.551, p = 0.591). The mean difference was -0.857 with a 95% confidence interval ranging from -4.22 to 2.50. Since this confidence interval includes zero, it suggests that any observed difference may have occurred by chance. Also, Cohen's d was found -0.147 which indicates a negligible effect size, that is, the slight increase in anxiety levels of the human-practice group was not meaningful in practical terms.

An additional paired-sample t-test was also conducted to examine changes in S-FLCAS results before and after the intervention among students in the AI-practice group to find out the impact of AI-assisted speaking practice on students' foreign language speaking anxiety.

Table 11. Descriptive Statistics of the Pre- and Post-test Scores of the AI-practice Group

AI-practice group	N	Mean	Median	SD	SE
Pre-test S-FLCAS	14	23.1	22.0	4.87	1.30
Post-test S-FLCAS	14	17.3	16.0	5.17	1.38

Descriptive statistics for the AI-practice group's pre-test and post-test S-FLCAS scores are displayed in Table 11. AI-assisted practice group's mean anxiety score decreased from 23.1 in the pre-test to 17.3 in the post-test, and this suggests a reduction in foreign language speaking anxiety as a result of the intervention.

Table 12. Paired-samples T-Test Results of the Pre-test and Post-test S-FLCAS Scores of the AI-practice Group

						95% Confidence Interval			
	statistic	**df**	**p**	**Mean difference**	**SE difference**	**Lower**	**Upper**		**Effect size**
Student's t	3.53	13.0	0.004	5.86	1.66	2.28	9.44	Cohen's d	0.945

Table 12 displays the outcomes of the paired-sample t-test comparing pre- and post-intervention scores from the AI-assisted group. The results of the t-test show a statistically significant decrease in S-FLCAS scores from pre-test to post-test ($t(13) = 3.53$, $p = 0.004$). Since the p-value is lower than 0.05, it can be suggested that the decrease in the AI-practice group students' speaking anxiety was statistically significant. The 95% confidence interval (CI = [2.28, 9.44]) suggests that the reduction in their anxiety levels was not due to random variation. The effect size (Cohen's $d = 0.945$) also supports that the impact of the AI assisted speaking intervention was large, which means the observed decrease in anxiety is practically meaningful.

4.2. Comparison of AI-assisted and Human-assisted Speaking Practice in Reducing Foreign Language Speaking Anxiety

To examine whether the AI-practice group and the human-practice group had comparable foreign language speaking anxiety levels before the intervention, descriptive statistics and independent samples t-tests were conducted on pre-test scores of S-FLCAS scores of both groups. Student's t-test and Levene's test were performed so as to assess the equality between the two groups.

Table 13. Homogeneity of Variances Test for Pre-test Scores of the AI-practice and Human-practice Groups

		F	df	df2	p
Pre-test scores of both groups	Levene's	0.00145	1	26	0.970

As it can be seen from Table 13, a Levene's test was conducted to determine whether the assumption of homogeneity of variances was met for the pre-test anxiety scores in the AI-assisted practice and human-practice groups. The results demonstrated that the assumption was not violated ($F(1,26) = 0.00145$, $p = 0.970$), that is, the variances of the two groups were statistically equal. Therefore, Student's t-test results are used for interpretation instead of Welch's t-test.

Table 14. Independent Samples T-Test Results for the Pre-test Anxiety Scores of the AI-practice and Human-practice Groups

						95% Confidence Interval			
	statistic	**df**	**p**	**Mean difference**	**SE difference**	**Lower**	**Upper**		**Effect size**
Student's t	0.940	26.0	0.356	1.79	1.90	-2.12	5.69	Cohen's d	0.355

Table 14 shows the independent samples t-test results of pre-intervention anxiety scores of the AI-practice and human-practice groups. The analysis revealed the two groups did not differ significantly in their pre-test anxiety scores ($t(26) = 0.940$, $p = 0.356$). The mean difference between two groups was 1.79 (SE = 1.90), with a 95% confidence interval of [-2.12, 5.69]. This result indicates that the true difference between the two groups can be within this range including zero. The effect size (Cohen's $d = 0.355$) suggests a small effect size, which means any observed difference in pre-test scores was minor and not practically meaningful.

Also, the descriptive statistics of pre- and post-intervention results of both groups are examined to find out the difference between the groups.

Table 15. Descriptive Statistics of the S-FLCAS Scores in AI-practice and Human-practice Groups

Group	FLCAS	N	Mean	Median	Sd	Minimum	Maximum
AI-practice	Pre-test	14	23.1	22.0	4.87	15	30
	Post-test	14	17.3	16.0	5.17	10	28
Human-practice	Pre-test	14	21.4	20.5	5.18	14	33
	Post-test	14	22.2	21.0	3.96	17	31

The score range was wider in the human-practice group (Min = 14, Max = 33) than the AI-practice group (Min = 15, Max = 30). This indicates that the human-practice group had a more diverse spread of anxiety levels before the study was started.

On the other hand, the human-practice group's mean S-FLCAS score increased slightly from 21.4 to 22.2 (SD = 3.96). The median score remained almost the same (20.5 to 21.0) and minimum and maximum values (Min = 17, Max = 31) suggest that the human-practice group did not experience a notable reduction in speaking anxiety.

The results indicate that both groups had comparable levels of foreign language speaking anxiety before the intervention. Because there was no significant difference in pre-test scores, any observed difference in post-test scores can be attributed to the intervention itself, rather than pre-existing differences between groups. This supports the validity of the post-test comparison as a reliable measure of the impact of AI-assisted speaking practice on learners' anxiety.

Finally, to assess any significant difference in foreign language speaking anxiety between the AI-assisted practice and the human-assisted practice groups after the intervention, an independent samples t-test was conducted using the post-test scores of the S-FLCAS.

Table 16. Homogeneity of Variances Test of Post-test S-FLCAS Scores of AI-practice and Human-practice Groups

	F	**df**	**df2**	**p**
Post scores	0.747	1	26	0.395

Firstly, as shown in Table 16, a Levene's test for equality of variances was conducted to check the assumption of homogeneity of variances. The results showed the assumption was not violated ($F(1,26) = 0.747$, $p = 0.395$) as the p-value was greater than 0.05. Accordingly, a Student's t-test results were used for interpretation.

Table 17. Independent Samples T-Test Results of the Post-test Scores of AI-practice and Human-practice Groups

						95% Confidence Interval	
	Statistic	**df**	**p**	**Mean difference**	**SE difference**	**Lower**	**Upper**
Student's t	-2.83	26.0	0.009	-4.93	1.74	-8.51	-1.35

According to the independent samples t-test of two group's post-test scores shown in Table 17, the results show a statistically significant difference in post-test anxiety scores between AI-assisted practice and human-assisted practice groups ($t(26) = -2.83$, $p = 0.009$). Since p-value is smaller than 0.05, the difference between AI-practice and human-practice groups is statistically significant, which indicates the AI-assisted speaking practice group had significantly lower foreign language anxiety after the intervention compared to the human-based speaking practice group.

The findings of the S-FLCAS demonstrated that both groups started with comparable levels of foreign language speaking anxiety since no significant difference was found between the pre-intervention scores. However, after the intervention, the participants in the AI-practice group showed a significant decrease in their anxiety levels, while the human-practice group did not show any significant change. Also, the post-test scores of two groups were compared and the findings indicated that students of the AI-practice group had significantly lower anxiety scores than the students in the human-practice group. The anxiety-related findings suggest that AI-assisted speaking practice was more effective than traditional human-assisted practice, which refers to peer-based

speaking practice in the context of this study, in reducing foreign language speaking anxiety.

4.3. Students' Attitudes Toward AI-assisted Speaking Practice

The AL2AS-CCS scale was administered to only the AI-assisted practice group in the post-test phase (Week 7) in order to evaluate students' attitudes toward AI-assisted speaking practice. The scale consists of 12 items, 6 of which measure cognitive attitude and the others measuring behavioural attitude. Each item is rated on a 5-point Likert scale ranging from "Totally disagree (1)" to "Totally agree (5)", with higher scores indicating more positive attitudes toward AI-assisted learning. Since the human-practice group did not engage in AI-assisted speaking practice, this scale was not applied to them. The focus was on analysing how students who practiced with ChatGPT perceived their learning experiences.

Descriptive statistics were computed for both the cognitive component (cc) and the behavioural component (bc) of the AL2AS-CCS scale to examine the AI-assisted practice group participants' attitudes.

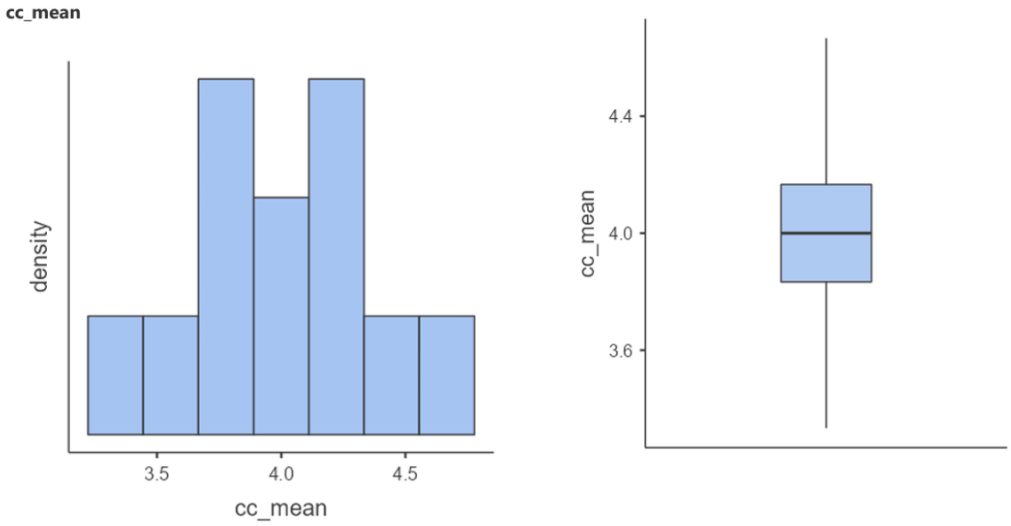
Table 18. Descriptive Statistics of AL2AS-CCS Administered to the AI-Practice Group

	Cognitive component	Behavioural component
N	12	12
Missing	2	2
Mean	4.01	3.76
Median	4.00	3.83
Standard deviation	0.359	0.543
Minimum	3.33	2.33
Maximum	4.67	4.33

Skewness	0.0686	-1.86
Std. error skewness	0.637	0.637
Kurtosis	0.459	4.16
Std. error kurtosis	1.23	1.23

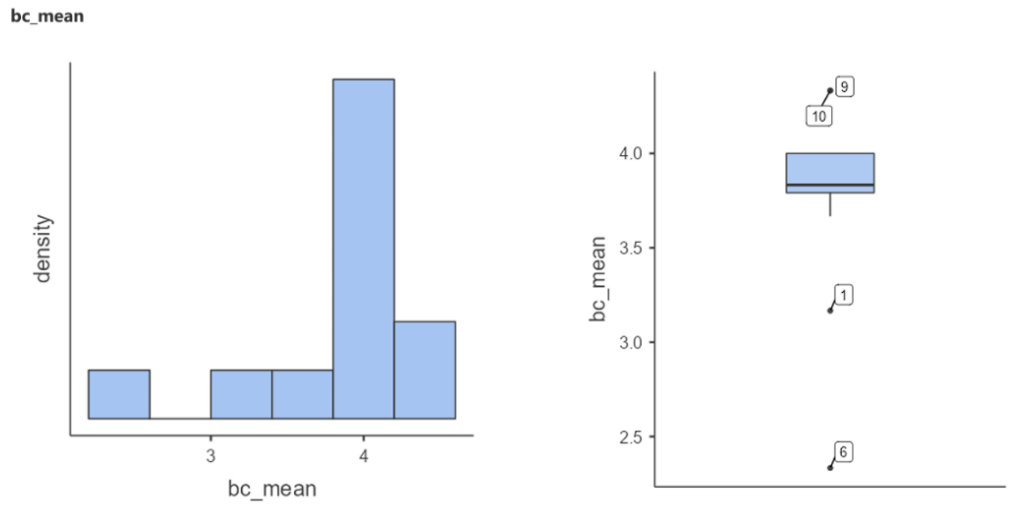
The mean score for cognitive component was 4.01 (SD = 0.359, Median = 4.00, Min = 3.33, Max = 4.67), which indicates that students generally had a positive perception on AI-assisted speaking practice in terms of its usefulness and effectiveness. The low standard deviation also suggests that responses were relatively consistent among participants.

Figure 8a and 8b. Histogram and Boxplot of Cognitive Component Scores of the Attitude Scale



The skewness value (0.0686) is close to zero, that is, the distribution of scores is approximately symmetrical. Additionally, the kurtosis value (0.459) suggests that the distribution does not have extreme peaks or tails. The histogram above (Figure 8_a) shows a normal distribution; most responses were clustered around 4.0. The boxplot above (Figure 8_b) also supports this by demonstrating the range that is narrow and there are no extreme outliers.

Figure 9a and 9b. Histogram and Boxplot of Behavioural Component Scores of the Attitude Scale



The mean score for the behavioural component was 3.76 (SD = 0.543, Median = 3.83, Min = 2.33, Max = 4.33). This suggests that although students had a positive attitude toward AI-assisted speaking practice, their willingness to continue using it was lower than their cognitive perceptions. Unlike the cognitive component, the skewness value (-1.86) of behavioural components suggests that the distribution is negatively skewed, which means most students gave higher ratings, but a few students rated the behavioural items lower. The kurtosis value (4.16) suggests a more peaked distribution with some extreme values. The histogram (Figure 9_a) shows that despite the majority of responses clustering around 4.0, there is a notable number of lower scores. The boxplot (Figure 9_b) also confirms this suggestion by highlighting the outliers below 3.0, which means that some students were less willing to engage with AI-assisted language learning behaviourally. In brief, the descriptive results indicate that students perceived AI-assisted speaking practice positively, especially in terms of cognitive components. However, their actual engagement and willingness to continue to use AI tools, which refers to the behavioural attitude, were lower, and this result suggests that while participants recognize the benefits of AI-assisted language learning, some of them may still have hesitations or other preferences when it comes to speaking practice methods.

Additionally, another analysis was conducted to compare students' cognitive and behavioural attitudes toward AI-assisted foreign language learning. The purpose of this analysis was to examine if students' perceived usefulness of AI differed

meaningfully from their practical willingness to incorporate it into their language learning processes.

Table 19. Normality Test Results of the Mean Scores of Cognitive and Behavioural Components

	W	p
Cognitive component – Behavioural component	0.774	0.005

Firstly, the assumption of normality was assessed using the Shapiro-Wilk test. The normality test for the difference between cognitive and behavioural components indicated that the data violates the normality assumption (W = 0.774, p = 0.005). Since the normality assumption is violated, a non-parametric alternative was chosen for a more reliable comparison, which is the Wilcoxon Signed-Rank Test.

Table 20. Wilcoxon Signed-Rank Test Results of the Mean Scores of Cognitive and Behavioural Components in AL2AS

						95% Confidence Interval			
	statistic	**df**	**p**	**Mean difference**	**SE difference**	**Lower**	**Upper**		**Effect size**
Student's t	1.89	11.0	0.085	0.250	0.132	-0.0409	0.541	Cohen's d	0.546
Wilcoxon W	40.5		0.036	0.250	0.132	-8.82e-7	0.833	Rank biserial correlation	0.800

The Wilcoxon Signed-Rank test results are shown in Table 20. The analysis results indicated a significant difference between cognitive and behavioural components of AL2AS scale administered (W = 40.5, p = 0.036). This value suggests that the cognitive attitudes of the AI-assisted practice group participants were significantly higher than their behavioural tendencies to continue actively using AI tools for foreign

language learning. According to the results, the students acknowledge that AI is beneficial for language learning, while they seem relatively hesitant when it comes to actively using AI tools in their learning process.

The difference between the two components was also supported by a large effect size (r_{rb} = 0.800). This suggests that the gap between students' cognitive attitudes and behavioural use of AI in language learning is not only statistically significant but also practically meaningful.

In the results of the Student's T-Test, this difference was not found statistically significant ($t(11) = 1.89$, $p = 0.085$); however, given that the data did not follow a normal distribution, the Wilcoxon test gave a more reliable result.

The findings suggest that students' attitudes toward AI-assisted language learning are more developed at a cognitive level but not fully at the behavioral actions. Although they consider AI a beneficial tool for foreign language learning, they are less inclined to use it in their daily learning processes.

5. DISCUSSION

This research aimed to investigate the impact of AI-assisted speaking practice on foreign language speaking anxiety and students' attitudes towards AI-assisted language learning. The primary objective was to find out whether engaging in structured speaking tasks with ChatGPT's voice mode could reduce anxiety levels of English language learners effectively. Also, the study investigated students' cognitive and behavioural attitudes toward AI technology in their foreign language learning process.

The findings revealed that students who participated in AI-assisted speaking practice experienced a significant reduction in their foreign language speaking anxiety, while the students in the human-assisted speaking practice group who practiced with their peers showed no significant change in their anxiety levels. This suggests that AI-based speaking practice may offer an innovative means of reducing speaking anxiety by providing a low-pressure, non-judgemental environment for learners of a foreign language to enhance their oral proficiency. Furthermore, students in the AI-practice group had positive attitudes toward AI. Its usefulness and effectiveness in language learning were recognized, which refers to cognitive attitudes, whereas their behavioral attitudes were relatively lower. This discrepancy shows a potential gap between recognizing the benefits of AI and actively integrating it into foreign language learning routines.

These findings contribute to the growing research on AI integration in language teaching by demonstrating that structured AI-assisted speaking practice may help alleviate anxiety and also by revealing potential challenges in fostering behavioral engagement with AI tools like ChatGPT. The following sections discuss these findings in relation to existing literature, their educational implications and directions for future research.

5.1. Discussion of Research Question 1: To what extent does AI-assisted speaking practice reduce foreign language speaking anxiety among tertiary EFL students?

The results of the study demonstrated that students who practiced speaking English with ChatGPT over the five-week period experienced a significant reduction in their foreign language speaking anxiety, which can be seen in the results of the descriptive analysis and paired sample t-test conducted. The experimental group's mean S-FLCAS score dropped from M = 23.1 (SD = 4.87) in the pre-test to M = 17.3 (SD = 5.17) in the post-test with a statistically significant difference ($t(13) = 3.53$, $p = 0.004$) and a large effect size (Cohen's $d = 0.945$), which indicates that the AI intervention had not only statistical but also practical significance. Although the standard deviation value slightly increased from pre-test to post-test (from 4.87 to 5.17), the consistent reduction in the mean anxiety scores of the AI-practice group participants still demonstrates that AI-assisted speaking practice had a generally positive effect on reducing speaking anxiety. This finding suggests that although the degree of anxiety reduction may have varied between individual participants, most students benefited from the intervention in terms of their anxiety levels and that AI-assisted speaking practice can be an effective tool for alleviating foreign language learners' speaking anxiety. This decline in anxiety levels among the AI-assisted practice group participants may be attributed to the nature of their interaction with AI, which is non-judgmental, consistent, and flexible. By using ChatGPT, foreign language learners can practice speaking skills without "fear of negative evaluation, which is one of the core components of foreign language speaking anxiety" (Horwitz et al., 1986). Also, the consistency, patience, and supportive tone of responses provided by AI may have created a psychologically safe space that helps students build confidence and reduce hesitation during their speaking. All these factors contribute to lowering affective barriers in the production phase of the foreign language learning process.

The results of this study are consistent with previous findings in literature. For instance, Zhang et al. (2024) reported that language learners who practiced speaking with an AI assistant showed reduced levels of language-related anxiety and an increased readiness to engage in communication, which highlights the benefits of integrating AI into language teaching in terms of overcoming affective factors. Similarly, Kim et al. (2021) found that tertiary-level language learners felt less anxious during AI-assisted speaking production tasks. The present study supports these studies,

which suggests that AI has the potential for lowering affective filters in the process of foreign language learning by providing a psychologically safe and controlled speaking environment. Moreover, Shazly (2021) emphasized the potential of AI to enhance speaking proficiency and also highlighted the need for further research on its effect on anxiety. The present study addresses this gap by providing evidence from a Turkish university's English preparatory school context. The strong effect size (Cohen's d = 0.945) obtained in the current study shows that voice-based interaction with ChatGPT can help reduce learners' speaking anxiety. This is especially relevant for learning contexts where anxiety is a major obstacle during learning and where access to natural and low-stakes speaking practice opportunities is limited.

The main reason for this outcome could be because ChatGPT was programmed by the researchers to provide learners with slow-paced, level-appropriate and friendly feedback. These features may have resulted in a non-intimidating learning atmosphere where the participants felt free to speak, make mistakes and get immediate and supportive feedback. For many language learners, especially those living in expanding circle countries like Türkiye, it is highly challenging to find such an environment to practice language. Also, language education is mostly exam-oriented in educational settings like English preparatory programs in Türkiye and speaking performance is often evaluated in high-stakes conditions, which makes incorporating a novel, AI-assisted way into speaking practice a crucial step for helping language learners with their speaking proficiency and anxiety levels.

Overall, the study contributes to the growing research supporting the use of AI in foreign language education by demonstrating that AI-assisted speaking practice can have a meaningful impact on reducing learners' foreign language speaking anxiety. This reinforces the importance of integrating AI tools into the language production stage to support students emotionally as well as linguistically.

5.2. Discussion of Research Question 2: Is AI-assisted speaking practice more effective than human-assisted speaking practice in reducing foreign language speaking anxiety?

The findings from the present study showed a significant reduction in foreign language speaking anxiety for the participants in the AI-practice group who engaged in AI-assisted speaking practice with ChatGPT's voice mode for five weeks. In contrast, the human-practice group participants who practiced speaking English through peer interaction did not show a significant decrease in anxiety levels. This result suggests that AI-assisted foreign language speaking practice may provide more effective support in alleviating speaking anxiety when compared to traditional human-based speaking practice.

The AI-practice group's S-FLCAS mean score decreased from 23.1 (SD = 4.87) to 17.3 (SD = 5.17) which was also a statistically significant change ($t(13) = 3.53$, $p = 0.004$, $d = 0.945$), and had a large effect size value (Cohen's $d = 0.945$). On the other hand, the human-practice group's mean scores increased slightly from 21.4 to 22.2 and this difference was not statistically significant ($t(13) = -0.551$, $p = 0.591$, $d = -0.147$), and the effect size was very small (Cohen's $d = -0.147$). This suggests there was no meaningful change in their anxiety levels. The minor variation noted between the human-practice group's scores before and after the intervention lacked practical significance, which might also be a sign of random variation or measurement noise.

Also, the Cohen's d values of the two groups are directly compared since "assessing the relationship degree is important to avoid publicizing trivial results as though they had practical utility" (Tabachnick & Fidell, 2007). The comparison indicates a significant difference in effect sizes. The intervention had a large and positive effect on anxiety levels of the AI-practice group ($d = 0.945$). However, there was no meaningful change in the human-practice group ($d = -0.147$). The difference between the Cohen's d values of the groups is approximately 1 point. The human-practice group's Cohen's d value is negligible, and the AI-practice group's Cohen's d value is large in effect size magnitude, and this difference displays the AI-assisted intervention's efficacy. Also, the contrast in effect sizes of the groups can be attributed to the interaction contexts. Although human-assisted speaking practice, peer-based practice in this context, is beneficial in the collaborative aspect, it may still cause

anxiety due to the emotions that can result from the nature of social interactions, such as comparison, fear of embarrassment, and peer judgment. Conversely, ChatGPT offered participants a non-judgmental interlocutor, enabling them to engage in risk-taking without emotional repercussions.

In addition to the comparison of pre-intervention and post-intervention results within each group, the between-group comparison of the post-test scores also demonstrated a significant difference in favour of the AI-practice group ($t(26) = -2.83$, $p = 0.009$). This finding supports that AI-assisted practice resulted in more reduction in speaking anxiety than human-assisted practice. Previous studies support these findings by emphasizing the effectiveness of AI chatbots in creating low-anxiety learning environments. For example, Wang et al. (2024) found that language learners who used AI chatbots with voice and avatar features to practice experienced a significant reduction in their foreign language speaking anxiety compared to the learners who were involved in speaking practice with their peers and teachers in a traditional classroom setting. Likewise, Zhang et al. (2024) reported that Chinese EFL learners who practiced with an AI speaking partner felt significantly less anxious and more willing to communicate compared to the learners who practiced speaking during in-class activities with their peers. According to the findings of Kim et al. (2021), the students who practiced English speaking through AI voice-chatting were also less anxious than the learners who practiced speaking under face-to-face circumstances.

In conclusion, both the statistical and practical significance of the results confirm that AI-assisted speaking practice is more effective than human-assisted speaking practice in reducing foreign language speaking anxiety, which makes AI a valuable tool for language educators who seek to support anxious learners through innovative technological means.

5.3. Discussion of Research Question 3: What are students' attitudes toward the use of AI-assisted speaking practice in language learning?

The results from the analyses on the AL2AS-CCS scale, which was only administered to the AI-practice group, revealed that participants generally held positive attitudes toward AI-assisted speaking practice with ChatGPT, especially regarding the cognitive component of their attitudes. The mean score for the cognitive component was 4.01 ($SD = 0.359$), and this suggests that students found the AI-assisted practice

useful and effective for their language learning process. The low standard deviation suggests that all participants shared these perceptions consistently.

In contrast, the mean score for the behavioural component was 3.76 (SD = 0.543), which is slightly lower than the cognitive mean score. Whereas the score for the behavioral component is still positive, it suggests that the participants in the AI-practice group were less inclined to actively integrate AI tools into their actual learning behaviour. The distribution for the behavioural component was also more varied as shown by the negatively skewed distribution and the presence of outliers in the boxplot (Figure 9_b), which indicates that some students reported notably lower scores in terms of behavioural items.

The Wilcoxon Signed-Rank test conducted for examining this discrepancy even further revealed a statistically significant difference between the two components ($W = 40.5$, $p = 0.036$) favouring cognitive attitudes. The large effect size ($r_{rb} = 0.800$) suggests that participants appreciated and supported the utilization of AI in language education intellectually; nevertheless, they were not ready to commit to the incorporation of AI into their actual learning behaviours. There are several possible explanations for this difference between cognitive and behavioural attitudes. The main reason behind this discrepancy could be that the integration of learned behaviour depends heavily on repeated exposure and active engagement over time (Klausmeier & Swanson, 1950). Participants in the experimental group utilized AI as a speaking practice tool only for five weeks, which may be an insufficient window of time for new learning to transform into behaviour. Thus, students may still be adapting to the integration of AI tools in their learning process. AI-assisted learning is a relatively new practice, especially in the language learning context, and language learners may need more time and guidance to develop continuous and consistent behaviour patterns. Secondly, some students may prefer face-to-face, human interactions. They may desire to rely on social engagement in a traditional setting to develop their speaking skills. Finally, students may experience issues and concerns regarding AI, such as their possible limitations to use technology, and lack of trust in terms of data privacy. Such concerns may lead to hesitations to actively use AI technology in the language learning process even though they recognize the benefits of it.

The findings about students' attitudes toward the incorporation of AI in language learning align with existing literature. For instance, Chan and Hu (2023) reported that

students generally have positive perceptions of generative AI tools like ChatGPT in language learning, especially due to its benefits in personalization and flexibility. Another example is the study by Belda-Medina and Calvo-Ferrer (2022), where researchers found that after utilizing conversational AI tools for language practice for four weeks, language learners had generally positive perceptions toward integrating AI into their learning experience. Similarly, Baharloo and Baghi (2024) found that participants in the experimental group, who practiced speaking English with two different conversational AI models for one academic semester, had positive attitudes toward AI-assisted learning, which aligns with the findings of the present study.

In brief, the findings obtained from the attitude scale demonstrate that students cognitively favour AI-assisted language learning, yet they may need more time and support to exhibit greater behavioural adoption of AI.

6. CONCLUSION

6.1. Theoretical Implications

The findings of this study provide some important theoretical implications for the field of foreign language learning by connecting established theories of language learning with the emerging role of AI-assisted practice.

To begin with, the Affective Filter Hypothesis by Krashen (1982) is especially relevant in order to be able to interpret the significant reduction in FLSA levels of AI-practice group participants. In his theory, Krashen suggests that when affective filters such as anxiety are high, they can block or limit the understanding of comprehensible input, which may hinder learning. In this study, AI-assisted speaking practice created a low-pressure, non-judgemental environment and it appeared to lower learners' affective filters and make them comfortable with speaking tasks.

Another theory that the results of the study align with is Gardner's Socio-Educational Model (1985). This model emphasizes the importance of attitudes and motivation in the language learning process. The positive attitudes reported by AI-group participants toward AI-assisted speaking practice, especially at the cognitive level, align with Gardner's model, as he emphasizes the learning situation and learners' perceptions of the value and relevance of their language learning experiences. It can be argued that integrating AI into language classrooms can yield positive attitudes that may strengthen students' motivation and persistence.

Dörnyei's L2 Motivational Self System (2005, 2009) can also shed light into the observed difference between students' cognitive and behavioural attitudes toward AI-assisted practice. This system emphasizes the role of learners' visions of their "ideal L2 self" in their engagement levels and learning behaviours. The positive cognitive attitudes observed in this study may be the result of developing an ideal L2 self within students, which sees ChatGPT as a supportive resource. On the other hand, the relatively lower behavioural attitudes may suggest that students might need additional

factors, such as support from the institution or confidence in using AI, to fully manifest their positive visions into their actual learning behaviour.

Furthermore, the notable disparity in anxiety reduction between the AI-practice and human-practice groups corresponds with the research conducted by MacIntyre and his associates (1998) regarding willingness to communicate (WTC). According to this framework, affective factors like anxiety, along with learner attitudes, directly shape learners' readiness to speak and participate in the target language. The findings that AI-assisted practice can lower anxiety and promote positive attitudes suggest that it may also enhance WTC, which is critical for developing communicative competence.

In conclusion, this research highlights the need to view AI-assisted language learning not only as a technological development but as a pedagogically meaningful practice that can lower affective barriers, foster positive attitudes, and thus, support learners' communicative confidence. It supports the available theoretical framework by linking foundational theories to modern practices in AI-mediated learning and offers insights for both researchers and teachers in the field.

6.2. Pedagogical Implications

The findings of this study provide important pedagogical implications for foreign language teaching, especially in English preparatory programs where speaking anxiety is a major challenge. One of the key implications is that AI-assisted speaking practice can be a powerful supplementary tool for helping language learners overcome affective barriers like anxiety. The significant decrease in speaking anxiety of students who practiced with ChatGPT suggests that AI-based speaking tasks can provide a safer, more comfortable alternative for traditional human-based speaking activities such as peer practice in the classroom. Language teachers can consider integrating AI chatbots into their language classrooms by designing weekly structured speaking tasks that align with course objectives. Since the participants who practiced with AI during the intervention reacted positively to structured AI conversations with specific grammar and vocabulary, teachers can adopt a similar framework in their own classrooms by preparing prompts according to their learners' levels and needs and their course materials.

Another important implication stems from the gap between cognitive and behavioural attitudes observed among the participants. While students acknowledged the benefits of AI intellectually, they were relatively less willing to use AI tools in real life. This suggests that teachers should scaffold and encourage the integration of such tools to foster actual behavioral engagement, allocating time and creating opportunities for students. Language teachers can use approaches such as gradually introducing conversational AI tools through demonstrations, assigning students tasks that allow them to explore the AI tool that can be used for language learning purposes, and having open discussions about students' concerns about the use of AI to enable behavioural adoption and build trust in the AI technology.

Finally, institutions may also support the integration of AI tools by providing orientation sessions for both students and teachers. When learners understand how to use and interact with AI, they may feel more confident about using it for language learning. Also, teacher training programs can include AI literacy sessions that can help teachers incorporate these tools into their teaching practice.

6.3. Limitations and Suggestions for Further Research

Although this study provides valuable findings on the effect of AI–assisted speaking practice on foreign language speaking anxiety and learner attitudes toward the use of AI for language learning, some limitations should be acknowledged. Recognizing these limitations also gives way to future research that can contribute to the literature.

To begin with, the study was conducted with a small sample size of 28 participants divided equally into the AI-assisted and human-assisted practice groups. Even though the sample size in the study seems modest, the number of participants was determined based on the sizes of pre-existing classes, and this aligns with the practical limitations of this research, such as the availability of the students to the researcher and the feasibility of conducting a detailed and smooth intervention. In this study, the small sizes of the two groups allowed the researcher to monitor both classes closely and to provide each and every participant with assistance and guidance when needed. Although the statistical analyses suggest significant and meaningful effects, the relatively limited number of participants restricts the generalizability of the findings. Future studies with a larger and more diverse participant pool can provide a more comprehensive understanding on the topic.

Second, the duration of the intervention was limited to five weeks since one term consists of eight weeks in the English preparatory school of the university where the research was conducted. This duration may not have been sufficient to understand the long-term effects of AI-assisted speaking practice. Whereas a significant reduction in speaking anxiety was observed, it is still unclear whether this result would sustain over time. Future research can benefit from adopting a longitudinal design to find out the continuity of anxiety and attitude changes.

Third, the study was carried out in a single institutional context, which is a university English preparatory program in Türkiye. The institution's culture, curriculum, and student profile may have influenced the results of the study. To improve the generalizability of the findings, future research can include participants from different educational contexts, institutions, and even age groups.

Another limitation is that the data was collected only through self-report instruments, S-FLCAS and AL2AS-CCS. This kind of instrument may bring about some disadvantages, such as dishonesty, introspective disability, and misinterpretation of the items. Participants may have given more socially acceptable answers instead of being truthful. They may also not have been able to evaluate themselves correctly, which refers to introspective disability. Besides, items may have been interpreted differently among participants, even though the items were explained in detail by the researcher whenever the participants needed assistance. While the scales used in the study were validated and reliable, incorporating qualitative data collection methods like interviews and reflective journals in future research could provide a deeper understanding of learners' experiences.

Another limitation concerns the lack of full control over AI-assisted speaking practice conducted outside of class. Although the structured prompts and weekly tasks were provided to the AI-practice group, the actual interaction with ChatGPT took place in the learners' own time and environment. This resulted in some variation in the amount, frequency, and quality of the AI-assisted speaking practice. Although weekly conversation transcripts were reviewed by the researcher to verify participation, these snapshots did not enable in-depth tracking of how regularly or fully students interacted with the AI. Future studies might benefit from observing learners' out-of-class interaction with AI more directly or systematically to ensure learner behaviours.

Finally, the study focused on one single AI tool, ChatGPT, which is one of numerous AI tools offering various features that can be used in language learning. Although ChatGPT is a useful tool for speaking practice thanks to its voice mode, in which the AI speaker sounds authentic and genuine like an actual person, other AI tools with different multimodal features, such as human-like avatars, can also receive different responses from language learners. Future studies could employ and even compare different types of AI chatbots to explore how they affect learner anxiety and attitude.

In sum, while this study contributes to the growing field of AI in foreign language education, addressing the limitations through larger samples, longer interventions, mixed methods, and comparative designs would strengthen the findings and give more effective pedagogical implications in further research.

6.4. Conclusion

The present study aimed to evaluate the impact of AI-assisted speaking practice on foreign language speaking anxiety and to examine students' attitudes toward the integration of AI in the learning process of English as a foreign language. The research was conducted with Turkish university preparatory students at a foundation university in Istanbul by employing two groups of participants: the AI-assisted speaking practice group and the human-assisted speaking practice group. The study adopted a quasi-experimental design, administering the anxiety scale to both groups, which is the Short-form Foreign Language Classroom Anxiety Scale (S-FLCAS), as a pre- and post-intervention measure to assess changes in learners' anxiety levels and employing the attitude scale only to the AI-practice group, which is the AI-Assisted Language Learning Attitude Scale (AL2AS), only as a post-intervention measure to find out the perceptions of the participants.

The findings revealed that the students in the AI-practice group who practiced speaking with ChatGPT experienced a significant reduction in their foreign language speaking anxiety levels, while no meaningful change was observed in the students in the human-practice group who practiced speaking English with their peers. The between-group comparison also confirmed that the AI-assisted speaking practice is more effective than human-assisted speaking practice in alleviating anxiety. These results suggest that conversational AI tools can provide a psychologically safer, less judgemental environment for students where they can feel encouraged to take risks

and build confidence. Moreover, the participants in the AI-practice group generally held positive attitudes toward AI-assisted language learning, especially at the cognitive level. They acknowledged the usefulness of AI for practicing speaking; however, their behavioural engagement was relatively limited. The significant difference between cognitive and behavioural components suggests that teachers may need to allocate more time, create opportunities, and offer guidance and support to incorporate AI into their students' learning processes.

In conclusion, the integration of AI chatbots, like ChatGPT, into foreign language education presents great opportunities for supporting language learners emotionally and pedagogically. Even though further research is needed to strengthen these findings, the present study concludes that AI can be more than a technological innovation; it can be a meaningful pedagogical ally in foreign language education

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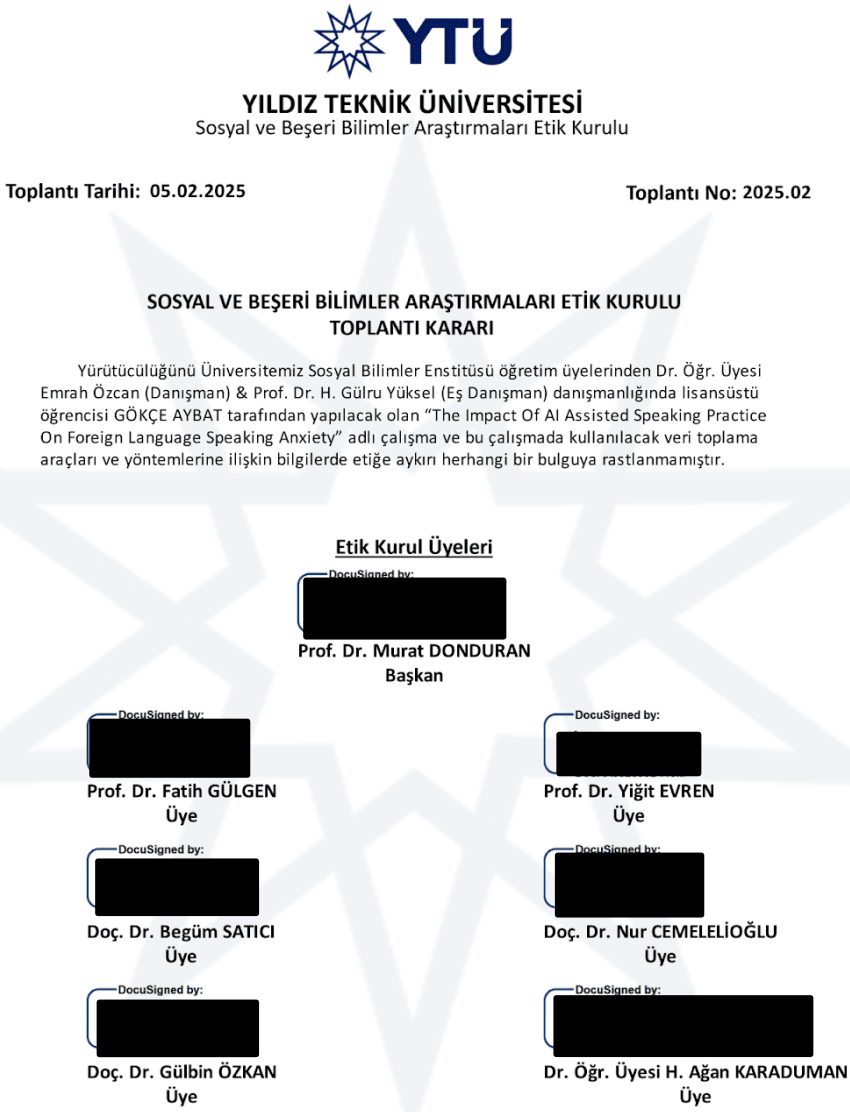
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APPENDICES

Appendix 1. Ethical Committee Approval by Yıldız Technical University



YILDIZ TEKNİK ÜNİVERSİTESİ
Sosyal ve Beşeri Bilimler Araştırmaları Etik Kurulu

Toplantı Tarihi: 05.02.2025 **Toplantı No: 2025.02**

SOSYAL VE BEŞERİ BİLİMLER ARAŞTIRMALARI ETİK KURULU TOPLANTI KARARI

Yürütücülüğünü Üniversitemiz Sosyal Bilimler Enstitüsü öğretim üyelerinden Dr. Öğr. Üyesi Emrah Özcan (Danışman) & Prof. Dr. H. Gülru Yüksel (Eş Danışman) danışmanlığında lisansüstü öğrencisi GÖKÇE AYBAT tarafından yapılacak olan "The Impact Of AI Assisted Speaking Practice On Foreign Language Speaking Anxiety" adlı çalışma ve bu çalışmada kullanılacak veri toplama araçları ve yöntemlerine ilişkin bilgilerde etiğe aykırı herhangi bir bulguya rastlanmamıştır.

Etik Kurul Üyeleri

DocuSigned by: [redacted]
Prof. Dr. Murat DONDURAN
Başkan

DocuSigned by: [redacted]
Prof. Dr. Fatih GÜLGEN
Üye

DocuSigned by: [redacted]
Prof. Dr. Yiğit EVREN
Üye

DocuSigned by: [redacted]
Doç. Dr. Begüm SATICI
Üye

DocuSigned by: [redacted]
Doç. Dr. Nur CEMELELİOĞLU
Üye

DocuSigned by: [redacted]
Doç. Dr. Gülbin ÖZKAN
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Appendix 2. Ethical Committee Approval by Istanbul Bilgi University

Evrak Tarih ve Sayısı: 30.01.2025-43918

İstanbul Bilgi Üniversitesi
ETİK KURUL

Sayı : E-89026508-050.04-43918 28.01.2025
Konu : Etik Kurul Kararı 2024-20101-216

ETİK KURUL DEĞERLENDİRME SONUCU
RESULT OF EVALUATION BY THE ETHICS COMMITTEE

Başvuru Sahibi/Applicant: Gökçe Aybat
Proje Başlığı / Project Tittle: The Impact of ai-assisted Speaking Practice on Foreign Language Speaking Anxiety
Proje No / Project Number: 2024-20101-216

1	Herhangi bir değişikliğe gerek yoktur / There is no need for revision **X**
2	Ret /Application Rejected Reddin Gerekçesi /Reason for Rejection:

Değerlendirme Tarihi / Date of Evaluation: 30.12.2024

Dr. Öğr. Üyesi Mahmut ELBİSTAN
Etik Kurul Üyesi

Doç.Dr. Yağmur NUHRAT YAZGAN
Etik Kurul Üyesi

Prof. Dr. Ster IRMAK SAV
Etik Kurul Üyesi

Prof. Dr. Itır ERHART
Etik Kurul Üyesi

Doç.Dr. Mehmet Bedii KAYA
Etik Kurul Başkanı

Bu belge, güvenli elektronik imza ile imzalanmıştır.

Belge Doğrulama Kodu :*BSV4392KBZ* Pin Kodu :38962
Belge Takip Adresi : https://turkiye.gov.tr/ebd?eK=5442&eD=BSV4392KBZ&eS=43918

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Unvanı: Etik Kurul Sekreterliği

Appendix 3. Eight items of the Short-Form Foreign Language Classroom Anxiety Scale (S-FLCAS)

Item
1. Even if I am well prepared for FL class, I feel anxious about it.
2. I always feel that other students speak the FL better than I do.
3. I can feel my heart pounding when I'm going to be called on in FL class.
4. I don't worry about making mistakes in FL class.*
5. I feel confident when I speak in FL class.*
6. I get nervous and confused when I am speaking in my FL class.
7. I start to panic when I have to speak without preparation in FL class.
8. It embarrasses me to volunteer answers in my FL class.

* Reverse-scored items

Appendix 4. 12 items of AI-Assisted L2 Learning Attitude Scale for Chinese College Students (AL2AS-CCS) and its subdimensions

Item	CC	BC
1. I believe that future L2 learning will be closely integrated with AI.	X	
2. I think every student should master the skills of AI-assisted L2 learning.	X	
3. I consider AI indispensable for L2 learners.	X	
4. To improve L2 proficiency, I believe it's worthwhile to learn to use AI.	X	
5. I think I can use AI effectively to assist my L2 learning.	X	
6. I believe the benefits of AI in L2 learning outweigh the drawbacks.	X	
7. I would choose a career related to AI-assisted L2 learning.		X
8. If there is a club related to AI-assisted L2 learning, I would like to join.		X
9. I want to watch videos about AI-assisted L2 learning.		X
10. I wish to continue learning about how to use AI to assist in L2 learning.		X
11. I am willing to use AI to assist my L2 learning.		X
12. I aim to employ AI to streamline the L2 learning process.		X

Note: CC = Cognitive Component; BC = Behavioral Component

Appendix 5. Week 1 Prompt and Questions

You are speaking with an A2-level English language learner who is currently studying B1 level. Each week, the learner will share a set of questions for speaking practice, focusing on that week's grammar and vocabulary. The learner will signal their readiness by saying, "I'm ready." Your job is to ask the questions one by one, wait for their response, and give short, simple feedback on target grammar and vocabulary only if needed. Speak slowly, using A2-level vocabulary in your feedback. Be friendly, encouraging, and guide the learner through their practice. Focus on helping them improve their speaking skills through positive reinforcement and gentle corrections.

Target grammar: Simple Past Tense, Past Continuous Tense
Target vocabulary: adventure (n), break down (v), completely (adv), cover (v), destination (n), experience (n), facility (n), flight (n), national (adj), role (n), set (v), situation (n), storm (n)

1. What kind of holiday do you like to have? Why?
   When did you last go on a holiday?
   Where did you go?
   Who did you go with?
   How did you travel?
   What did you do?
   Did you buy any souvenirs? What did you buy? Why did you buy them?
   What are some of the things that you don't have to do when you are on holiday?

2. Do you like going out with your friends?
   When did you last go out with your friends?
   Where did you go?
   Who did you go out with?
   What did you do?
   Did you have a good time? Why/not?
   What are the advantages of going out with your friends?

3. Think of a time you had a wonderful journey.
   Where were you going?
   How were you travelling?
   Who were you with?
   What was so good about the journey?
   Would you like to have a similar journey again? Why / why not?
   What are the qualities of a good journey?

4. Think of a time you had an awful journey.
   Where were you going?
   How were you travelling?
   Who were you with?
   What was so bad about the journey?
   What are some difficulties you might face during a bad journey?

5. Do you like going to weddings? Why/not?
   When did you last go to a wedding?
   Whose wedding was it?
   Did you have a good time? Why/not?
   What did you wear?
   What are some things that a wedding organizer has to do?

Appendix 6. Week 2 Prompt and Questions

You are speaking with an A2-level English language learner who is currently studying B1 level. Each week, the learner will share a set of questions for speaking practice, focusing on that week's grammar and vocabulary. The learner will signal their readiness by saying, "I'm ready." Your job is to ask the questions one by one, wait for their response, and give short, simple feedback on target grammar and vocabulary only if needed. Speak slowly, using A2-level vocabulary in your feedback. Be friendly, encouraging, and guide the learner through their practice. Focus on helping them improve their speaking skills through positive reinforcement and gentle corrections.

Target grammar: Present Perfect vs Past Simple (Ever / Never; Been / Gone), Present Perfect Tense Expressions: Already, Yet, Just / Been - Gone
Target vocabulary: afford (v), ambition (n), borrow (v), chance (n), charity (n), direction (n), generous (adj), homeless (adj), huge (adj), lend (v), loan (n), offer (v), owe (v), pay (v), smile (v/n)

1. Have you ever been abroad?
   If "yes":
   When was the last time you went abroad?
   Where did you go?
   Who did you go there with?
   What did you do there?
   How long did you stay there?
   Did you spend a lot of money?
   Did you have a good time? Why/not?
   What do you have to do before you go on holiday abroad?

2. Have you ever disliked a present?
   If "yes":
   What was it?
   Who gave it to you?
   What was the occasion?
   When was it?
   What did you do with the present?
   What are qualities of a good present?

3. Have you ever had a holiday with your friends?
   If "yes":
   When was it?
   Where did you go?
   How did you travel?
   What did you do there?
   Did you enjoy? Why / why not?
   Did you spend a lot of money?
   How did you pay for your expenses?
   What are some things you don't have to do when you stay in a hotel?

4. Have you ever lied to a friend?
   If "yes":
   When was it?
   Why did you lie?
   Did your friend find out? If "yes": What did he/she do?
   Did you apologize to your friend?
   Why do people sometimes have to lie?

Appendix 7. Week 3 Prompt and Questions

You are speaking with an A2-level English language learner who is currently studying B1 level. Each week, the learner will share a set of questions for speaking practice, focusing on that week's grammar and vocabulary. The learner will signal their readiness by saying, "I'm ready." Your job is to ask the questions one by one, wait for their response, and give short, simple feedback on target grammar and vocabulary only if needed. Speak slowly, using A2-level vocabulary in your feedback. Be friendly, encouraging, and guide the learner through their practice. Focus on helping them improve their speaking skills through positive reinforcement and gentle corrections.

Target grammar: Present Perfect with For and Since, First Conditional
Target vocabulary: hold/break a record (v), accept (v), apologize (v), cancel (v), charity (n), excuse (n), reply (v), complete (v), education (n), exhibition (n), grade (n), hand in (v), industry (n), main (adj), practise (v), probably (adv), revise (v), society (n), submit (v)

1. Do you know any charity in Turkey? Or in the world?
   What do they do?
   How long have you known them?
   How did you first learn about them?
   Have you ever worked for a charity?
   If "yes": Which charity did you work for?
   Why did you prefer to work for that charity?
   If "no": Would you like to work for a charity?
   Which charity would you like to work for? Why?
   Do you prefer helping sick children or old people? Why?

2. Do you have a smart phone?
   How long have you had it?
   Where did you buy it?
   Why did you choose that model?
   Do you prefer IPhone or Samsung? Why?
   Have you ever lost it / forgotten it somewhere?
   If yes: How did you feel?

3. Who is your best friend?
   How long have you known him/her?
   Where did you meet first?
   Do you remember what he/she was doing when you first met him / her?
   Why are you good friends?
   Have you ever gotten angry with him/her?
   If yes: What happened? If no: Why not?

4. Do you have a boyfriend / girlfriend?
   How long have you known him / her?
   Where did you meet?
   Do you remember what he / she was wearing when you first met him / her?
   Why do you love him / her?
   Have you ever had a disagreement with him / her?
   If yes: What happened? If no: Why not?
   Has he/she ever surprised you with a party or a present?
   If yes: What did he/she do? How did you feel?
   What is the best time you have ever spent with you boyfriend/girlfriend?

Appendix 8. Week 4 Prompt and Questions

You are speaking with an A2-level English language learner who is currently studying B1 level. Each week, the learner will share a set of questions for speaking practice, focusing on that week's grammar and vocabulary. The learner will signal their readiness by saying, "I'm ready." Your job is to ask the questions one by one, wait for their response, and give short, simple feedback on target grammar and vocabulary only if needed. Speak slowly, using A2-level vocabulary in your feedback. Be friendly, encouraging, and guide the learner through their practice. Focus on helping them improve their speaking skills through positive reinforcement and gentle corrections.

Target grammar: Defining Relative Clauses (who / which /that / where)
Target vocabulary: development (n), record (v), appear (v), author (n), break the law, fall in love, recognize (v), sign (n), address (n), bookshelf (n), screen (n), fiction (n)

1. Are friends important to you? Why/ why not?
   Which one is more important in a friendship – honesty or generosity? Why?
   How many good friends do you have? Why?
   How can you describe a good friend?
   Do you share everything with your best friend? Why / why not?
   Have you ever fallen in love with a friend?
   If "yes": Did you tell him/her? How did he/she react?
   What are some difficulties you might face in a friendship?

2. Do you like watching movies? Why?
   What kind of movies do you like? Why?
   What is the best movie you have ever watched? Why?
   Where and when did you watch that movie?
   How many times have you watched it? Why?
   Do you prefer watching films in the cinema or at home? Why?
   Describe a good movie.
   Describe a good actor.

3. Do you like reading books? Why?
   What kind of books do you like reading? Why?
   Who is your favorite author? Why?
   Describe a good book.
   Describe a good author.
   Describe the best place to read a book.
   What is the most boring book you have ever read? Why?
   Have you ever read a book more than once?
   If "yes": What is the name of the book? Who wrote it?
   Why did you read it more than once?

4. Do you like shopping? Why?
   Where do you generally go shopping? Why?
   What do you generally buy when you go shopping?
   Do you prefer shopping alone or with a friend? Why?
   Do you have a credit card?
   If "yes": How long have you had it? How often do you use it?
   Would you allow a friend to use your credit card? Why/not?
   Have you ever done online shopping?
   If "yes": What did you buy the last time you did online shopping?
   What are the dangers you might face when you do online shopping?
   Describe a good shopping place.

Appendix 9. Week 5 Prompt and Questions

You are speaking with an A2-level English language learner who is currently studying B1 level. Each week, the learner will share a set of questions for speaking practice, focusing on that week's grammar and vocabulary. The learner will signal their readiness by saying, "I'm ready." Your job is to ask the questions one by one, wait for their response, and give short, simple feedback on target grammar and vocabulary only if needed. Speak slowly, using A2-level vocabulary in your feedback. Be friendly, encouraging, and guide the learner through their practice. Focus on helping them improve their speaking skills through positive reinforcement and gentle corrections.

Target grammar: Type 2 Conditional Clauses
Target vocabulary: celebrity (n), childhood (n), last (adj), limited (adj), satisfaction (n), status (n)

7. Do you think being healthy is important? Why do you think so?
   Who is the healthiest person you have ever known?
   What does he/she do to be healthy?
   What should a person do to live a long and healthy life?
   Do you think living a healthy life is too boring? Why do you think so?
   Do you prefer to have a long unhealthy life or a short healthy life? Why?
   What would you do if you found out that you have only 24 hours to live?
   What would you do if you lived forever?
   Describe a good life.

8. Are you an honest person? Describe an honest person.
   How important is being honest for you?
   Who is the most trustworthy person you have ever met? Why?
   Have you ever lied to your friends? Why / Why not?
   What would you do if you hit another car while parking and nobody saw it?
   What would you do if you found a wallet full of money?
   If you saw a friend stealing something from a shop, what would you do?
   I want to go to a party this weekend, but my parents don't let me. I really need to go to the party. What is your advice?

9. Do you have a small or a big family?
   Describe a good family.
   Do you get on well with your parents/siblings? Why/not?
   Who is more disciplined – you mother or your father? Why?
   Have you ever been angry with your parents?
   If "yes"": What was the reason? How did you solve the problem?
   Do you prefer to live with your parents or alone after you graduate from university? Why?
   What would you do if didn't see your family for 5 years? Why?
   Would you quit school if you wanted to start a family? Why/not?
   Do you think families will get bigger or smaller in the future? Why?

10. Do you eat food for fuel or pleasure? Why?
    What do you normally eat in a typical day?
    Do you ever cook?
    If "yes": Do you prefer to cook healthy or unhealthy food? Why?
    Have you ever been on a diet?
    If "yes": Why? How much weight did you lose? How did you feel while you were dieting?
    Do you think people will have healthier diets in the future? Why?
    Do you prefer to eat at home or eat out? Why?
    Describe a good restaurant.
    What would you do if couldn't eat your favorite food anymore? Why?
    What would you cook to your favorite celebrity if he/she came for dinner? Why?

Appendix 10. Consent Form

Title of the Study: The Impact of AI-Assisted Speaking Practice on Foreign Language Speaking Anxiety

Researcher: Gökçe Aybat

Institution: Istanbul Bilgi University

Contact Information: [redacted]

Introduction:

You are being invited to participate in a research study that aims to investigate the impact of AI-assisted speaking practice on Foreign Language Speaking Anxiety (FLSA) and learners' attitudes toward AI-assisted language learning. This consent form provides detailed information about your participation in the study. Please read it carefully and feel free to ask any questions you may have before you agree to participate.

Voluntary Participation:

Your participation in this study is completely voluntary. You are free to decide whether or not to participate. If you decide to participate, you can withdraw at any time without any penalty or loss of benefits to which you are otherwise entitled. If you choose not to participate, it will not affect your current academic standing or relationship with the researcher.

Survey Participation:

In this study, you will be asked to complete two surveys:

- **Foreign Language Classroom Anxiety Survey (S-FLCAS):** This survey will assess your levels of foreign language speaking anxiety before and after the AI-assisted speaking practice sessions.
- **AI-Assisted L2 Learning Attitude Scale:** This survey will evaluate your attitudes towards using AI (ChatGPT) as a tool for language learning, particularly in relation to speaking practice.

Data Collection and Confidentiality:

All responses you provide will be kept confidential. Your participation will be anonymous, and no personally identifiable information will be associated with your responses. You will be assigned a unique code, and only aggregated data will be used in the analysis and reporting of the study results.

The data will be stored securely on password-protected devices and cloud storage systems. Only the researcher will have access to the data, and it will be used solely for the purpose of this research. The results will be shared in aggregate form only, and no individual responses will be disclosed.

Risks and Benefits:

There are no significant risks associated with your participation in this study. The study is designed to create a safe and supportive environment for you to express your feelings and opinions. The findings of this study may contribute to better understanding the role of AI in language learning, particularly in reducing anxiety, and may provide insights into enhancing foreign language teaching methods.

Right to Withdraw:

You may withdraw from the study at any time without any consequences. If you decide to withdraw, any data you have provided will be discarded and not used in the final analysis.

Consent to Participate:

By signing below, you acknowledge that you have read and understood the information provided above, and you voluntarily agree to participate in this study.

- ☐ I consent to participate in this study.
- ☐ I consent to the use of my responses in the study's analysis and reporting.
- ☐ I understand that my participation is voluntary and I can withdraw at any time.

Appendix 11. The anxiety-related questionnaire administered to all participants in the study, including the demographic questions and S-FLCAS items

1) Short FLCAS

- Gender:
  - Male
  - Female
- Please enter your age:

1. Even if I am well prepared for English class, I feel anxious about it.
Totally disagree
Disagree
Neither agree nor disagree
Agree
Totally agree

2. I always feel that other students speak English better than I do.
Totally disagree
Disagree
Neither agree nor disagree
Agree
Totally agree

3. I can feel my heart pounding when I'm going to be called on in English class.
Totally disagree
Disagree
Neither agree nor disagree
Agree
Totally agree

4. I don't worry about making mistakes in English class.
Totally disagree
Disagree
Neither agree nor disagree
Agree
Totally agree

5. I feel confident when I speak in English class.
Totally disagree
Disagree
Neither agree nor disagree
Agree
Totally agree

6. I get nervous and confused when I am speaking in my English class.
Totally disagree
Disagree
Neither agree nor disagree
Agree
Totally agree

7. I start to panic when I have to speak without preparation in English class.
Totally disagree
Disagree
Neither agree nor disagree
Agree
Totally agree

8. It embarrasses me to volunteer answers in my English class.
Totally disagree
Disagree
Neither agree nor disagree
Agree
Totally agree

Appendix 12. Attitude-related questionnaire consisting of AL2AS-CSS items, administered only to the AI-assisted speaking practice group

2) AI-assisted L2 learning attitude scale
1) I believe that future foreign language learning will be closely integrated with AI. Strongly disagree 1 2 3 4 5 Strongly agree
2) I think every student should master the skills of AI-assisted foreign language learning. Strongly disagree 1 2 3 4 5 Strongly agree
3) I consider AI indispensable for foreign language learners. Strongly disagree 1 2 3 4 5 Strongly agree
4) To improve foreign language proficiency, I believe it's worthwhile to learn to use AI. Strongly disagree 1 2 3 4 5

Strongly agree

5) I think I can use AI effectively to assist my foreign language learning.

Strongly disagree

1

2

3

4

5

Strongly agree

6) I believe the benefits of AI in foreign language learning outweigh the drawbacks.

Strongly disagree

1

2

3

4

5

Strongly agree

7) I would choose a career related to AI-assisted foreign language learning.

Strongly disagree

1

2

3

4

5

Strongly agree

8) If there is a club related to AI-assisted foreign language learning, I would like to join.

Strongly disagree

1

2

3

4

5

Strongly agree

9) I want to watch videos about AI-assisted foreign language learning.

Strongly disagree

1

2

3

4

5

Strongly agree

10) I wish to continue learning about how to use AI to assist in foreign language learning.

Strongly disagree

1

2

3

4

5

Strongly agree

11) I am willing to use AI to assist my foreign language learning.

Strongly disagree

1

2

3

4

5

Strongly agree

12) I aim to employ AI to streamline the foreign language learning process.

Strongly disagree

1

2

3

4 5 Strongly agree