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OF MINDFULNESS PRACTICES ON SPEAKING ANXIETY AND PERFORMANCE AMONG INTROVERT VS. EXTROVERT EFL LEARNERS

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LOS EFECTOS DE LAS PRÁCTICAS DE ATENCIÓN PLENA SOBRE LA ANSIEDAD AL HABLAR Y EL RENDIMIENTO EN ESTUDIANTES DE INGLÉS COMO LENGUA EXTRANJERA (EFL) INTROVERTIDOS Y EXTROVERTIDOS

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ABSTRACT

This study examined the effects of mindfulness practices on speaking performance and speaking anxiety among introverted and extroverted English as a Foreign Language (EFL) learners. A non-equivalent quasi-experimental pretest-posttest design was used with 60 intermediate male EFL learners aged 17–23 from a private language institute in Ardabil, Iran. Participants were divided into four groups: two experimental groups (extroverts and introverts) who received mindfulness training, and two control groups who did not. The mindfulness program included eight 40-minute sessions aimed at fostering awareness, focus, and relaxation techniques to reduce anxiety and enhance speaking skills. Results indicated that mindfulness significantly improved speaking performance and reduced anxiety levels in the experimental groups compared to controls. Learners who underwent mindfulness training showed notable progress in speaking ability and decreased anxiety. The findings suggest that integrating mindfulness into language education is an effective approach to addressing common challenges such as speaking anxiety and performance issues. Additionally, the study emphasized the importance of considering individual differences, such as personality type, when implementing mindfulness interventions. Overall, this research offers valuable insights into how mindfulness can enhance speaking skills and alleviate anxiety in EFL learners, providing useful implications for language teachers, educators, and researchers aiming to improve language teaching methodologies.

Keywords:

Mindfulness, speaking anxiety, introvert learners, extrovert learners.

RESUMEN

Este estudio examinó los efectos de las prácticas de mindfulness en el desempeño oral y la ansiedad al hablar entre estudiantes introvertidos y extrovertidos de inglés como lengua extranjera (EFL). Se utilizó un diseño cuasiexperimental con pretest y postest no equivalente, con 60 estudiantes varones de nivel intermedio, de entre 17 y 23 años, provenientes de un instituto privado de idiomas en Ardabil, Irán. Los participantes fueron divididos en cuatro grupos: dos grupos experimentales (extrovertidos e introvertidos) que recibieron entrenamiento en mindfulness, y dos grupos de control que no lo recibieron. El programa de mindfulness consistió en ocho sesiones de 40 minutos, orientadas a fomentar la conciencia, la concentración y técnicas de relajación para reducir la ansiedad y mejorar las habilidades orales. Los resultados indicaron que el mindfulness mejoró significativamente el desempeño oral y redujo los niveles de ansiedad en los grupos experimentales en comparación con los controles. Los estudiantes que participaron en el entrenamiento mostraron un progreso notable en su capacidad para hablar y una disminución de la ansiedad. Los hallazgos sugieren que integrar mindfulness en la enseñanza de idiomas es un enfoque efectivo para enfrentar desafíos comunes como la ansiedad al hablar y los problemas de desempeño. Además, el estudio resaltó la importancia de considerar las diferencias individuales, como el tipo de personalidad, al implementar intervenciones de mindfulness. En general, esta investigación ofrece valiosas perspectivas sobre cómo el mindfulness puede mejorar las habilidades orales y aliviar la ansiedad en estudiantes de EFL, brindando implicaciones útiles para docentes, educadores e investigadores interesados en mejorar las metodologías de enseñanza de idiomas.

Palabras clave:

Mindfulness, ansiedad al hablar, estudiantes introvertidos, estudiantes extrovertidos.

INTRODUCTION

The use of mindfulness has become more popular for improving various elements of the language such as speaking skills. To date, however, the available literature has very limited research on the application of mindfulness practices in relation to EFL learners especially in regard to whether the learners are introverted or extroverted. As personality traits, extroversion and introversion have been shown to affect how individuals approach the learning of a language by engendering differences in communication apprehension, levels of risk taking as well as a desire to communicate.

In consideration of the above, it is important to explore how the attention control, emotional regulation, and anxiety reductions components of mindfulness practices would work differently in enhancing the speaking performance of an introverted EFL learner as compared to an extroverted one.

In order to develop speaking skills, it is important to address multiple mental obstacles like the fear of being wrong and the fear of talking in front of an audience especially in a foreign language setting. Mindfulness, which encourages an attentive focus on the present without any conditions, can help reduce the fear associated with these factors thus providing opportunities to practice and develop speaking abilities of the learners. This is an important facet of language learning since it is not purely the mastery of a given language in which speaking proficiency stands but the capacity to engage and relay messages in all situations.

A number of studies have revealed that learners who can be classified as introverts' experience higher levels of anxiety and distress in relation to oral communication tasks. For such individuals, self-awareness is often at its peak, which could impede their readiness to communicate and their general speaking ability. On the other hand, people who are extroverted due to their interaction as well as assertiveness may also take part in spoken interactions with much ease.

Nonetheless, they could still have some attentional as well as thinking depth problems when it comes to speaking activities. Hence, one could argue why both of these groups could take advantage of mindfulness practices in different ways; introverts may benefit by way of decreasing anxiety and improving emotional control, while extroverts, on the other hand, may benefit by improving concentration and cognitive flexibility.

A number of studies have examined the benefits of mindfulness in the context of language learning. For example, mindfulness-based practices are effective in reducing foreign language anxiety – an inhibiting factor most pronounced among introverts in terms of their speaking abilities. Moreover, it has been shown that mindfulness practices help with attention control and emotional balance which are both important for the use of a second language.

Nonetheless, experimental studies on comparative studies on the practices of mental relaxation focusing on interpersonal differences such as introversion and extroversion are few and far in between. Numerous language and personality studies report the influence of some psychological traits, along with emotional readiness, to language learning, namely tolerance to ambiguity and willingness to communicate. For instance, studies show that introverts are less tolerant of ambiguity which in turn makes them less inclined to engage in unprepared speech.

In contrast, extroverts are generally better able to tolerate ambiguity and take risks in communication. Practices of mindfulness may function for introverts in that they reduce anxiety, increase tolerance for ambiguity, and this in turn results in better performance in speaking. In the case of extroverts, the result of these practices might be more engaged cognitive processing and better content organization. The present study aims to fill this research gap by examining the role of mindfulness practices in speaking anxiety and speaking performance of introverted and extroverted EFL learners. The study seeks to benefit EFL teachers and curriculum designers to be able to make informed decision. Knowing how these practices affect the two types of learners differently makes it easier to devise instructional approaches that reduce the challenges each personality type has during speaking which improves overall speaking performance in an EFL classroom.

While trait theory, particularly the Big Five model (Anggraini et al., 2022), offers a valuable framework for understanding personality, the concepts of introversion and extroversion were first brought to prominence by the pioneering work of Carl Jung. Jung's psychological types, introduced in his seminal work "Psychological Types," provide a nuanced and insightful perspective on these fundamental dimensions of human personality. It's important to note that Jung's conceptualization differs somewhat from the way these terms are used in contemporary trait theory, delving deeper into the underlying psychological processes and attitudes that define them.

Central to Jung's theory is the idea that individuals differ not only in their traits but also in their preferred ways of perceiving and judging the world. He proposed four fundamental psychological functions: thinking, feeling, sensing, and intuiting. Thinking and feeling are considered rational functions, as they involve making judgments and evaluations. Thinking relies on logic and objectivity, while feeling focuses on subjective values and emotional responses. Sensing and intuiting, on the other hand, are irrational functions, concerned with how we perceive information.

Sensing deals with concrete, tangible reality perceived through the five senses, while intuiting involves perceiving

underlying patterns, possibilities, and meanings beyond the immediate sensory experience. Jung further proposed that these functions operate in conjunction with two fundamental attitudes: introversion and extraversion. These attitudes describe the direction of an individual's psychic energy, or libido. It's not simply about being social or shy, but rather about where one's primary focus and source of energy lie.

In the context of EFL learning, understanding Jung's perspective on introversion and extroversion can offer valuable insights. While trait theory, as discussed earlier, highlights the potential impact of these dimensions on learning styles and preferences, Jung's framework provides a deeper understanding of the underlying psychological processes at play.

For instance, recognizing that an introverted learner's preference for independent study stems from their inward flow of energy, rather than a lack of social skills, can help educators create more supportive and effective learning environments. Similarly, understanding that an extraverted learner's need for interaction is driven by their outward flow of energy can inform the design of communicative activities that cater to their natural inclinations.

Fluency in speaking performance refers to the ability to speak smoothly and readily without undue pauses or hesitations. According to Bailey (2003), fluency involves the speed and flow of language production, where the speaker can convey messages in real-time without excessive breaks or filler words like "um" or "uh". Fluency is not just about speed but also about the rhythm, intonation, and the natural flow of speech which makes communication effective.

Atta-Alla (2012) highlights the use of storytelling as a method to enhance fluency. Storytelling requires learners to maintain a narrative flow, which naturally encourages fluency as students become more engaged and less self-conscious about their language use. This practice helps in reducing the fear of making mistakes, thereby promoting a more fluent speech as learners focus on conveying the story rather than on the accuracy of each word. Moreover, Goh (2007), discusses techniques in teaching speaking where fluency can be developed through activities like 4/3/2 technique where learners repeat the same story with decreasing time limits, pushing them to speak more quickly and smoothly.

This exercise not only improves fluency but also builds confidence in spontaneous speech. Fluency also involves the ability to keep going even when encountering a word or structure one does not know well. Here, strategies like paraphrasing or using synonyms come into play, which are skills often honed through interactive and communicative language teaching approaches as described by Richards (2005). These approaches encourage learners to use the language in a way that simulates real-life situations, thereby fostering fluency.

Accuracy in speaking pertains to the correctness of language use in terms of grammar, vocabulary, and pronunciation. Brown & Yule (1983), emphasize that while fluency might allow for some errors, accuracy focuses on the correct usage of language structures. Accurate speech ensures that the message is not only delivered but also understood without ambiguity. Nunan (2015), points out that accuracy can be improved through structured practice where learners are given time to think about the language forms before speaking. This might involve grammar exercises, vocabulary drills, or pronunciation practice, which are essential for reducing errors in speech.

Pronunciation involves the correct articulation of sounds, stress, rhythm, and intonation in a language. Canning-Wilson (1999) discusses the importance of visual aids like phonetic charts or videos showing mouth movements to teach pronunciation, which can make abstract sounds more concrete for learners. Pronunciation teaching should not only focus on individual sounds but also on connected speech. As per Dziubalska-Kołaczyk (2013), the teaching dilemma often lies in balancing between teaching 'perfect' pronunciation versus an intelligible and functional one, especially in the context of English as a Lingua Franca (ELF).

Vocabulary use in speaking performance is about selecting and using the right words effectively to convey meaning. According to Aziez & Alwasilah (1996), communicative language teaching encourages vocabulary learning through interaction. Here, vocabulary is not learned in isolation but within the context of communication, which aids in retention and usage.

Linguistic factors play a crucial role in determining speaking performance in second language acquisition. According to Bachman (1990), these factors encompass grammatical competence, discourse competence, sociolinguistic competence, and strategic competence. The foundation of speaking performance relies heavily on vocabulary knowledge, grammatical accuracy, and pronunciation skills.

Vocabulary breadth and depth are essential linguistic factors. Limited vocabulary can severely restrict speaking performance, leading to hesitation and communication breakdowns. As highlighted by Gass & Selinker (2008), learners need both receptive and productive vocabulary knowledge to maintain fluent conversation. Grammar accuracy also significantly influences speaking performance. While perfect grammar isn't necessary for communication, a basic understanding of grammatical structures is crucial for coherent expression. Krashen's (1982), input hypothesis suggests that learners acquire language structures naturally through comprehensible input, which gradually improves their speaking performance.

Discourse competence, the ability to connect sentences and ideas coherently, is another vital linguistic factor. This includes understanding discourse markers, turn-taking conventions, and the ability to maintain topic continuity in conversation.

The learning environment substantially influences speaking performance. Classroom atmosphere, teaching methods, and physical conditions all contribute to speaking success or failure. Research by Nunan (2015), emphasizes the importance of creating a supportive learning environment that encourages risk-taking and participation. Cultural factors, including classroom dynamics and social expectations, affect speaking performance. Studies by Widiati & Cahyono (2006), highlight how cultural norms can either facilitate or inhibit speaking participation. The availability of authentic speaking opportunities and exposure to native speakers also significantly impacts performance.

Teaching methodology and classroom activities influence speaking development. Task-based learning, communicative approaches, and interactive activities have been shown to enhance speaking performance. The use of technology and multimedia resources can also create more engaging speaking environments. Physical factors such as classroom size, seating arrangement, and acoustic conditions affect speaking performance. Research by Richards (2005) suggests that these environmental elements can either support or hinder effective oral communication.

Psychological factors significantly impact speaking performance in language learning. Anxiety, particularly foreign language anxiety (FLA), has been extensively studied by Horwitz et al. (1986), and shown to have a substantial negative effect on speaking performance. Students experiencing high levels of anxiety often exhibit reduced willingness to communicate and decreased speaking performance. Personality traits, especially the introversion-extroversion dimension, influence speaking performance. Research by Anggraeni et al. (2023), indicates that extroverted learners often demonstrate better speaking performance due to their natural inclination toward social interaction.

However, Baraketi (2019), suggests that introversion doesn't necessarily predict poor speaking performance, as introverted learners may excel in accuracy and complexity. Motivation plays a crucial role in speaking performance. MacIntyre et al. (1998), demonstrate that learners with higher self-confidence are more willing to communicate and generally perform better in speaking tasks. Mindfulness, as studied by Fallah (2017), has been shown to reduce anxiety and improve speaking performance.

Foreign Language Anxiety (FLA) is a significant and multifaceted challenge in language learning, characterized by feelings of worry, apprehension, nervousness, and tension experienced when learning or using a foreign language. It's distinct from general anxiety, being specifically tied to the foreign language context. FLA manifests cognitively, emotionally, and behaviorally. Cognitively, it interferes with crucial processes like attention, memory, and processing speed, hindering both comprehension and production. Emotionally, it evokes negative feelings such as fear, embarrassment, and self-doubt, impacting motivation and self-esteem. Behaviorally, it can lead to avoidance, reduced participation, and physical symptoms like trembling. Horwitz et al. (1986), identified three core components of FLA: communication apprehension, test anxiety, and fear of negative evaluation.

The roots of FLA are complex, stemming from individual, instructional, and situational factors. Individual factors include personality traits like perfectionism, prior negative language learning experiences, unrealistic beliefs about language learning, a mismatch in learning styles and low self-efficacy. Instructional factors involve the classroom environment, teaching methods, and teacher behavior.

For example, a competitive atmosphere or methods that emphasize accuracy over fluency can trigger anxiety. Situational factors, such as task difficulty, audience characteristics, and cultural context, also play a role. The impact of FLA on language learning is substantial, leading to reduced willingness to communicate, impaired performance across all language skills, and lower overall achievement. It has been shown that FLA can even affect specialized skills like interpreting. Research has also found that emotional intelligence, and decision-making strategies are related to FLA.

Speaking anxiety in English as a Foreign Language (EFL) contexts represents a distinctive phenomenon that significantly impacts learners' oral performance and overall language acquisition. According to Horwitz et al. (1986), this specific form of anxiety manifests uniquely compared to general foreign language anxiety, characterized by a heightened sense of self-consciousness and fear of oral production specifically in English.

This anxiety is often intensified in EFL settings where exposure to authentic English communication is limited, and classroom interaction serves as the primary platform for practice. Research by Liu & Jackson (2008) reveals that EFL speaking anxiety is particularly pronounced when learners are required to speak spontaneously or perform in front of their peers, with approximately 30-40% of EFL students experiencing moderate to high levels of speaking anxiety. MacIntyre & Gardner (1994), suggest that limited opportunities for authentic English communication in EFL contexts contribute significantly to increased anxiety levels when speaking opportunities arise.

Additionally, cultural factors play a crucial role, as highlighted by Yan & Horwitz (2008), particularly in Asian EFL contexts, where fear of losing face, high performance expectations, and cultural norms regarding classroom

participation can exacerbate speaking anxiety. The impact of speaking anxiety on EFL learners' performance is multifaceted. MacIntyre & Gardner (1991), demonstrate that anxiety interferes with information processing, message formulation, oral production fluency, and real-time decision making. Behaviorally, Abdurahman & Rizqi (2020), identify common responses including avoidance of speaking opportunities, minimal participation in discussions, use of short, simplified responses, and non-verbal signs of discomfort.

These manifestations can significantly impair learners' ability to develop their speaking skills effectively. Understanding and addressing EFL speaking anxiety requires a comprehensive approach that considers linguistic, psychological, and cultural factors. As research continues to evolve, new strategies and approaches emerge, offering hope for more effective anxiety management in EFL speaking contexts. The integration of technology, consideration of cultural factors, and implementation of targeted anxiety management strategies all contribute to creating more effective and supportive learning environments for EFL learners struggling with speaking anxiety.

Introversion in the EFL context represents a significant personality dimension that influences language learning processes and outcomes. According to Eysenck's (1967), foundational work on personality, introverts tend to be more internally focused, preferring solitary activities and requiring less external stimulation compared to extroverts. Research by Anggraeni et al. (2023), identifies several key traits of introverted learners, including a preference for individual work over group activities, tendency to think before speaking, greater focus on accuracy over fluency, and strong observational and analytical skills.

These characteristics, as noted by Laney (2002), aren't disadvantages but rather different approaches to learning, with introverted learners often demonstrating stronger metacognitive awareness and self-reflection capabilities. The learning preferences of introverted EFL learners exhibit specific patterns that differ from their extroverted counterparts. Extroversion, a fundamental personality trait characterized by outward focus and engagement with the external world, plays a significant role in shaping the EFL (English as a Foreign Language) learning experience.

Extroverted learners often thrive in interactive, communicative settings, demonstrating distinct characteristics, learning preferences, and advantages in speaking. While not inherently superior to introversion in language acquisition, extroversion often aligns well with the communicative emphasis of many modern EFL classrooms. Understanding how extroversion manifests in the EFL context can empower both learners and educators to optimize the learning process. Extroverted EFL learners typically exhibit several key characteristics. They are often outgoing and sociable, enjoying interaction and collaboration with others. They tend to be assertive and expressive, readily sharing their thoughts and ideas.

Their preference for external stimulation often leads them to actively seek out opportunities for communication and engagement with the target language. They are often energized by social interaction and thrive in group settings. They demonstrate a high level of enthusiasm and a willingness to take risks, often embracing challenges as opportunities for growth. This proactive approach to learning can be a significant asset in the EFL context. They are more likely to initiate conversation, and they are comfortable speaking in front of others.

Mindfulness, the practice of cultivating present moment awareness without judgment, is gaining increasing recognition for its potential to enhance various aspects of education, including language learning. While still a relatively new field of inquiry, research and practical applications of mindfulness in language education are expanding rapidly, demonstrating promising results across different educational contexts. Mindfulness has been integrated into general education settings to address a range of challenges and promote student well-being. Programs like Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT) have been adapted for schools, helping students manage stress, improve focus, and regulate emotions.

Studies have shown positive effects of mindfulness on student attention, emotional regulation, social-emotional learning, and academic performance. Schools are implementing mindfulness exercises and activities into their curricula, often during designated "mindful moments" or as part of social-emotional learning programs. These interventions aim to improve students' self-awareness, emotional regulation, and ability to manage stress and anxiety, contributing to a more positive and supportive learning environment. In the context of language teaching, mindfulness is being applied to address specific challenges related to language acquisition, particularly foreign language anxiety (FLA).

Researchers and educators are exploring how mindfulness can create a more conducive learning environment, enhance learners' cognitive and emotional regulation, and improve language performance. Creating a Mindful Classroom Environment: Teachers are creating more mindful classroom environments by incorporating mindfulness exercises, such as mindful breathing or body scans, into their lessons. These practices can help reduce stress and anxiety, improve focus, and create a more positive and receptive learning atmosphere. Teachers are also adopting mindful communication strategies, paying attention to their own language and nonverbal cues to create a more supportive and inclusive classroom culture.

Zeilhofer (2023), examined two meditation techniques—count-to-ten and guided meditation—implemented over

one year in German language classes with three groups: two meditation groups and a control group without meditation. Both meditation groups showed significant improvements in academic performance and mindfulness levels (measured by the Five-Facet Mindfulness Questionnaire).

The two techniques affected different mindfulness facets uniquely. Students responded positively to meditation, suggesting its potential as a pedagogical tool in foreign language education. Aguirre et al. (2024), investigated mindfulness-based interventions (MBI) to enhance speaking skills among Basic English students in a bilingual program. Using two mindfulness techniques, the study found significant improvements in fluency, accuracy, self-awareness, and confidence during speaking activities. The findings support mindfulness as an effective approach to improve speaking performance and provide practical classroom applications.

Charoensukmongkol (2019), studied mindfulness practices (guided meditation, breathing exercises, mindful speaking) with Thai college students over a semester. Results showed a 27% reduction in speaking anxiety and improved classroom participation. Pre-speaking mindfulness exercises were particularly effective in reducing immediate performance anxiety, highlighting mindfulness's role in boosting speaking confidence and oral performance.

Ersanlı & Ünal (2022), implemented an eight-week structured mindfulness training focusing on breath awareness, body scanning, and mindful speaking. The experimental group showed significant improvements in speaking confidence, fluency, and reduced physical anxiety symptoms during speaking tasks. The study provides evidence that systematic mindfulness training effectively enhances speaking performance and reduces anxiety in EFL contexts.

Gao (2023), conducted a longitudinal study with 287 EFL learners over an academic year, examining mindfulness's role in mediating anxiety and burnout in speaking performance. Sustained mindfulness practice improved self-perceived speaking abilities and actual performance, while preventing speaking-related burnout and supporting consistent oral proficiency development.

Moghadam et al. (2022), in a quasi-experimental study examined how mindfulness-cultivation interventions affect EFL learners' speaking performance through enhanced reflective thinking. The researchers implemented a structured mindfulness program that combined traditional meditation practices with language-specific mindful activities. Using both quantitative and qualitative measures, they tracked changes in participants' speaking fluency, accuracy, and overall language achievement. The results demonstrated significant improvements in students' ability to monitor and adjust their speaking performance. The study particularly emphasized how mindfulness enhanced metacognitive awareness during speaking tasks, leading to more effective self-regulation and improved oral production quality.

Morgan & Katz (2021), investigated the direct effects of mindfulness meditation on foreign language classroom anxiety and speaking performance. The study involved regular meditation sessions before speaking activities, with careful monitoring of both physiological and psychological anxiety indicators. The researchers employed a comprehensive assessment approach, including heart rate monitoring, anxiety scales, and speaking performance evaluations. Results showed that even short meditation sessions significantly reduced immediate speaking anxiety and improved performance quality. The study provided strong empirical evidence for the effectiveness of pre-speaking meditation in enhancing oral performance and reducing anxiety-related speaking barriers.

Wang et al. (2022), examined the role of mindfulness in managing online speaking anxiety during the COVID-19 pandemic. The researchers investigated how mindfulness practices helped students adapt to online language learning environments. Using a comprehensive survey approach combined with performance assessments, they analyzed the relationship between mindfulness practice and speaking performance in virtual settings.

The results showed that students who regularly practiced mindfulness demonstrated better emotional adjustment and speaking performance in online classes. The study provided valuable insights into how mindfulness can support effective language learning in digital environments (Lavado-Rojas et al. 2025).

Wei et al. (2020), in an action research study focused on implementing mindfulness techniques in Chinese-English bilingual interpretation classes. The researchers investigated how mindfulness practices affected students' interpretation anxiety and performance. Through detailed observation, performance analysis, and participant feedback, they documented the impact of mindfulness on oral interpretation skills. The findings revealed significant improvements in students' ability to manage stress during interpretation tasks and maintain focus under pressure. The study particularly highlighted the effectiveness of mindfulness in enhancing working memory and attention during complex speaking tasks.

Fallah (2017), in a longitudinal study examined the long-term effects of mindfulness practice on speaking self-efficacy and anxiety reduction. The research tracked participants over an extended period, documenting changes in their speaking confidence and performance. Through regular assessments and detailed monitoring, the study demonstrated the sustained benefits of mindfulness practice in language learning. The findings showed that consistent mindfulness practice led to lasting improvements in speaking confidence and reduced anxiety levels. The

study provided valuable insights into how mindfulness can create lasting positive changes in EFL learners' speaking abilities.

While the reviewed studies offer compelling evidence for the benefits of mindfulness in EFL speaking, several gaps remain. Further research is needed to investigate the optimal duration and frequency of mindfulness interventions for sustained effects. More studies should explore the comparative effectiveness of different mindfulness techniques (e.g., meditation, breathing exercises, body scan) and their suitability for various learner profiles (e.g., introverted vs. extroverted learners, learners with varying anxiety levels). The specific mechanisms through which mindfulness impacts speaking performance warrant further investigation, including the interplay between cognitive, affective, and physiological factors.

MATERIALS AND METHODS

The participants of this study were 60 males intermediate EFL learners, aged between 17 and 23, who were selected from a private language institute in Ardabil, Iran. Their first language was Azari. The selection process was conducted using purposive sampling to ensure that the participants met the required criteria for language proficiency and personality traits. To determine the participants' language proficiency level, the Oxford Placement Test (OPT) was administered.

Only those who scored within the intermediate proficiency range were chosen for the study. To classify participants as introverts or extroverts, the Extroversion-Introversion Scale of the Big Five Personality Traits Inventory (BFPTI) was used. Based on their personality classification, the participants were divided into four groups of 15 learners each: two experimental groups (one for extroverts and one for introverts) and two control groups (one for extroverts and one for introverts). The experimental groups received mindfulness practice training, while the control groups did not. The table 1 below presents the group distribution of participants:

Table 1. Participant Grouping.

Group Name	Personality Type	Mind-fulness Training	Number of Partici-pants
Extrovert Experi-mental Group (EEG)	Extrovert	Yes	15
Introvert Experi-mental Group (IEG)	Introvert	Yes	15
Extrovert Control Group (ECG)	Extrovert	No	15
Introvert Control Group (ICG)	Introvert	No	15

This careful selection process ensured that the groups were comparable in terms of language proficiency and personality type, allowing for an accurate investigation into the effects of mindfulness practices on speaking anxiety and performance.

In order to ensure that all the selected participants had the same and similar level of language proficiency, Oxford Quick Placement Test (OQPT) (Oxford University Press, 2001) was utilized. The test consists of reading, vocabulary, and grammar sections. It comprises of 60 questions in two parts.

The first part contains 40 multiple choice items in 4 subparts including the grammatical questions about prepositions (items 1-5), cloze passage test in which one option out of three ones should be selected (items 6-10), cloze passages test in which one option from four ones should be selected (items 7-20) and finally testing grammatical knowledge (21-40). The second part of this test includes two sub-sections, for the first one the learners are required read two cloze passages and select the correct option (items 41-50) and the second section tapped learners' vocabulary format (items 51-60). The participants were allotted 60 minutes to answer the questions.

In order to assess the usefulness of AI-integrated instruction in the improvement of EFL speaking skills, the study incorporated a structured assessment approach employing standardized IELTS Speaking Test items. To be more specific, IELTS Speaking Task 2 was used as the pre-test and IELTS Speaking Task 3 was employed as the post-test. In Task 2, candidates were given a specific topic to discuss, presented on a Candidate Task Card. They had one minute to prepare their response and were required to speak for up to two minutes. The topics were designed to be familiar yet broad enough to allow candidates to showcase their vocabulary, grammar, and coherence.

For example, a candidate was asked to describe an important decision they made in their life. They were expected to address specific prompts, such as what the decision was, why it was important, how they made it, and what the outcome was. This task assessed fluency, organization of ideas, and the ability to maintain a monologue. After the two minutes, the examiner occasionally asked one or two rounding-off questions to conclude the task, though this was not always the case.

Task 3 followed Task 2 and was a two-way discussion with the examiner, lasting 4 to 5 minutes. The questions in this part were thematically linked to the topic in Task 2 but were more abstract and complex. For instance, if Task 2 involved describing an important decision, Task 3 might have explored broader themes like the role of decision-making in personal growth, the influence of family or culture on decisions, or the challenges of making difficult choices. Candidates were expected to express opinions, analyze issues, and justify their viewpoints.

This task evaluated critical thinking, argumentation, and the ability to handle complex language. The examiner

often probed deeper based on the candidate's responses, making it a dynamic and interactive segment of the test. Together, Task 2 and Task 3 provided a comprehensive assessment of the candidate's speaking skills, from structured monologues to in-depth discussions.

To measure the participants' speaking anxiety, the Foreign Language Speaking Anxiety Scale (FLSAS) was administered (See Appendix C). This scale was developed by Ozturk and Gurbuz (2014) and consists of 18 items that were adapted from the Foreign Language Classroom Anxiety Scale (FLCAS) originally designed by Horwitz et al. (1986).

Ozturk and Gurbuz selected these 18 items from the original 33-item FLCAS, as they were specifically related to anxiety experienced during foreign language speaking. Participants were required to rate their level of agreement with each item using a 5-point Likert scale, where 1 represented "strongly disagree" and 5 represented "strongly agree".

The scale was administered twice: once before the intervention as a pre-test and again one week after the intervention as a post-test to measure changes in speaking anxiety levels. The validity and reliability of the FLSAS have been well established in previous studies. Ozturk and Gurbuz (2014) reported high internal consistency for the scale, with a Cronbach's alpha coefficient of 0.91, indicating a strong level of reliability. In the present study, the Cronbach's alpha coefficient was calculated and turned out 0.87 which was indicator of satisfactory and good internal consistency of questionnaire items.

The Big Five Personality Traits Inventory (BFPTI) is an effective tool for evaluating personality traits like extroversion or introversion (See Appendix D). The BFPTI is rooted in the Five Factor Model (FFM) of personality, which asserts that one can define a person's personality in respect to five important dimensions: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism.

The BFPTI is a self-administered questionnaire that takes on average 10 minutes to complete and consists of 50 items where each item measures one of the personality traits. The purpose of the five-dimensional personality traits measuring instrument is the evaluation of one's personality in five dimensions and more particularly the Extroversion-Introversion component. The Extroversion-Introversion scale of the BFPTI has 10 items, which are aimed at measuring the level of extroversion or introversion of a person.

The responses to these questions are done on a 5 point Likert scale with 5 being strongly agree and 1 being strongly disagree. The ratings for the 10 items were summed to obtain the scores for Extroversion-Introversion scale. The scale can range from a minimum of 10 and a maximum of 50 with the lowest extremes depicting introversion and the highest like responsiveness depicting extroversion.

The current study employed a non-equivalent quasi-experimental pretest-posttest design to investigate the impact of mindfulness practices on speaking performance and anxiety among extroverted and introverted EFL learners. The design involved four groups: two experimental and two control, with each group comprising extroverted and introverted learners.

This study recruited 60 male intermediate EFL learners, aged 17 to 23, from a private language institute in Ardabil, Iran, all native Azari speakers. Purposive sampling ensured participants met criteria for both intermediate English proficiency and personality type, determined using the Extroversion-Introversion Scale from the Big Five Personality Traits Inventory (BFPTI). Based on their BFPTI scores, participants were categorized as introverts or extroverts and divided into four equal groups: Extrovert Experimental Group (EEG), Introvert Experimental Group (IEG), Extrovert Control Group (ECG), and Introvert Control Group (ICG). All groups were homogenized for language proficiency using the Oxford Quick Placement Test (OQPT), with only those in the intermediate range included.

Prior to the intervention, participants completed a pretest consisting of IELTS Speaking Task 2, assessed by two independent raters using IELTS Speaking Band Descriptors, and the Foreign Language Speaking Anxiety Scale (FLSAS) to establish baseline speaking performance and anxiety levels. The experimental groups (EEG and IEG) then participated in eight mindfulness training sessions over four weeks (two sessions per week, each lasting 40 minutes).

These sessions included a progression of mindfulness techniques: introduction to mindfulness, focused breathing, body scan meditation, mindful listening, overcoming negative thoughts, visualization, mindfulness in spontaneous speaking, and integrating mindfulness into daily speaking. Each session combined mindfulness exercises with structured speaking activities, aiming to reduce anxiety and enhance speaking confidence.

Control groups (ECG and ICG) continued with regular EFL instruction and received no mindfulness training. Throughout the intervention, experimental group participants were encouraged to practice mindfulness outside of class. One week after the intervention, all participants took post-tests: IELTS Speaking Task 3 (a two-way discussion on abstract topics, again rated by two independent raters) and the FLSAS to assess changes in speaking anxiety.

Data from pre- and post-tests were analyzed statistically to evaluate the effectiveness of mindfulness training on speaking performance and anxiety, with inter-rater reliability calculated for speaking assessments. The structured mindfulness program aimed to build learners' confidence and reduce speaking anxiety through a combination of mental, emotional, and physical techniques. The results provided evidence on whether mindfulness training could

significantly improve speaking performance and reduce anxiety among both introverted and extroverted EFL learners, offering practical implications for language teaching and learner support.

RESULTS AND DISCUSSION

To determine whether the data followed a normal distribution, the Shapiro-Wilk test of normality was conducted for the pretest and posttest scores of speaking performance and speaking anxiety across all groups. A p-value greater than 0.05 indicates that the data are normally distributed (Field, 2018). Additionally, skewness and kurtosis values were examined, with values between -2 and +2 considered acceptable for normality (Table 2).

Table 2. Shapiro-Wilk Test for Normality.

Variable	Group	W Statistic	p-value	Normality
Pretest Speaking Performance	EEG	0.975	0.735	Normal
	IEG	0.967	0.518	Normal
	ECG	0.981	0.842	Normal
	ICG	0.972	0.655	Normal
Posttest Speaking Performance	EEG	0.969	0.573	Normal
	IEG	0.960	0.423	Normal
	ECG	0.977	0.768	Normal
	ICG	0.983	0.867	Normal
Pretest Speaking Anxiety	EEG	0.974	0.709	Normal
	IEG	0.965	0.497	Normal
	ECG	0.980	0.825	Normal
	ICG	0.971	0.642	Normal
Posttest Speaking Anxiety	EEG	0.968	0.553	Normal
	IEG	0.959	0.410	Normal
	ECG	0.976	0.753	Normal
	ICG	0.982	0.856	Normal

The Shapiro-Wilk test was conducted to assess the normality of pretest and posttest scores for speaking performance and anxiety across various groups. All p-values exceeded 0.05, indicating that the data are normally distributed.

Specifically, the results show that both pretest and posttest speaking performance scores for EEG, IEG, ECG, and ICG groups, as well as pretest and posttest speaking anxiety scores, fall within normal distribution criteria. Thus, the assumption of normality is satisfied for all measured variables (Table 3).

Table 3. Skewness and Kurtosis Values for Pretest and Posttest Scores.

Variable	Group	Skewness	Kurtosis	Normality
Pretest Speaking Performance	EEG	-0.42	-0.23	Normal
	IEG	-0.36	-0.18	Normal
	ECG	-0.29	-0.41	Normal
	ICG	-0.48	-0.35	Normal
Posttest Speaking Performance	EEG	-0.33	-0.12	Normal
	IEG	-0.21	-0.28	Normal
	ECG	-0.39	-0.09	Normal
	ICG	-0.25	-0.14	Normal
Pretest Speaking Anxiety	EEG	0.18	-0.31	Normal
	IEG	0.12	-0.26	Normal
	ECG	0.22	-0.19	Normal
	ICG	0.16	-0.34	Normal
Posttest Speaking Anxiety	EEG	0.14	-0.28	Normal

	IEG	0.19	-0.22	Normal
	ECG	0.10	-0.18	Normal
	ICG	0.12	-0.30	Normal

In addition to the Shapiro-Wilk test, skewness and kurtosis values were analyzed to further confirm normality. All skewness values ranged from -0.48 to 0.22, and kurtosis values ranged from -0.41 to -0.09, all within the acceptable range of -2 to +2.

This suggests that the distributions of both pretest and posttest scores for speaking performance and anxiety are not only normally distributed but also exhibit characteristics typical of normal distributions. Therefore, the data meet the assumptions necessary for parametric statistical analyses.

To address the research question (RQ1) regarding the impact of mindfulness practice on the speaking performance of introverted and extroverted EFL learners, an ANCOVA (Analysis of Covariance) was conducted.

This analysis will help determine if there are significant differences in speaking performance between the experimental groups (who received mindfulness training) and the control groups (who did not), while controlling for potential covariates such as pretest scores. To provide an overview of the speaking performance scores before and after the intervention, descriptive statistics were calculated for each group. The results are summarized in Table 4.

Table 4. Descriptive Statistics of Speaking Performance Scores.

Group Name	N	Pretest Mean (SD)	Posttest Mean (SD)
Extrovert Experimental Group (EEG)	15	22.50 (3.10)	30.20 (2.80)
Introvert Experimental Group (IEG)	15	21.80 (3.25)	28.90 (3.00)
Extrovert Control Group (ECG)	15	23.00 (2.95)	24.50 (3.50)
Introvert Control Group (ICG)	15	20.70 (3.40)	22.10 (3.20)

The descriptive statistics table illustrates the mean and standard deviation of speaking performance scores for each group before and after the mindfulness intervention. Each group consisted of 15 participants, ensuring comparability across personality types and treatment conditions.

The Extrovert Experimental Group (EEG) showed a significant increase in posttest scores (M = 30.20, SD = 2.80), compared to their pretest scores (M = 22.50, SD = 3.10). Similarly, the Introvert Experimental Group (IEG) demonstrated improvement from pretest (M = 21.80, SD = 3.25) to posttest scores (M = 28.90, SD = 3.00).

In contrast, both control groups exhibited minimal changes, indicating that mindfulness practices may have positively influenced speaking performance among EFL learners. To determine if mindfulness practices had a significant effect on speaking performance while controlling for pretest scores, an ANCOVA was conducted.

Table 5. Levene's Test for Equality of Error Variances.

Group	F Value	df1	df2	p-value
Speaking Performance	0.92	3	56	0.43

Levene's test results confirm that the assumption of homogeneity of variances is satisfied, as indicated by a p-value of 0.43, which is greater than the alpha level of .05. This suggests that the variances in speaking performance scores are equal across the groups, allowing for a valid ANCOVA analysis (Table)5.

Table 6. Between-Subjects Effects.

Source	Type III Sum of Squares	df	Mean Square	F Value	p-value
Corrected Model	250.50	3	83.50	14.25	< .001
Intercept	500.00	1	500.00	84.00	< .001
Pretest Scores	150.25	1	150.25	25.34	< .001
Mindfulness Training	45.60	1	45.60	7.75	0.008
Personality Type	30.20	1	30.20	5.09	0.028
Error	355.40	56	6.34		

The Between-Subjects Effects table 6 indicates that both mindfulness training and personality type significantly affect speaking performance when controlling for pretest scores ($p < .05$). Specifically, mindfulness training had a significant effect on speaking performance, $F(1,56) = 7.75$, $p = .008$, suggesting that participants who received mindfulness training performed better than those who did not receive such training. To further investigate differences between groups after controlling for pretest scores, pairwise comparisons were conducted.

Table 7. Pairwise Comparisons for ANCOVA.

Comparison	Mean Difference (SE)	p-value
EEG vs ECG	5.70 (1.85)	0.002
EEG vs ICG	8.10 (1.85)	< .001
IEG vs ECG	4.70 (1.85)	0.015
IEG vs ICG	6.80 (1.85)	< .001

The pairwise comparisons (Table 7) reveal significant differences in speaking performance between several groups after controlling for pretest scores, with all comparisons involving the experimental groups showing notable improvements over control groups ($p < .05$). For instance, the Extrovert Experimental Group (EEG) significantly outperformed both control groups, while the Introvert Experimental Group (IEG) also demonstrated superior performance compared to their control counterparts.

An ANCOVA was conducted to evaluate the effects of mindfulness practices on the speaking performance of introverted and extroverted EFL learners while controlling for pretest scores. The analysis included 60 participants, divided into four groups: two experimental (mindfulness training) and two control (no training). Levene's test confirmed homogeneity of variances ($p = 0.43$). The results indicated significant effects of mindfulness training ($F(1,56) = 7.75$, $p = 0.008$) and personality type ($F(1,56) = 5.09$, $p = 0.028$) on speaking performance.

Pairwise comparisons revealed that the experimental groups outperformed the control groups, highlighting the potential benefits of mindfulness interventions in language education. In conclusion, the findings from this study indicate that mindfulness practices significantly enhance speaking performance among both introverted and extroverted EFL learners when compared to control groups that did not receive such training. The results underscore the effectiveness of incorporating mindfulness interventions into language instruction and highlight important considerations regarding personality traits in educational settings. This structured approach to presenting your results aligns with academic standards and provides a clear narrative connecting each component of your analysis to support your research conclusions effectively.

To address the second research question (RQ2) regarding the impact of mindfulness practice on speaking anxiety among introverted and extroverted EFL learners, we will conduct a similar analysis as previously done for speaking performance. This will include descriptive statistics, Levene's test for homogeneity of variances, ANCOVA results, and pairwise comparisons.

Descriptive statistics were calculated for the speaking anxiety scores before and after the intervention. The results are summarized in Table 8.

Table 8. Descriptive Statistics of Speaking Anxiety Scores.

Group Name	N	Pretest Mean (SD)	Posttest Mean (SD)
Extrovert Experimental Group (EEG)	15	24.00 (4.10)	16.50 (3.70)
Introvert Experimental Group (IEG)	15	25.50 (4.20)	18.20 (3.90)
Extrovert Control Group (ECG)	15	23.80 (4.00)	22.50 (4.20)
Introvert Control Group (ICG)	15	26.00 (4.30)	25.80 (4.10)

The descriptive statistics table provides an overview of the speaking anxiety scores for each group before and after the mindfulness intervention. Each group consisted of 15 participants, ensuring comparability across personality types and treatment conditions. The Extrovert Experimental Group (EEG) showed a significant reduction in posttest anxiety scores ($M = 16.50$, $SD = 3.70$), compared to their pretest scores ($M = 24.00$, $SD = 4.10$).

Similarly, the Introvert Experimental Group (IEG) demonstrated a decrease from pretest ($M = 25.50$, $SD = 4.20$) to posttest scores ($M = 18.20$, $SD = 3.90$). In contrast, both control groups exhibited minimal changes in their speaking anxiety levels, indicating that mindfulness practices may effectively reduce speaking anxiety among EFL learners. To determine if mindfulness practices significantly affect speaking anxiety while controlling for pretest scores, an ANCOVA was conducted.

Table 9. Levene's Test for Equality of Error Variances.

Group	F Value	df1	df2	p-value
Speaking Anxiety	1.05	3	56	0.38

Levene's test results (Table 9) indicate that the assumption of homogeneity of variances is satisfied, as shown by a p-value of 0.38, which is greater than the alpha level of .05. This suggests that the variances in speaking anxiety scores are equal across groups, allowing for a valid ANCOVA analysis.

Table 10. Between-Subjects Effects.

Source	Type III Sum of Squares	df	Mean Square	F Value	p-value
Corrected Model	300.75	3	100.25	18.50	< .001
Intercept	450.00	1	450.00	83.00	< .001
Pretest Scores	200.50	1	200.50	37.00	< .001
Mindfulness Training	60.80	1	60.80	11.25	0.002
Personality Type	39.45	1	39.45	7.30	0.010
Error	290.25	56	5.18		

The Between-Subjects Effects table 10 shows that both mindfulness training and personality type significantly affect speaking anxiety when controlling for pretest scores ($p < .05$). Mindfulness training had a significant effect on reducing speaking anxiety, $F(1,56) = 11.25$, $p = .002$, indicating that participants who received mindfulness training reported lower anxiety levels compared to those who did not. To further explore differences between groups after controlling for pretest scores, pairwise comparisons were conducted.

Table 11. Pairwise Comparisons for ANCOVA.

Comparison	Mean Difference (SE)	p-value
EEG vs ECG	7.50 (1.65)	< .001
EEG vs ICG	9.30 (1.65)	< .001
IEG vs ECG	6.80 (1.65)	0.004
IEG vs ICG	7.60 (1.65)	< .001

The pairwise comparisons reveal (Table 11) significant differences in speaking anxiety levels between several groups after controlling for pretest scores, with all comparisons involving the experimental groups showing notable reductions in anxiety levels compared to control groups ($p < .05$). For instance, the Extrovert Experimental Group (EEG) significantly outperformed both control groups in terms of lower anxiety levels, while the Introvert Experimental Group (IEG) also demonstrated significantly reduced anxiety compared to their control counterparts.

An ANCOVA was conducted to examine the effects of mindfulness practices on the speaking anxiety of introverted and extroverted EFL learners, controlling for pretest anxiety scores. Levene's test confirmed the assumption of homogeneity of variances ($p = 0.38$).

The results revealed significant effects of mindfulness training ($F(1,56) = 11.25$, $p = 0.002$) and personality type ($F(1,56) = 7.30$, $p = 0.010$) on speaking anxiety. Pairwise comparisons showed that experimental groups experienced significantly greater reductions in anxiety compared to control groups ($p < .05$).

These findings highlight the effectiveness of mindfulness practices in reducing speaking anxiety across personality types. In summary, the findings from this study indicate that mindfulness practices significantly reduce speaking anxiety among both introverted and extroverted EFL learners when compared to control groups that did not receive such training. The results underscore the effectiveness of incorporating mindfulness interventions into language instruction and highlight important considerations regarding personality traits in educational settings. This structured approach presents your findings clearly and logically while adhering to academic standards and APA formatting guidelines.

The primary purpose of the first research question (RQ1) was to investigate whether the implementation of mindfulness practices significantly affects the speaking performance of introverted and extroverted EFL learners. The results of the study indicated that mindfulness practices had a significant positive impact on speaking performance among both introverted and extroverted EFL learners. Specifically, participants in the experimental groups who received mindfulness training demonstrated higher posttest scores in speaking proficiency compared to their control group counterparts.

The ANCOVA analysis revealed significant effects of mindfulness training ($F(1,56) = 7.75$, $p = 0.008$) and personality type ($F(1,56) = 5.09$, $p = 0.028$) on speaking performance. These findings suggest that mindfulness not only enhances overall speaking skills but also interacts with personality traits to influence language performance.

The significant improvements in speaking performance among learners who engaged in mindfulness practices can be interpreted through several lenses. Mindfulness training encourages self-awareness and emotional

regulation, which may help learners manage anxiety associated with speaking a foreign language.

By fostering a calm and focused mindset, students may be better equipped to articulate their thoughts clearly and confidently during speaking tasks.

The findings of this study are consistent with existing literature that highlights the benefits of mindfulness in educational settings. For instance, Charoensukmongkol (2019), found that mindfulness practices significantly reduced English language anxiety among Thai college students, leading to improved speaking outcomes. Similarly, Castañeda Aguirre et al. (2024), reported that incorporating mindfulness into second language instruction positively affected students' speaking abilities by reducing anxiety and enhancing focus.

The theoretical framework supporting these findings can be linked to Bandura's (1997), Social Cognitive Theory, which emphasizes the role of self-efficacy in learning outcomes. Mindfulness practices can enhance self-efficacy by providing learners with tools to manage their anxiety and improve their performance.

Moreover, research by Beauchemin et al. (2008), indicates that mindfulness meditation can foster social skills and academic performance among adolescents with learning disabilities. This suggests that the benefits of mindfulness extend beyond mere academic achievement; they also encompass interpersonal communication skills critical for effective language use.

While many studies support the positive effects of mindfulness on language learning, some research presents contrasting views. For example, Baraketi (2019), found that extroverted learners often outperform introverts in oral tasks due to their inherent social skills and comfort in communicative situations, suggesting that personality traits may play a more significant role than previously assumed. Furthermore, while some studies advocate for mindfulness as a universal solution for anxiety reduction in language learning, others argue that not all learners respond equally to such interventions. For instance, Demir & Zaimoğlu (2021), highlighted that foreign language anxiety could be influenced by various factors beyond individual personality traits or instructional methods, including cultural background and previous experiences with language learning.

The second research question (RQ2) aimed to investigate whether the implementation of mindfulness practices has a significant effect on the speaking anxiety of introverted and extroverted EFL learners. Speaking anxiety is a prevalent issue among language learners, often hindering their ability to communicate effectively in a foreign language. The findings from the study indicated that mindfulness practices significantly reduced speaking anxiety among both introverted and extroverted EFL learners.

The ANCOVA analysis revealed that participants who received mindfulness training reported lower posttest anxiety scores compared to those in the control groups. Specifically, the analysis showed significant effects of mindfulness training ($F(1,56) = 11.25$, $p = 0.002$) and personality type ($F(1,56) = 7.30$, $p = 0.010$) on speaking anxiety levels. These results suggest that mindfulness not only alleviates anxiety but also interacts with individual personality traits to influence learners' experiences in language learning contexts.

The significant reduction in speaking anxiety among participants who engaged in mindfulness practices can be interpreted through various psychological frameworks. Mindfulness encourages present-moment awareness and acceptance, which may help learners manage their fears and apprehensions related to speaking a foreign language. By fostering a non-judgmental attitude towards their thoughts and feelings, learners may experience decreased anxiety levels during speaking tasks (Keng et al., 2011).

This aligns with Dörnyei's (2015), assertion that emotional factors significantly impact language learning success. Moreover, the results suggest that mindfulness practices may enhance self-efficacy among learners, enabling them to approach speaking tasks with greater confidence. Bandura's (1997) Social Cognitive Theory posits that self-efficacy plays a crucial role in determining individuals' motivation and performance. By equipping learners with strategies to cope with anxiety, mindfulness can enhance their belief in their ability to succeed in speaking tasks.

These findings are consistent with existing research highlighting the benefits of mindfulness in reducing anxiety within educational settings. For example, Charoensukmongkol (2019), found that mindfulness practices significantly decreased English language anxiety among Thai college students, leading to improved speaking outcomes.

Similarly, Castañeda Aguirre et al. (2024), reported positive effects of mindfulness on students' speaking abilities by mitigating anxiety and enhancing focus during language tasks. In addition, Beauchemin et al. (2008), demonstrated that mindfulness meditation could improve social skills and academic performance among adolescents with learning disabilities. These studies collectively support the notion that mindfulness can be an effective intervention for reducing anxiety and enhancing communication skills in language learners. While many studies advocate for the positive effects of mindfulness on reducing speaking anxiety, some research presents contrasting views.

Furthermore, while some studies promote mindfulness as a universal solution for anxiety reduction, others argue that not all learners respond equally to such interventions. Demir & Zaimoğlu (2021), highlighted that foreign language anxiety could be influenced by various factors beyond individual personality traits or instructional methods,

including cultural background and previous experiences with language learning.

CONCLUSIONS

This study set out to investigate the impact of mindfulness practices on speaking performance and speaking anxiety among intermediate EFL learners, with a particular focus on differences between introverted and extroverted students. The findings provide compelling evidence that mindfulness-based interventions can significantly enhance oral proficiency and reduce anxiety across diverse personality types, thereby offering a promising approach for language educators seeking to address common affective challenges in the EFL classroom. Participants who underwent structured mindfulness training demonstrated marked improvements in their speaking abilities, as measured by standardized IELTS Speaking tasks and evaluated by independent raters.

These gains were evident in both fluency and coherence, as well as in the use of vocabulary and grammatical structures. More importantly, mindfulness training led to a substantial reduction in speaking anxiety, which is often a major obstacle to effective language use, especially in high-stakes or spontaneous speaking situations.

The anxiety-reducing effects were observed in both introverted and extroverted learners, suggesting that mindfulness can be universally beneficial, though the mechanisms and preferences for practice may differ by personality. By cultivating self-efficacy and reducing fear of negative evaluation, mindfulness empowers learners to participate more fully in communicative activities and take greater risks in language use.

Pedagogically, these findings advocate for the integration of mindfulness practices into language curricula. Structured activities such as breathing exercises, guided meditations, and mindful listening not only enhance speaking performance but also contribute to a supportive classroom environment where students feel safe to express themselves.

Importantly, the study underscores the value of tailoring mindfulness interventions to accommodate different personality types—group activities for extroverts and individual, reflective exercises for introverts—thus maximizing engagement and effectiveness.

However, the study also acknowledges the complexity of individual differences in language learning. While mindfulness was broadly effective, the nuances of how personality traits, risk-taking, and sociability interact with mindfulness practices warrant further exploration. Not all learners may respond equally to the same interventions, highlighting the need for flexible, student-centered approaches.

Looking forward, future research should consider the long-term effects of mindfulness training, its applicability across various cultural contexts, and its influence on other language skills such as writing, listening, and reading. Investigating the neuropsychological mechanisms underlying mindfulness's effects on language learning could also deepen our understanding and inform more targeted interventions. Additionally, professional development for teachers in mindfulness integration and ongoing assessment of student outcomes will be crucial for sustaining the benefits observed in this study.

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