

Public Speaking Anxiety among University Students: A Systematic Literature Review of Contributing Factors, Causes, Pedagogical Interventions, and Innovative Reduction Strategies

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ABSTRACT

Public speaking anxiety is a persistent challenge among university students and may negatively affect academic participation, oral performance, confidence, and willingness to communicate. This systematic literature review (SLR) synthesizes empirical evidence on the contributing factors, causes, pedagogical interventions, and innovative strategies associated with reducing public speaking anxiety among university and EFL students. Following the PRISMA framework, a systematic search was conducted using Scopus and Web of Science databases, generating 396 records. After screening and eligibility assessment, 23 studies were included for qualitative synthesis. The selected studies were evaluated using six quality-assessment criteria and demonstrated scores ranging from 75.0% to 100.0%. The findings were organized into four themes: (1) factors associated with public speaking anxiety, (2) causes of public speaking anxiety, (3) pedagogical interventions, and (4) innovative reduction strategies. The review identifies low self-esteem, limited confidence, linguistic difficulties, fear of negative evaluation, fear of failure, demographic characteristics, inadequate preparation, and audience or lecturer-related concerns as prominent contributors. Evidence further indicates that structured practice, peer feedback, instructor guidance, supervised presentations, self-reflection, and communication workshops can reduce anxiety and strengthen oral competence. Innovative approaches, particularly virtual reality, AI-supported feedback, and technology-enhanced learning, also demonstrate promising effects, although resilience enhancement alone may not specifically reduce public speaking apprehension. The review highlights the need for integrated, learner-centred, and context-sensitive approaches combining psychological, linguistic, pedagogical, and technological support.

Keywords: Public speaking anxiety; University students; Communication apprehension; Pedagogical interventions; Virtual reality

INTRODUCTION

Background of the study

Public speaking anxiety is a significant challenge among university students, particularly when students are required to deliver oral presentations in academic settings. The reviewed literature indicates that anxiety is a multifaceted phenomenon shaped by psychological, linguistic, social, demographic, and contextual factors. Students may experience anxiety because of low self-esteem, limited confidence, negative self-perception, inadequate vocabulary and pronunciation, fear of failure, and concerns about audience evaluation. For example, Abed (2022) identified a strong relationship between communication apprehension and self-esteem, while Al Hanake (2024) highlighted linguistic difficulties as important contributors to speaking anxiety. Similarly, Lintner and Belovecová (2024) demonstrated that demographic characteristics, including gender and study level, may influence public speaking anxiety. The problem is particularly relevant in EFL contexts, where limited

language proficiency may intensify students' fear of making mistakes and being negatively evaluated.

Statement of Problem & Research Gap

Despite growing research on public speaking anxiety, existing studies tend to examine particular dimensions of the problem separately. Some focus on individual and linguistic factors, while others investigate audience influences, pedagogical strategies, or technology-based interventions. Studies such as Grieve et al. (2021), Rahman et al. (2024), and Roslim et al. (2023) demonstrate the importance of fear of judgment, social evaluation, and classroom contexts, whereas Gürbüz and Cabaroğlu (2021) and Maldonado et al. (2022) emphasize structured practice and educational interventions. More recent studies have explored innovative approaches, particularly virtual reality and technology-enhanced learning, with promising results (Chen, 2024; Tatlı & Karadağ, 2024; Balachandran et al., 2024). However, the literature remains fragmented, and there is a need for an integrated synthesis connecting contributing factors and causes with pedagogical and innovative reduction strategies. This SLR therefore addresses this gap by synthesizing 23 studies and organizing the evidence into four interconnected dimensions: factors, causes, pedagogical interventions, and innovative ways to reduce public speaking anxiety.

Research Questions

Research questions are important to a systematic literature review (SLR). The questions provide the foundation and direction for the entire review process. A well-defined research question ensures that the literature search is exhaustive and systematic, covering all relevant studies that address key aspects of the topic (Kitchenham, 2007). The research questions in this SLR are formulated based on the PICO framework. This framework is a mnemonic style used to formulate research questions, particularly in qualitative research, proposed by Lockwood et al. (2015). PICO stands for Population, Interest, and Context. This SLR is done to answer the four research questions below;

RQ1 What factors are associated with public speaking anxiety among university students?

RQ2 What are the main causes of public speaking anxiety among university students, particularly in EFL and English-speaking contexts?

RQ3 What pedagogical interventions have been used to reduce public speaking anxiety among university students?

RQ4 What innovative approaches, including technology-enhanced methods, have been used to reduce public speaking anxiety among university students?

LITERATURE REVIEW

Theoretical Framework

Communication Apprehension Theory

McCroskey's Communication Apprehension (CA) Theory (1997) provides a useful theoretical foundation for understanding the factors associated with public speaking anxiety among university students. The theory conceptualizes communication apprehension as an individual's fear or anxiety related to actual or anticipated communication with others, which can vary according to the communication context and individual characteristics. From this perspective, public speaking anxiety may be influenced by students' self-perceptions, confidence, communication competence, audience characteristics, and previous experiences. The selected studies support these dimensions. For example, Abed (2022) found a strong relationship between communication apprehension and self-esteem, suggesting that students' perceptions of themselves can influence their communication fear. Similarly, Abdullah et al. (2024) identified low self-esteem, lack of confidence, shyness, nervousness, language difficulties, and concerns about audience attention as factors contributing to anxiety. Roslim et al. (2023) further highlighted personality traits, fear of failure, presentation skills, and audience-related concerns as important factors. These findings are consistent with McCroskey's perspective that apprehension is

shaped by both individual predispositions and communication contexts. Thus, CA Theory offers a coherent framework for explaining why university students experience different levels of anxiety when required to speak publicly.

Cognitive Appraisal Theory

Cognitive Appraisal Theory, as discussed by McCarthy et al. (2000), provides a useful framework for explaining the causes of public speaking anxiety by emphasizing how individuals interpret and evaluate potentially stressful situations. From this perspective, anxiety is influenced not only by the speaking situation itself but also by students' perceptions of threat, their anticipated consequences, and their perceived ability to cope with the demands of public speaking. When university students perceive presentations as threatening because they may make mistakes, receive negative evaluation, or fail to respond adequately to questions, their anxiety may increase. The studies reviewed provide evidence consistent with this perspective. Grieve et al. (2021) identified fear of being judged and uncertainty about the topic as important sources of students' public speaking fear. Similarly, Roslim et al. (2023) reported that fear of failure, concerns about language performance, and anxiety about presenting before peers contributed to students' apprehension. Abdullah et al. (2024) also identified nervousness, low confidence, language difficulties, and lack of preparation as factors that can intensify anxiety. Furthermore, Al Samman (2022) found that audience attitudes and evaluations were particularly influential determinants. Thus, Cognitive Appraisal Theory helps explain how students' interpretation of public speaking demands and their perceived coping resources can contribute to the development of public speaking anxiety.

Social Cognitive Theory

Bandura's Social Cognitive Theory (2012) provides a strong theoretical foundation for understanding how pedagogical interventions can reduce public speaking anxiety among university students. The theory emphasizes the reciprocal interaction between personal factors, behaviour, and the learning environment, with self-efficacy playing an important role in shaping students' motivation and confidence to perform challenging tasks. In public speaking contexts, students may experience anxiety when they perceive their speaking abilities as inadequate; therefore, pedagogical strategies that provide guided practice, constructive feedback, peer support, modelling, and successful speaking experiences can strengthen self-efficacy and reduce anxiety. The selected studies provide evidence consistent with this perspective. Le and Ho (2025) recommended structured peer review and instructor-led guidance to improve students' confidence and competence, while Kamata et al. (2025) emphasized collaborative learning, peer assistance, and structured oral activities. Similarly, Gürbüz and Cabaroğlu (2021) found that supervised oral presentations, self-reflection, and peer evaluation helped students overcome speaking anxiety and improve their language skills. Most importantly, Maldonado et al. (2022) demonstrated that educational and psychoeducational interventions improved oral competence and confidence while reducing anxiety, with communication workshops producing particularly effective outcomes. Thus, Social Cognitive Theory explains how supportive and interactive pedagogical environments can enhance self-efficacy and gradually reduce public speaking anxiety.

Exposure Therapy Theory

Exposure Therapy Theory, as discussed by Garner et al. (2021), provides a relevant theoretical basis for understanding innovative approaches to reducing public speaking anxiety, particularly those involving controlled and repeated exposure to feared speaking situations. The theory suggests that anxiety can be managed when individuals are gradually exposed to anxiety-provoking situations in a safe and controlled environment, allowing them to become more familiar with the feared situation and develop greater confidence in managing it. This perspective is particularly relevant to the use of virtual reality (VR) for public speaking anxiety because VR can simulate realistic presentation environments without requiring students to immediately face a real audience. The reviewed studies provide supporting evidence for this approach. Tatlı and Karadağ (2024) found that VR-assisted distraction produced significantly greater reductions in anxiety than the comparison conditions. Similarly, Balachandran et al. (2024) developed a realistic VR classroom environment that simulated audience interaction and presentation activities, reporting a significant reduction in public speaking anxiety following VR exposure. Chen (2024) also found evidence for the potential of VR and AI-supported learning in reducing anxiety. Therefore, Exposure Therapy Theory provides a useful framework for explaining how immersive,

controlled, and repeated exposure through innovative technologies can help university students manage and reduce public speaking anxiety.

Conceptual Framework

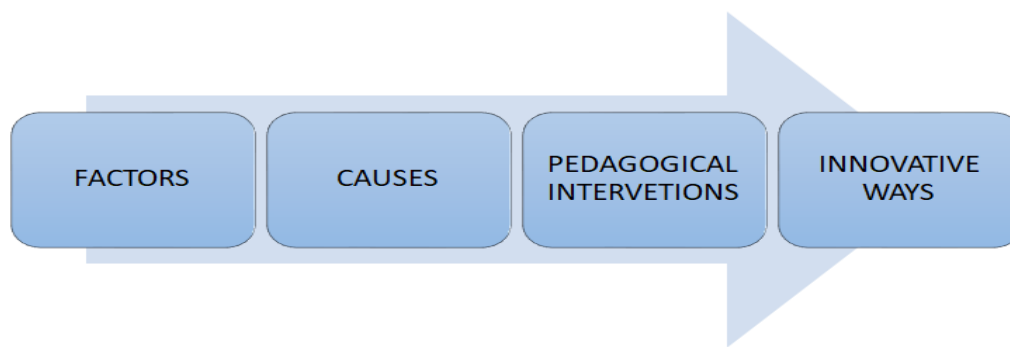


Figure 1 – Conceptual Framework of the Study

The conceptual framework (refer to Figure 1) for this systematic literature review (SLR) is organized around four interconnected themes, as illustrated in the diagram: factors → causes → pedagogical interventions → innovative ways to reduce public speaking anxiety. The framework proposes a logical progression from understanding the conditions associated with students' anxiety to identifying approaches that can address and reduce it. The first theme, factors for public speaking anxiety, is anchored in Communication Apprehension Theory by McCroskey (1997). This theory provides a basis for examining individual and contextual factors associated with communication-related fear, including self-esteem, confidence, linguistic competence, personality characteristics, and audience-related concerns. The reviewed studies identified these factors among university students, particularly in EFL contexts.

The second theme concerns the causes of public speaking anxiety, supported by Cognitive Appraisal Theory by McCarthy et al. (2000). This perspective emphasizes students' interpretation and evaluation of public speaking situations. Anxiety may emerge when students perceive presentations as threatening and believe that their ability to cope with the demands is insufficient. The reviewed literature identifies fear of being judged, fear of failure, uncertainty about topics, linguistic difficulties, lack of preparation, negative self-perception, and concerns about audience or lecturer evaluation as important causes.

The third theme focuses on pedagogical interventions, underpinned by Social Cognitive Theory by Bandura (2012). The framework suggests that supportive learning environments can strengthen students' confidence through guided practice, peer interaction, instructor feedback, supervised presentations, self-reflection, and communication workshops. Evidence from the reviewed studies indicates that such approaches can improve oral skills and confidence while reducing speaking anxiety.

Finally, the fourth theme addresses innovative ways to reduce public speaking anxiety, anchored in Exposure Therapy Theory by Garner et al. (2021). This perspective supports controlled and repeated exposure to anxiety-provoking speaking situations. Accordingly, VR simulations, VR-assisted distraction, AI-supported feedback, and technology-enhanced learning provide alternative environments for students to practise public speaking. The reviewed evidence particularly indicates promising effects of VR-based approaches in reducing anxiety.

MATERIAL AND METHODS

For conducting systematic literature reviews, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approach is a widely accepted standard that guarantees transparency, completeness, and consistency throughout the procedure by Page et al., (2021) guide how to systematically identify, screen, and include studies in their review. In the context of this SLR, the writers involved in this article act as researchers and work together to analyse the articles deemed relevant for the title. Two important databases, Web of Science and Scopus, were used in this analysis because of their wide coverage and robustness.

The PRISMA approach is organized into four key stages: (i) identification, (ii) screening, (iii) eligibility, and (iv) data abstraction. In the identification phase, databases are searched to locate all relevant studies. The screening phase then involves evaluating these studies against predefined criteria to eliminate irrelevant or low-quality research. During the eligibility phase, the remaining studies are thoroughly assessed to confirm they meet the inclusion criteria. Finally, data abstraction focuses on extracting and synthesizing data from the included studies, which is essential for deriving meaningful and reliable conclusions. This structured method ensures that the systematic review is conducted with rigor, leading to trustworthy results that can guide future research and practice. The PRISMA framework lists three main stages for analysis: (i) identification, (ii) screening, (iii) eligibility, (iv) data abstraction and analysis, as well as (v) quality of appraisal.

Identification

In accordance with the PRISMA framework, the identification phase represents a critical starting point in the systematic literature review process, as it is designed to ensure exhaustive coverage of relevant studies while reducing the risk of selection bias. In this study, a structured and comprehensive search was conducted across two leading bibliographic databases, Scopus and Web of Science (WoS), using the keywords “**public speaking anxiety**”, “**university**”, “**coping strategies**”. Table 1 below shows the search string.

These databases were deliberately selected because of their extensive multidisciplinary coverage, stringent indexing criteria, and strong representation of high-quality, peer-reviewed journals. The search process resulted in the retrieval of 340 records from Scopus and 56 records from Web of Science, yielding a combined total of 396 records prior to the removal of duplicates.

The higher number of results obtained from Scopus can be attributed to its broader inclusion of journals and stronger coverage in the social sciences, whereas WoS contributed a more targeted collection of highly cited and methodologically rigorous studies. As shown in Table 1, the identification of 396 records reflects the growing interest in **public speaking anxiety**, **university**, **coping strategies** and highlights the conceptual diversity of research spanning linguistic, pedagogical, and psychological perspectives. Employing multiple databases enhances the methodological robustness of the review by minimizing database-specific bias and increasing the likelihood of capturing diverse research traditions and geographical contexts.

Additionally, the use of carefully designed search terms ensured sensitivity to terminological variation while maintaining alignment with the review’s objectives. Overall, this transparent and systematic identification process establishes a strong foundation for subsequent screening and eligibility stages, consistent with PRISMA standards and expectations for rigorous, replicable research

Table 1 The search string.

Scopus	TITLE-ABS-KEY (("oral presentation" OR "public speaking" OR "presentation skills") AND (university OR "higher education" OR college OR "academic institution") AND (fear OR anxiety OR "stage fright" OR "performance anxiety"))
Web of Science	TITLE-ABS-KEY (("oral presentation" OR "public speaking" OR "presentation skills") AND (university OR "higher education" OR college OR "academic institution") AND (fear OR anxiety OR "stage fright" OR "performance anxiety")) Extracted Sept 2026

Screening

During the screening stage of the systematic literature review, potentially relevant studies were evaluated to ensure their alignment with the four established research questions. This phase focused on refining the initial pool of records by removing duplicates and applying predefined inclusion and exclusion criteria. Following the initial review, 344 publications were excluded for failing to meet the scope and relevance requirements of the study, leaving 52 (Scopus=43; WoS; 9) articles for further consideration, as outlined in Figure 2. The primary inclusion criterion was the type of literature, with priority given to scholarly sources that offer substantive and empirical insights. As a result, materials such as book reviews, book series, meta-syntheses, meta-analyses,

conference proceedings, and book chapters not directly related to the core focus of the review were excluded. To ensure consistency and relevance to contemporary academic discourse, only peer-reviewed publications written in English and published between 2021 and 2026 were retained. Additionally, a duplication check led to the removal of 0 repeated record across the databases. This systematic and criteria-driven screening process enhanced the focus and quality of the evidence base, ensuring that only the most relevant and methodologically sound studies progressed to the subsequent stages of analysis.

Eligibility

For the third step, known as eligibility, a total of 52 articles have been prepared. All articles' titles and key content were thoroughly reviewed at this stage to ensure that the inclusion requirements were fulfilled and fit into the present study with the current research aims. Therefore, two reports were omitted because they were not pure science articles based on empirical evidence. Finally, 23 articles are available for review (see Table 3).

Table 3 The Selection Criterion Is Searching

Criterion	Inclusion	Exclusion
Language	English	Non-English
Time line	2021 – 2026	< 2021
Literature type	Journal (Article)	Conference, Book, Review
Publication Stage	Final	In Press
Subject Area	Public speaking anxiety, university, coping straetgies	Besides Public speaking anxiety, university, coping straetgies

Data Abstraction and Analysis

An integrative analysis was used as one of the assessment strategies in this study to examine and synthesize a variety of research designs (quantitative, qualitative, and mixed methods). To develop themes, the authors carefully analyzed 23 publications for relevant material related to the study's topics. They examined the methodology and research results of significant studies on **public speaking anxiety, university, and coping strategies**. The authors collaborated to develop themes based on the evidence presented throughout the study. They kept a log of their data analysis process to document relevant perspectives, analyses, or ideas. The authors ensured consistency in theme design by comparing the results and discussing disagreements between themselves. This expert review phase established the validity of each subtheme by ensuring clarity, importance, and suitability (Refer to Appendix 1).

Quality of Appraisal

According to Kitchenham and Charters (Kitchenham, 2007), the researchers need to assess the quality of the research chosen. The next stage is applying quality asseesment suggested by Abouzahra et al., (2020), which consitst of six questions complying to a scoring procedure for evaluating each criteria. The possible raitngs are ; "Yes" (Y) with a score of 1 if the criterion is fully met, "Partly" (P) with a score of 0.5 if the criterion is somewhat met but contains some gaps or shortcomings, and "No" (N) with a score of 0 if the criterion is not met at all.

Table 3- Possible ratings for 6 question by Abouzahra et al., (2020),

No	Question
QA1	Is the purpose of the study clearly stated?

QA2	Is the interest and the usefulness of the work clearly presented?
QA3	Is the study methodology clearly established?
QA4	Are the concepts of the approach clearly defined?
QA5	Is the work compared and measured with other similar work?
QA6	Are the limitations of the work clearly mentioned?

Each writer independently assesses the study according to these criteria, and the scores are then totalled across all experts to determine the overall mark. For a study to be accepted for the next process, the total mark, derived from summing the scores from all three experts, must exceed 3.0. This threshold ensures that only studies meeting a certain quality standard proceed further. The results are shown in Table 4.

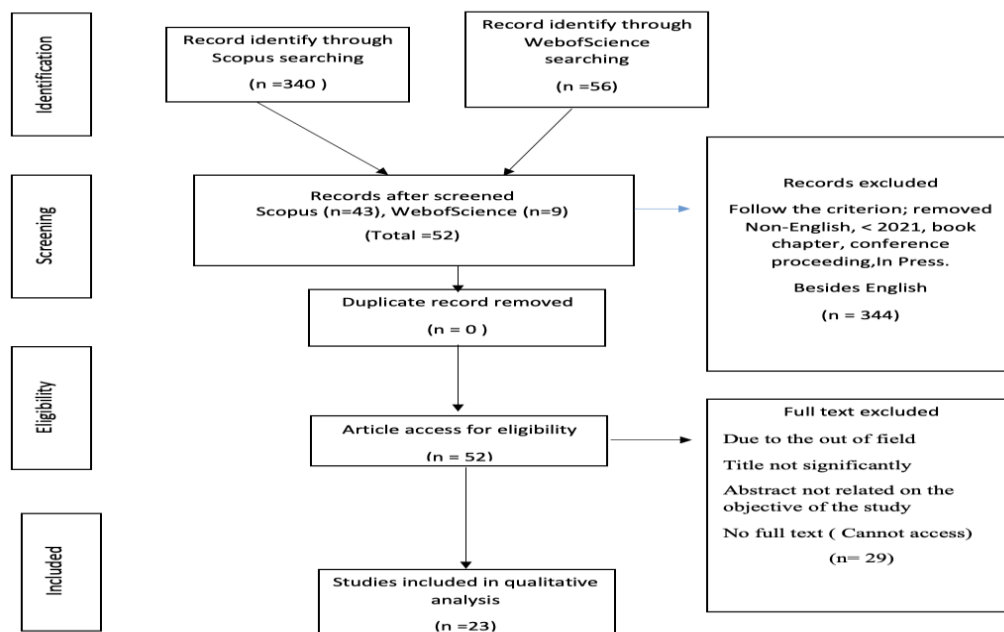


Figure 2. Flow diagram of the proposed searching study (Moher D, Liberati A, Tetzlaff J, 2009)

Figure 2 illustrates the study selection process using a PRISMA-style flow diagram. Initially, 340 records were identified through Scopus and 56 through Web of Science. After screening, 52 records remained, with no duplicate records removed. Eligibility assessment involved accessing the full texts of all 52 articles. Subsequently, 29 articles were excluded because they were outside the study scope, had irrelevant titles or abstracts, or lacked accessible full texts. Ultimately, 23 studies were included in the qualitative analysis, following the specified language, publication year, and document-type criteria.

RESULT AND FINDING

Quality of Assessment

Table 4 shows the result of the assessment performance for 23 selected primary studies. The overall quality of the articles is as follows;

- **High quality (≥80%):** Majority of studies
- **Moderate quality (60–79%):** Conceptual or descriptive studies
- **Lower quality (<60%):** Primarily survey-only or exploratory abstracts

Table 4- Quality Assessemnt for the selected 23 documents

PS	Author and year	Title of document	QA1	QA2	QA3	QA4	QA5	QA6	Total Mark	Percentage (%)
PS1	Abdullah et al. (2024)	<i>Difficulties Faced by Undergraduate Students in English Public Speaking at a Malaysian University</i>	Y	Y	Y	Y	P	N	4.5	75.0%
PS2	Abed (2022)	<i>Measuring the Correlation That Exists between Communication Apprehension and Self-Esteem among University Students in Saudi Arabia</i>	Y	Y	Y	Y	P	P	5.0	83.3%
PS3	Al Hanake (2024)	<i>Examining Foreign Language Learners' Speaking Anxiety: The Case of English L2 Learners</i>	Y	Y	Y	Y	P	Y	5.5	91.7%
PS4	Al Samman (2022)	<i>Exploring Students' Anxiety Determinants in English Oriented Educational Programs</i>	Y	Y	Y	Y	P	N	4.5	75.0%
PS5	Al Awaji et al. (2025)	<i>Impact of Resilience Enhancement on Communication Apprehension among Health Communication Sciences Students during the COVID-19 Pandemic: An Experimental Study</i>	Y	Y	Y	Y	Y	Y	6.0	100.0%
PS6	Alnaeem (2025)	<i>The Power of Self-Talk for Speaking Anxiety Reduction Among EFL Learners</i>	Y	Y	Y	Y	P	N	4.5	75.0%
PS7	Balachandran et al. (2024)	<i>A Virtual Reality Approach to Overcome Glossophobia among University Students</i>	Y	Y	Y	Y	P	Y	5.5	91.7%
PS8	Balakrishnan et al. (2022)	<i>Glossophobia among Engineering Learners: A Case Study at a Technical University</i>	Y	Y	Y	Y	P	N	4.5	75.0%
PS9	Chen (2024)	<i>Effects of Technology-Enhanced Language Learning on Reducing EFL Learners' Public Speaking Anxiety</i>	Y	Y	Y	Y	Y	Y	6.0	100.0%

PS10	Grieve et al. (2021)	<i>Student Fears of Oral Presentations and Public Speaking in Higher Education: A Qualitative Survey</i>	Y	Y	Y	Y	P	Y	5.5	91.7%
PS11	Gürbüz and Cabaroğlu (2021)	<i>EFL Students' Perceptions of Oral Presentations: Implications for Motivation, Language Ability and Speech Anxiety</i>	Y	Y	Y	Y	P	N	4.5	75.0%
PS12	Kamata et al. (2025)	<i>Investigating Japanese EFL Learners' Communication Apprehension and Oral Presentation Strategies</i>	Y	Y	Y	Y	P	N	4.5	75.0%
PS13	Keane et al. (2021)	<i>Exploring the Experience of Anxiety Among Final Year Students at University: A Thematic Analysis</i>	Y	Y	Y	Y	N	Y	5.0	83.3%
PS14	Le and Ho (2025)	<i>Exploring Public Speaking Preparation: Insights from Vietnamese EFL Students</i>	Y	Y	Y	Y	P	N	4.5	75.0%
PS15	Lintner and Belovecová (2024)	<i>Demographic Predictors of Public Speaking Anxiety among University Students</i>	Y	Y	Y	Y	Y	N	5.0	83.3%
PS16	López-Pérez et al. (2023)	<i>Anxiety When Developing Oral Skills in University Students of English as a Foreign Language</i>	Y	Y	Y	Y	P	N	4.5	75.0%
PS17	Maldonado et al. (2022)	<i>Oral Skills and Anxiety: Training and Efficacy in Undergraduate Students</i>	Y	Y	Y	Y	Y	N	5.0	83.3%
PS18	Mhuentoei (2023)	<i>Public Speaking Anxiety of Thai Undergraduates Comparing Online Presentation and Onsite Presentation</i>	Y	Y	Y	Y	Y	N	5.0	83.3%
PS19	Nyamekye et al. (2025)	<i>The Predictive Impact of Linguistic Anxiety and 'Fear of Lecturers' on Students' Willingness to Communicate in Class</i>	Y	Y	Y	Y	Y	N	5.0	83.3%
PS20	Quevedo-Bayona et al. (2025)	<i>Descriptive Study on State and Trait Anxiety Levels in University Students and</i>	Y	Y	Y	Y	P	N	4.5	75.0%

		<i>Their Potential Influencing Factors</i>								
PS21	Rahman et al. (2024)	<i>Voices in Peril: Understanding English Public Speaking Anxiety among University Students in Bangladesh</i>	Y	Y	Y	Y	P	Y	5.5	91.7%
PS22	Roslim et al. (2023)	<i>Students' Perceptions of Personality Traits, Presentation Skills, and Audience Factors in Their Online Presentations</i>	Y	Y	Y	Y	P	N	4.5	75.0%
PS23	Tatlı and Karadağ (2024)	<i>Reducing Public Speaking Anxiety through the Use of Virtual Reality Assisted Distraction: A Systematic Pilot Study</i>	Y	Y	Y	Y	Y	Y	6.0	100.0%

Table 4 presents the quality assessment of the 23 selected studies using six predefined criteria (QA1–QA6), with scores assigned as Yes (1), Partly (0.5), and No (0). Overall, the findings indicate that the included studies demonstrate moderate to high methodological quality, with total scores ranging from 4.5 to 6.0, equivalent to 75.0% to 100.0%. Three studies Al Awaji et al. (2025), Chen (2024), and Tatlı and Karadağ (2024) achieved the maximum score of 6.0 (100%), reflecting comprehensive reporting across all quality criteria. Four studies scored 5.5 (91.7%), while six studies obtained 5.0 (83.3%), indicating strong methodological quality with only minor reporting gaps. The remaining ten studies received 4.5 (75.0%), primarily because they only partially addressed QA5 (comparison with similar work) and did not explicitly report study limitations (QA6) in their abstracts. Notably, all studies satisfied QA1–QA4, demonstrating that their research objectives, significance, methodology, and conceptual frameworks were generally well articulated. These results suggest that the selected literature provides a sufficiently robust evidence base for the systematic literature review.

Themes

Table 5- Analysis for Themes

Theme	Suggested Theme Name	No. of Studies	Study Numbers	Main Focus
Theme 1	FACTORS For Public Speaking Anxiety	7	PS4, PS7, PS10, PS13, PS17, PS21, PS22	Examines self-esteem, confidence, linguistic proficiency, vocabulary, pronunciation, demographic characteristics, gender, educational level, and other individual factors associated with speaking/public speaking anxiety.
Theme 2	CAUSES of Public Speaking Anxiety	7	PS2, PS3, PS5, PS6, PS19, PS20, PS23	Explores fear of judgment, audience reactions, peer and lecturer influences, institutional environments, sociocultural factors, classroom relationships, and willingness to communicate.
Theme 3	PEDAGOGICAL INTERVENTIONS	4	PS1, PS12, PS15, PS18	Focuses on preparation, rehearsal, presentation strategies, oral skills training, peer feedback,

				lecturer support, workshops, and classroom-based approaches for managing speaking anxiety.
Theme 4	INNOVATIVE WAYS TO REDUCE Public Speaking Anxiety	5	PS8, PS9, PS11, PS14, PS16	Investigates technology-supported interventions and alternative presentation environments, including virtual reality, mobile-assisted learning, online versus onsite presentations, resilience enhancement, and VR exposure/distraction.
Total	All Themes	23	PS1–PS23	Covers individual, social, pedagogical, and technology-related dimensions of public speaking/communication anxiety among university and EFL students.

The 23 studies are distributed across four complementary themes. Themes 1 and 2 contain the largest number of studies, with seven studies each, indicating substantial attention to the psychological, linguistic, social, and contextual factors associated with students' anxiety. Theme 3 includes four studies addressing preparation, presentation skills, and pedagogical strategies, while Theme 4 contains five studies examining technology and innovative interventions. Together, the themes provide a broad framework for discussing public speaking anxiety from causal factors to contextual influences to pedagogical responses to technology-enhanced interventions.

Theme 1 (T1): FACTORS FOR Public Speaking Anxiety

This section presents the answer to Research Question 1:

What factors are associated with public speaking anxiety among university students?

Study number	Author and year	Title of article
PS4	Alnaeem (2025)	<i>The Power of Self-Talk for Speaking Anxiety Reduction Among EFL Learners</i>
PS7	Abed (2022)	<i>Measuring the Correlation That Exists between Communication Apprehension and Self-Esteem among University Students in Saudi Arabia</i>
PS10	Balakrishnan et al. (2022)	<i>Glossophobia among Engineering Learners: A Case Study at a Technical University</i>
PS13	Al Hanake (2024)	<i>Examining Foreign Language Learners' Speaking Anxiety: The Case of English L2 Learners</i>
PS17	Lintner and Belovecová (2024)	<i>Demographic Predictors of Public Speaking Anxiety among University Students</i>
PS21	Quevedo-Bayona et al. (2025)	<i>Descriptive Study on State and Trait Anxiety Levels in University Students and Their Potential Influencing Factors</i>
PS22	López-Pérez et al. (2023)	<i>Anxiety When Developing Oral Skills in University Students of English as a Foreign Language</i>

The selected studies identify public speaking anxiety among university students as a multifaceted phenomenon influenced by psychological, linguistic, social, and demographic factors. Psychological factors include low self-esteem, lack of confidence, negative self-perception, and negative past experiences. For example, Abed (2022) found that self-esteem predicted 31% of communication fear, while Alnaeem (2025) reported that more than half of the Saudi EFL participants experienced high public speaking anxiety. Linguistic difficulties, particularly

limited vocabulary and pronunciation problems, were also identified as important contributors to speaking anxiety (Al Hanake, 2024). Similarly, Balakrishnan et al. (2022) found moderate glossophobia among engineering students, with anxiety associated with worries about being questioned during presentations, although its relationship with English proficiency was weak and statistically non-significant. Demographic and contextual characteristics also appear relevant. Lintner and Belovecová (2024) identified gender, high-school background, and study level as significant predictors of public speaking anxiety, while Quevedo-Bayona et al. (2025) found differences related to gender, academic discipline, age, and living arrangements. López-Pérez et al. (2023) further reported moderate linguistic anxiety, with higher levels among women and an inverse relationship with educational level

Theme 2 (T2): Causes Public Speaking Anxiety

This section presents the answer to Research Question 2:

What are the main causes of public speaking anxiety among university students, particularly in EFL and English-speaking contexts?

Study number	Author and year	Title of article
PS2	Abdullah et al. (2024)	<i>Difficulties Faced by Undergraduate Students in English Public Speaking at a Malaysian University</i>
PS3	Grieve et al. (2021)	<i>Student Fears of Oral Presentations and Public Speaking in Higher Education: A Qualitative Survey</i>
PS5	Rahman et al. (2024)	<i>Voices in Peril: Understanding English Public Speaking Anxiety among University Students in Bangladesh</i>
PS6	Roslim et al. (2023)	<i>Students' Perceptions of Personality Traits, Presentation Skills, and Audience Factors in Their Online Presentations</i>
PS19	Keane et al. (2021)	<i>Exploring the Experience of Anxiety Among Final Year Students at University: A Thematic Analysis</i>
PS20	Nyamekye et al. (2025)	<i>The Predictive Impact of Linguistic Anxiety and 'Fear of Lecturers' on Students' Willingness to Communicate in Class</i>
PS23	Al Samman (2022)	<i>Exploring Students' Anxiety Determinants in English Oriented Educational Programs</i>

The reviewed studies indicate that the causes of public speaking anxiety among university students are multidimensional, involving linguistic, psychological, social, audience-related, and educational factors. Linguistic difficulties are frequently identified as important causes, particularly poor grammar, limited vocabulary, pronunciation problems, and insufficient fluency, which can undermine students' confidence when speaking English (Abdullah et al., 2024). Similarly, Rahman et al. (2024) identified negative self-perception and limited linguistic fluency as the most common psycholinguistic causes of English public speaking anxiety. Psychological factors such as low self-esteem, lack of confidence, shyness, fear of failure, and nervousness further intensify students' anxiety (Abdullah et al., 2024; Roslim et al., 2023). Social and audience-related factors are also prominent. Students may fear being judged, compared with peers, or evaluated negatively by an audience, while concerns about lecturers' reactions can reduce willingness to communicate (Grieve et al., 2021; Nyamekye et al., 2025). In addition, insufficient opportunities for practice and preparation, limited institutional support, and the absence of public-speaking training in educational curricula may exacerbate anxiety (Rahman et al., 2024). Overall, the evidence suggests that public speaking anxiety results from the interaction of students' personal insecurities, language competence, social evaluation, and learning environment.

Theme 3 (T3): Pedagogical Interventions

This section presents the answer to Research Question 3:

What pedagogical interventions have been used to reduce public speaking anxiety among university students?

Study number	Author and year	Title of article
PS1	Le and Ho (2025)	<i>Exploring Public Speaking Preparation: Insights from Vietnamese EFL Students</i>
PS12	Kamata et al. (2025)	<i>Investigating Japanese EFL Learners' Communication Apprehension and Oral Presentation Strategies</i>
PS15	Gürbüz and Cabaroğlu (2021)	<i>EFL Students' Perceptions of Oral Presentations: Implications for Motivation, Language Ability and Speech Anxiety</i>
PS18	Maldonado et al. (2022)	<i>Oral Skills and Anxiety: Training and Efficacy in Undergraduate Students</i>

The reviewed studies indicate that pedagogical interventions can play an important role in reducing public speaking anxiety by combining structured practice, supportive feedback, collaborative learning, and skills development. Le and Ho (2025) found that Vietnamese EFL students relied mainly on self-directed preparation, such as rehearsal and visual-aid creation, while having limited opportunities for peer feedback and audience analysis. They therefore recommended structured peer review, instructor guidance, and technology-supported tools to strengthen confidence and presentation competence. Similarly, Kamata et al. (2025) emphasized collaborative learning, peer assistance, and structured oral activities, particularly approaches that balance language accuracy with fluency and incorporate learners' cultural context. Gürbüz and Cabaroğlu (2021) demonstrated that supervised oral presentations, supported by preliminary instruction, self-reflection, and peer evaluation, contributed to reduced speaking anxiety and improvements in pronunciation, language skills, and public speaking. Stronger evidence comes from Maldonado et al. (2022), whose pre–post experimental study showed that educational and psychoeducational interventions improved oral competence, confidence, and anxiety outcomes, with a communication workshop being more effective than discussion-based intervention. Overall, the findings suggest that repeated, guided, and supportive speaking practice is particularly valuable for helping university students develop confidence and manage public speaking anxiety.

Theme 4: Innovative Ways to Reduce Public Speaking Anxiety

This section presents the answer to Research Question 4:

What innovative approaches, including technology-enhanced methods, have been used to reduce public speaking anxiety among university students?

Study number	Author and year	Title of article
PS8	Chen (2024)	<i>Effects of Technology-Enhanced Language Learning on Reducing EFL Learners' Public Speaking Anxiety</i>
PS9	Al Awaji et al. (2025)	<i>Impact of Resilience Enhancement on Communication Apprehension among Health Communication Sciences Students during the COVID-19 Pandemic: An Experimental Study</i>
PS11	Mhuentoei (2023)	<i>Public Speaking Anxiety of Thai Undergraduates Comparing Online Presentation and Onsite Presentation</i>

PS14	Tatlı and Karadağ (2024)	<i>Reducing Public Speaking Anxiety through the Use of Virtual Reality Assisted Distraction: A Systematic Pilot Study</i>
PS16	Balachandran et al. (2024)	<i>A Virtual Reality Approach to Overcome Glossophobia among University Students</i>

The reviewed studies highlight several innovative approaches for reducing public speaking anxiety among university students, particularly through the use of technology and psychologically supportive interventions. Chen (2024) found that technology-enhanced language learning can help reduce public speaking anxiety, with the virtual reality (VR) group achieving a statistically significant reduction after four weeks. The study also reported that AI-generated instructional feedback contributed to lower anxiety, although teacher facilitation remained important. Similarly, Tatlı and Karadağ (2024) demonstrated that VR-assisted distraction significantly reduced anxiety, with the VR distraction group showing greater reductions than the other groups. Balachandran et al. (2024) further supported the potential of Virtual Reality Exposure Therapy (VRET) through “Manch,” a realistic virtual classroom that simulates public speaking and audience interaction; participants experienced a significant reduction in public speaking anxiety following VR exposure. In addition, Mhuentoei (2023) explored online versus onsite presentations and the use of presentation scripts as potential approaches for managing anxiety among Thai undergraduates. However, Al Awaji et al. (2025) found that although resilience-enhancement interventions improved overall communication apprehension and psychological resilience, they did not significantly reduce public speaking apprehension specifically. Overall, the evidence suggests that immersive technologies, AI-supported feedback, and carefully designed alternative presentation environments offer promising innovative approaches.

CONCLUSION

Summary of Findings

This systematic literature review synthesized 23 studies on public speaking anxiety among university students and identified four interconnected themes: factors, causes, pedagogical interventions, and innovative reduction strategies. The findings indicate that public speaking anxiety is a multifaceted issue influenced by psychological, linguistic, demographic, social, and contextual conditions. Factors such as low self-esteem, lack of confidence, linguistic difficulties, personality characteristics, gender, educational level, and previous experiences were repeatedly associated with anxiety (Abed, 2022; Al Hanake, 2024; Lintner & Belovecová, 2024). The review further found that fear of negative evaluation, fear of failure, uncertainty, audience reactions, limited preparation, and concerns about lecturers or peers can trigger or intensify anxiety (Abdullah et al., 2024; Grieve et al., 2021; Rahman et al., 2024; Roslim et al., 2023). Regarding reduction strategies, structured practice, peer feedback, instructor guidance, supervised presentations, and communication workshops were found to support confidence and oral competence. Technology-based approaches, particularly VR and AI-supported learning, also demonstrated promising potential, although resilience enhancement did not significantly reduce public speaking apprehension specifically.

Implications and Suggestions for Future Research

The findings have important implications for higher education practice and future research. Universities should adopt comprehensive support systems that address both the psychological and linguistic dimensions of public speaking anxiety through supportive classroom environments, progressive speaking activities, peer collaboration, constructive feedback, and targeted communication training. Educators should also consider integrating innovative technologies such as VR and AI as complementary tools rather than replacements for teacher facilitation. Future research should employ larger and more diverse samples across countries, disciplines, and student populations to strengthen the generalizability of findings. Longitudinal and experimental studies are particularly needed to determine the sustained effectiveness of pedagogical and technology-based interventions. Further research should also directly compare different intervention approaches and examine how factors such as gender, language proficiency, self-efficacy, cultural context, and audience characteristics interact to influence intervention outcomes.

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