# Implementation of Multimodal Assessments to Address Public Speaking Anxiety Among College Students

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## Abstract

The ability to deliver oral presentations has been widely recognizable as one of the most essential skills in higher education and the workplace. This skill plays a vital role in securing a job for most fresh graduates. This study examines the implementation of multimodal assessments, incorporating various digital and interactive evaluation methods in higher education to address public speaking anxiety (PSA). Drawing from a case study, the study analyzes the effectiveness of integrating virtual reality (VR) and artificial intelligence (AI)-driven speech analysis in mitigating PSA. The findings highlight that multimodal approaches significantly decrease the anxiety level and build confidence through personalized feedback and track progress over time. A comparative analysis of traditional and multimodal assessment methods highlighting key differences in anxiety reduction, engagement, and overall speaking proficiency. The results demonstrate that multimodal assessments strategically improve students' speaking skills, as indicated by biometric and performance-based metrics.

## Keywords

Multimodal assessment, public speaking, anxiety, virtual reality, artificial intelligence

## Introduction

The ability to deliver oral presentations has been widely recognizable as one of the most essential skills in higher education (Chen, 2024). Colleges and universities play an important role in preparing students to enter the challenging workforce. In today's competitive job market, employers place great value on soft skills and communicative abilities (Norshima, Nur and Balraj, 2022). Thus, the ability to communicate well has a strong impact on students' career development. Research findings have shown that poor ability in presentation skills is one of the main reasons fresh graduates struggled to get employed (Lee, Hazita and Noorizah, 2018). Since public speaking

is a skill that is crucial for both academic and professional, it is always included in the course as a part of the pedagogy to prepare students for higher chances of employability (Leong, 2024). However, traditional oral presentations, which mostly focus on assessing comprehension of students, live presentation assessments and high stake assessing of oral communication skills significantly increase the anxiety level of students which a condition called Public Speaking Anxiety (PSA) which hinders them for employment opportunities. To emphasize, speaking in public is also one of the fears to be commonly found in the general population (Dwyer & Davidson, 2012; Sawyer, 2016).

According to Barrett & Liu (2016), oral presentation skills or public speaking are essentially the delivery of oral monologues, such as "academic presentations, dissertation and thesis proposals, or any event where someone has to speak for a given length of time on a topic without interruption" and a higher level of standards for speech delivery are essential. Public speaking is not just about the words spoken but effective speaking involves the use of gestures, facial expressions and vocal variety. All these social cues combined will be able to give confidence to the speaker (Dermody, Sutherland & Farren, 2015). Astuti (2011) revealed that public speaking is an approach with the goal to transfer a message or idea to inform the audience as well as persuade them to change their perspective or opinion. The ability to master the art of public speaking will differentiate and set the speaker apart from others. (Novaković & Teodosijević, 2017). Therefore, public speaking courses can be effective to improve their presentation skills for their future careers (Leong, 2025a). Figure 1 below shows the transaction model of communication.
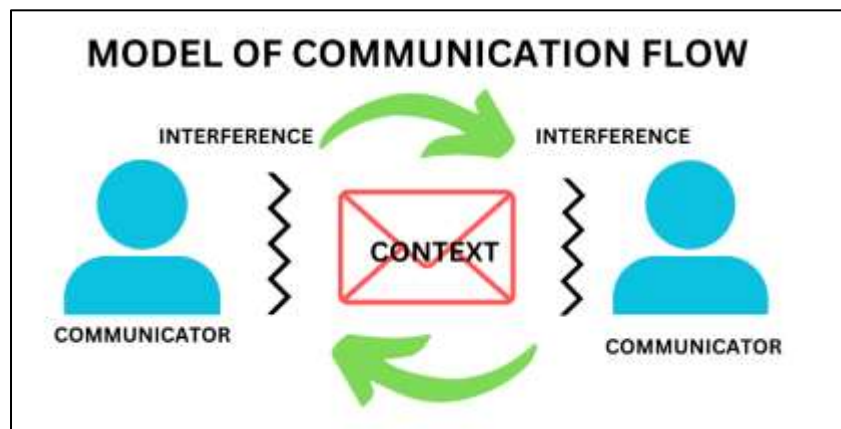


Figure 1: Model of Communication Flow

Challenges in Oral Presentation

**Fear of public speaking (FOPS) and Public Speaking Anxiety (PSA).** Also known as glossophobia, is a type of social anxiety disorder in performance situations or sphere that involve perceived evaluation by others (American Psychiatric Association 2013). FOPS is associated with debilitating anxiety that impacts one's social, academic, and occupational opportunities (Kessler, Stein, and Berglund 1998). To add on, PSA is also classified as a type of communication anxiety, and 'a situation-specific social anxiety that arises from the real or anticipated enactment of an oral presentation' (Bodie, 2010). PSA ranks as one of the top social phobias reported, and is a

complicated psychological phenomenon confounded by various psychological, cognitive, and contextual factors (Schwerdtfeger, 2004). When speaking in front of a big crowd, Bordios et (2024) stresses that even students with strong English language proficiency experienced significant speaking anxiety.

**Self-perception.** Aini and Lubis (2023) pointed out that fear of being judged, fear of making mistakes and low self-esteem is commonly reported as an issue in public speaking (Aini and Lubis, 2023). Grieve et.al. (2021) stated that Social Anxiety Disorder (SAD) may have a direct impact on public speaking and social interaction by students. The authors also pointed out the six main thematic fears in public speaking as shown in Figure 2 below.



Figure 2. Schematic illustration of the six main themes of public speaking anxiety

**Oral presentation pedagogy.** In the English for Academic Purpose (EAP), class presentation requires multi-mode of presentation are being used more frequently. Students are assessed on their voice projection, eye contact, body gestures, use of visual aids, the appropriateness of presentation structure and linguistic knowledge (Januin & Stephen, 2015). Bordios et al. (2022) reported that speaking anxiety resulted in low participation in classroom activities. One issue that calls for attention is pedagogy, methods of language learning have been explored long decades ago, and each has its own focus. Kress (1996) questioned that the use of monomodality is inadequate to cater language learning needs, such as audiolingualism which focuses on drilling, repetition and controlled practice, while Communicative Language Teaching (CLT) seen as a process of

exchanging information, ideas and feelings, not just acquiring language structures (Avazovna, 2024).

Theoretical Framework of Multimodality

Research on multimodality has grown exponentially since the term was coined in the mid-1990s. Multimodality refers to the use of multiple modes of communication in a text to create meaning. Multimodality considers the ways in which people figure out the meaning from all the modes. Body position, colours, movement, and sound are also explored in multimodal studies (Jewitt, Benzemer, O'Halloran, 2016). Scholars from various disciplines such as semiotics, linguistics, media studies, new literacies studies, and education have examined a wide range of issues related to communication, education, culture, and power from a social semiotic perspective. Theoretical orientations to the concept of multimodality may be approached from three broad camps. Prominent researchers, such as Jewitt et al. (2016) focus on multimodal discourse analysis, primarily grounded in systemic functional linguistic multimodal theory.

Studies by Kress and Kress and van Leeuwen (1996:2001) construe multimodality from a social semiotic perspective, while Bateman et al. adopt a systematic, corpus, and linguistic based approach to investigate how different modes are assembled to construct genre-specific knowledge systems. Multimodal representations mediate the sociocultural ways in which these modes are combined in the communication process (Kress & Van Leeuwen, 2001).

| Modes | Linguistic and Visual | Visual | Linguistic, visual and audio | Linguistic and audio | Linguistic,visual, audio and spatial |
|---|---|---|---|---|---|
| Example | Reading graphic story books or infographic material | Looking at a drawing or photo | Watching and listening to a movie | Listening to lecture or radio | Watching a movie, and reading subtitles at the same time |

Table 1. Example of Multi Modes Presentation of Language

Multimodality in Higher Education

Higher education institutions worldwide are increasingly incorporating digital tools and resources to support their teaching and learning (Leong, 2025b). A way to better prepare graduates for technology-driven is to engage with multimodal artefacts and lead in their respective tasks, especially in evaluation and assessment (Adams Becker et al., 2017). Many academicians in higher education are exploring new approaches to incorporating technology into disciplinary learning, assessing collaborative, digitally mediated work and facilitating student learning across modes, tools and semiotic resources (Haythornthwaite, 2012).

## Methodology

Case Study: Implementation in College Settings

A pilot program was conducted at a university where multimodal assessments were integrated into a semester-long public speaking course. The objective was to determine how different assessment modes impacted students' PSA and speaking performance.

Students participated in a traditional public speaking assessment to establish an initial PSA level. The tools incorporated were virtual reality simulations for controlled speaking practice, AI-powered real-time feedback for speech quality enhancement, peer and instructor assessments for comprehensive evaluation.

During the intervention phase, students practiced regularly using multimodal assessments and received iterative feedback. At the final evaluation, a second public speaking assessment was conducted to measure improvement in confidence, clarity, and anxiety levels.

## Results and Discussion

Findings indicate a 35% reduction in PSA and a 20% improvement in speech clarity compared to traditional assessment methods.

| Parameter | Traditional Assessment | Multimodal Assessment |
|---|---|---|
| Anxiety Reduction | 10% | 35% |
| Student Engagement | Moderate | High |
| Feedback Timeliness | Delayed | Immediate |

Table 2. Comparative Analysis of Traditional vs. Multimodal Assessments

A qualitative analysis of student responses revealed that multimodal assessments were perceived as 80% of students preferred interactive assessments over traditional methods. VR exposure therapy helped students gradually acclimate to public speaking. AI-driven feedback allowed immediate improvements in speech quality. The anxiety level over time ratio is shown in Figure 3 as below.
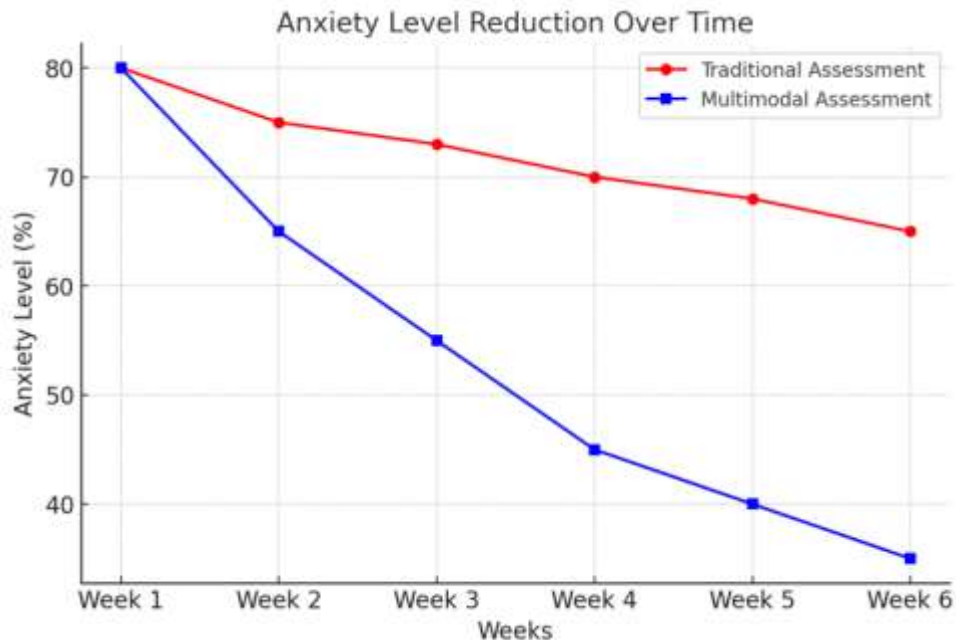
Figure 3. Anxiety Level Reduction Over Time

## Conclusion

A comparative analysis of traditional and multimodal assessment methods highlighting key differences in anxiety reduction, engagement, and overall speaking proficiency. Given the importance of oral presentation in both academic and future workplace, multimodal approaches are more preferred to reduce the PSA level of students. This study demonstrates that multimodal assessment offers a dynamic and engaging approach to communication in public speaking, leading a measurable improvement on students' PSA level. From the findings, by incorporating multimodality in oral presentation at tertiary level, students showed significant improvement through interactive assessments. The results demonstrate that multimodal assessments significantly improve students' speaking skills, as indicated by biometric and performance-based metrics. Therefore, graduates who acquired stronger communication skills show stronger readiness and stand higher change to secure a job (Rai and Likhitkar, 2023).

## Acknowledgements

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