

An Empirical Study on Alleviating Junior High School Students' Speaking Anxiety Through Multimodal Oral English Teaching

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Speaking anxiety is a key affective factor hindering junior high school students' oral English development. To address this issue and fill the research gap that existing studies mainly focus on college and senior high school students, this study explores the alleviating effect of multimodal oral English teaching on junior high school students' speaking anxiety. A one-semester empirical study was conducted with 52 eighth-grade students, using a combination of quantitative and qualitative methods, including questionnaires, semi-structured interviews, and classroom observations. The results show that multimodal oral English teaching effectively reduces students' overall speaking anxiety, significantly alleviates communication apprehension and fear of negative evaluation, but has no significant impact on test anxiety. In addition, students gradually develop positive attitudes toward this teaching approach and their classroom participation increases significantly. This study provides empirical evidence for applying multimodal teaching in junior high school oral English classes and offers practical guidance for alleviating students' speaking anxiety.

Keywords: multimodal oral English teaching, junior high school students, speaking anxiety, communication apprehension

Introduction

Speaking anxiety is a critical affective factor constraining junior high school students' oral English development. Among the four language skills—listening, speaking, reading, and writing—speaking has been proven to be the most anxiety-provoking (E. K. Horwitz, M. B. Horwitz, & Cope, 1986, p. 125). Influenced by China's long-standing examination-oriented education system, English instruction has prioritized reading and writing over speaking, leading to the widespread phenomenon of “mute English”: Students can comprehend English input but struggle to produce effective oral output. In English classes, many junior high school students experience intense nervousness and fear of making mistakes when required to speak, which severely inhibits their willingness to participate in oral activities and impairs their oral expression capacity. Therefore, exploring effective strategies to alleviate students' speaking anxiety and promote their oral English output has become an urgent and practical issue in contemporary junior high school English teaching.

In response to this pressing issue, scholars have explored the causes and coping strategies of speaking anxiety from various perspectives. Regarding causes of speaking anxiety, Young (1991) and Cheng, Horwitz,

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and Schallert (1999) identified three core sources: communication apprehension, fear of negative evaluation, and low self-efficacy. Regarding intervention strategies, researchers have attempted various approaches, including generative AI (artificial intelligence) technology (Wu, Zhou, & Cao, 2024, p. 105), task-based teaching method (Xu, 2023, p. 193), and Production-Oriented Approach (Pan, 2021, pp. 1-3), all of which have achieved certain positive effects. However, a notable research gap exists: Most of these studies have focused on higher education populations (e.g., college students) rather than junior high school students, who are particularly susceptible to speaking anxiety due to their immature cognitive and emotional development.

Meanwhile, multimodal teaching has received widespread attention in the field of foreign language education. Rooted in social semiotics, multimodal teaching emphasizes mobilizing students' multiple senses (visual, auditory, tactile, etc.) and constructing authentic teaching contexts through diverse semiotic resources, such as images, sounds, gestures, and videos. This approach can effectively capture students' attention, enhance their classroom participation, and reduce their learning anxiety (Zhang, 2009, p. 24). A growing body of research has begun to examine its effects on speaking anxiety. Sun Yi-han (2022) conducted an in-depth investigation into types of speaking anxiety and the value of multimodal teaching, finding that multimodal teaching significantly alleviates students' speaking anxiety, serving as an effective strategy to mitigate their English speaking anxiety. Y. P. Rui and H. J. Ji (2017) conducted a 16-week empirical study with 40 college students, demonstrating that multimodal teaching effectively alleviated speaking anxiety, low self-efficacy, and avoidance behavior. Cao Jin (2019) extended this line of inquiry to senior high school students, finding that multimodal teaching significantly reduced communication apprehension and fear of negative evaluation, though it had no significant effect on test anxiety.

Despite these promising findings, two critical research gaps remain unaddressed. First, the majority of existing studies have focused on college and senior high school populations, leaving junior high school students—whose cognitive and emotional development differs markedly from older learners—largely unexamined. Second, while Cao Jin (2019) identified test anxiety as a dimension resistant to multimodal intervention, the mechanisms underlying this phenomenon remain underexplored, particularly among younger learners such as junior high school students. Addressing these gaps is essential for understanding the full scope of multimodal teaching's applicability and for developing age-appropriate pedagogical strategies to alleviate speaking anxiety in junior high school English classrooms.

Based on this, the present study attempts to introduce multimodal oral teaching into junior high school English classrooms, employing Horwitz et al.'s (1986) three-dimensional framework of speaking anxiety (communication apprehension, fear of negative evaluation, and test anxiety) as the analytical framework. The study aims to systematically investigate the alleviating effects of multimodal oral English teaching on junior high school students' speaking anxiety. To achieve this goal, the following specific research questions are proposed:

(1) Can multimodal oral English teaching effectively alleviate junior high school students' overall speaking anxiety?

(2) How does multimodal oral English teaching differentially affect the three dimensions of speaking anxiety: communication apprehension, fear of negative evaluation, and test anxiety?

(3) What are students' attitudes toward multimodal oral English teaching, and how does this teaching approach affect their classroom participation?

Research Design

Research Participants

This study was conducted at the Junior High School Affiliated with Guangzhou University, a school representative of typical foreign language teaching contexts in Guangdong Province. To facilitate in-depth classroom observation and ensure the validity of research data, a single parallel class was selected as the experimental class. All students had studied English for at least two years and had similar English proficiency levels (verified by their previous semester's final English exam scores). Interviewees were randomly selected from this class to ensure representativeness, with equal consideration given to students of different English proficiency levels.

Research Instruments

To ensure the comprehensiveness and validity of research data, a mixed-methods research design was adopted, combining quantitative and qualitative research methods. Data were collected through three main instruments: the Junior High School Students' English Speaking Anxiety Scale (questionnaire), a semi-structured interview outline, and a classroom observation scale. Statistical analyses were performed using SPSS 22.0.

- Questionnaire:

The questionnaire employed in this study was the Junior High School Students' English Speaking Anxiety Scale, adapted from Horwitz et al.'s (1986) Foreign Language Classroom Anxiety Scale. This adapted scale was revised to fit the cognitive level and learning context of junior high school students, with the content validity verified by three English education experts. It measures three dimensions of speaking anxiety: communication apprehension, fear of negative evaluation, and test anxiety. The final version consists of 33 items rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree), with higher scores indicating higher levels of speaking anxiety. All items were translated into Chinese to ensure comprehension by junior high school students.

- Interview:

Semi-structured interviews were conducted to obtain a more comprehensive and in-depth understanding of students' speaking anxiety, which could not be fully captured by the questionnaire. All interviews were carried out in Chinese to ensure clear communication. Prior to the experiment, five students were randomly selected from the experimental class for a pre-interview to explore their initial perceptions of English speaking anxiety, their attitudes toward oral English learning, and their expectations of classroom teaching. After the experiment, another five students were randomly selected for a post-interview to explore their views on the multimodal teaching approach and to understand the changes in their speaking anxiety levels.

- Classroom observation:

Classroom observation was employed as a complementary method to capture students' behavioral responses during oral English instruction, providing direct evidence of changes in speaking anxiety. Observations were conducted prior to and after the experiment, with a focus on three dimensions aligned with the questionnaire: communication apprehension, fear of negative evaluation, and test anxiety.

In terms of communication apprehension, the observer recorded students' emotional states (e.g., nervousness, relaxation) and behavioral reactions (e.g., active participation, avoidance) during oral activities such as responding to teacher questions, pair practice, group discussions, and role-plays. Regarding fear of negative evaluation, observable behaviors following oral errors—such as blushing, lowering the head, or avoiding eye

contact—were documented. For test anxiety, students' non-verbal behaviors during the speaking section of oral tests were noted. These observational data served to complement the quantitative findings and provide a more holistic understanding of the intervention's effects.

Multimodal Oral English Teaching Design

The multimodal oral English teaching design was based on Zhang's (2009) multimodal foreign language classroom teaching design framework and the core principles of multimodal teaching theory, integrating three interrelated stages: pre-class preparation, in-class interaction, and post-class consolidation (see Table 1). The design aimed to integrate diverse semiotic resources to create a low-anxiety teaching environment and promote students' active oral participation.

Table 1

Multimodal Oral English Teaching Design

Stage	Teacher role	Student activity	Main modes
Pre-class	Designer	Prepare PPT, complete video dubbing, upload assignments	Visual, auditory
In-class	Facilitator & guide	Present materials, engage in group discussions, role-plays, dubbing tasks	Visual, auditory, kinesthetic
After-class	Supporter	Record oral presentations, participate in online discussions, complete reflection tasks	Digital, auditory

In the pre-class preparation stage, the teacher prepared multimodal teaching materials (e.g., short videos, pictures, audio clips) based on the teaching objectives and unit themes and assigned personalized pre-class tasks to students via WeChat. These tasks included designing a PPT to introduce a topic, completing video dubbing of short English dialogues, and uploading their completed tasks to the class group. These activities engaged students in visual and auditory modes, familiarizing them with lesson content and reducing anxiety about new material.

In the in-class interaction stage, the teacher served as facilitator and guide rather than a mere knowledge transmitter. Students first presented their pre-class preparation materials, combining visual (PPT) and oral modes to express their ideas. Subsequently, a series of interactive activities were conducted, including group discussions, role-plays, and real-time dubbing tasks. These activities integrate visual, auditory, and kinesthetic modes, allowing students to experience the synergy of multimodal input and output. In line with social semiotics, such activities provide learners with opportunities to select and combine semiotic resources to express meaning, thereby lowering affective filters and encouraging spontaneous oral production.

In the post-class consolidation stage, students engaged in various consolidation activities with ongoing teacher support via digital platforms (e.g., WeChat, online learning platforms). These activities included recording oral presentations on the unit theme, participating in online group discussions to share their learning experiences, and completing reflection tasks to summarize their gains and difficulties in oral English learning. These post-class activities further reinforced the effects of in-class teaching and helped students build confidence in oral expression.

Experimental Data Collection and Collation

Quantitative data from the pre-experiment and post-experiment questionnaires were analyzed using paired samples t-test in SPSS 22.0. This statistical method was used to compare the pre-test and post-test scores of students' overall speaking anxiety and its three dimensions (communication apprehension, fear of negative

evaluation, and test anxiety), so as to examine the changes in students' speaking anxiety before and after the experimental intervention.

Qualitative data from the semi-structured interviews were transcribed verbatim after the interviews, and thematic analysis was adopted to identify key themes related to students' speaking anxiety and their attitudes toward multimodal oral English teaching. Classroom observation data were sorted and coded according to the three dimensions of speaking anxiety, and typical behavioral examples were extracted to complement the quantitative findings, providing a more holistic understanding of the intervention's effects.

Results and Discussion

Effects of Multimodal Oral English Teaching on Students' Overall Speaking Anxiety

To examine the effects of multimodal oral English teaching on alleviating students' speaking anxiety, paired samples t-tests were conducted on the questionnaire data collected before and after the experiment, comparing pre- and post-test results across the three dimensions. The results are presented in Table 2 and Table 3.

Table 2

Descriptives of Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CApre	2.9283	52	0.49083	0.06807
	CApost	2.8357	52	0.48408	0.06713
Pair 2	TApre	2.3949	52	0.39690	0.05504
	TApost	2.4000	52	0.37271	0.05169
Pair 3	NApre	2.9698	52	0.60895	0.08445
	NApost	2.8544	52	0.60839	0.08437
Pair 4	ESApr	2.7643	52	0.38887	0.05393
	ESApost	2.6967	52	0.38004	0.05270

CA = communication apprehension; TA = test anxiety; NA = negative anxiety; ESA = English speaking anxiety; pre = pre-questionnaire; post = post-questionnaire.

Table 3

Comparison Between the Pre-test and the Post-test of the Experimental Class

		Paired differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% confidence Interval of the difference				
					Lower	Upper			
Pair 1	CApre-CApost	0.09266	0.25363	0.03517	0.02205	0.16327	2.634	51	0.011
Pair 2	TApre-TApost	-0.00513	0.21117	0.02928	-0.06392	0.05366	-0.175	51	0.862
Pair 3	NApre-NApost	0.11538	0.40706	0.05645	0.00206	0.22871	2.044	51	0.046
Pair 4	ESApr-ESApost	0.06764	0.19953	0.02767	0.01209	0.12319	2.444	51	0.018

As shown in Table 2 and 3, paired-sample t-test results revealed a significant difference between pre-test and post-test scores ($t = 2.444$, $df = 51$, $p < 0.05$). The mean score of students' overall speaking anxiety decreased from 2.7643 ($SD = 0.38887$) in the pre-test to 2.6967 ($SD = 0.38004$) in the post-test. This result indicates that multimodal oral English teaching effectively alleviates junior high school students' overall speaking anxiety.

Qualitative data from interviews and classroom observations further support this quantitative finding. One student noted in the post-experiment interview, "With pictures and videos to help me, I feel much less nervous

when speaking English". Classroom observation also revealed a marked increase in students' willingness to volunteer answers and participate in oral activities: The number of students actively raising their hands to speak increased from an average of 4.2 per class in the pre-experiment period to 11.5 per class in the post-experiment period, which corroborated the significant reduction in students' overall speaking anxiety.

Several factors account for this positive result. On the one hand, the integration of multiple semiotic modes—video, music, images, actions—creates authentic contexts and familiarizes students with topics before speaking, reducing cognitive load. On the other hand, the relaxed classroom atmosphere fostered by multimodal instruction enhances engagement and reduces anxiety. This teaching design aligns with Zhang's (2025) multimodal principles, which regard multimodality as a tool, assistant, and supplement to improve teaching effectiveness. These findings are also consistent with previous studies. Y. P. Rui and H. J. Ji (2017) found multimodal teaching alleviates college students' speaking anxiety, while Cao Jin (2019) obtained similar results with senior high school students. The present study extends this to junior high school students, validating the broad applicability of multimodal oral English teaching in alleviating speaking anxiety across different age groups.

Differential Effects on Three Dimensions of Speaking Anxiety

As shown in Table 2 and 3, the paired-samples t-test results revealed differential effects of multimodal oral English teaching on the three dimensions of speaking anxiety. Specifically, communication apprehension decreased significantly ($t = 2.634$, $df = 51$, $p = 0.011 < 0.05$), and fear of negative evaluation also showed a significant reduction ($t = 2.044$, $df = 51$, $p = 0.046 < 0.05$). However, no significant change was observed in test anxiety ($t = -0.175$, $df = 51$, $p = 0.862 > 0.05$). These results indicate that multimodal oral English teaching can effectively alleviate junior high school students' communication apprehension and fear of negative evaluation, but has no significant impact on their test anxiety. These results indicate that multimodal oral English teaching effectively alleviates communication apprehension and fear of negative evaluation, but has no significant impact on test anxiety.

The significant improvements in communication apprehension and fear of negative evaluation can be explained through several factors. First, multimodal teaching combines after-class preparation with in-class practice, creating more opportunities for students to familiarize themselves with relevant materials before speaking. As noted in classroom observations, students who had prepared multimodal materials were more confident when called upon to speak. Second, the relaxed and interactive classroom atmosphere fostered by multimodal activities (e.g., group discussions, role-plays, dubbing tasks) encourages students to communicate freely with their peers and teachers. During these activities, students become more willing to express themselves and develop a healthier attitude toward peer and teacher feedback. One student noted in the post-interview, "When we do role-plays with pictures and actions, I forget that I'm being watched. It feels more like playing than testing". Classroom observation data corroborated this, showing that students exhibited fewer nonverbal signs of anxiety (e.g., looking down, avoiding eye contact) during multimodal activities compared to traditional whole-class speaking tasks.

The non-significant result for test anxiety, however, warrants further discussion. This finding may be attributed to several factors. First, test anxiety is deeply rooted in the high-stakes examination system. Unlike communication apprehension and fear of negative evaluation, which are primarily classroom-based, test anxiety is tied to formal assessment and academic progression. Alleviating such anxiety may require long-term

reinforcement beyond a single semester. Second, the research subjects' developmental characteristics also play a role. College students in previous studies are more mentally mature and have had longer exposure to English, whereas junior high school students are in adolescence—a developmental stage characterized by heightened sensitivity to evaluation and external pressures. This makes them more prone to test anxiety, which is difficult to alleviate through short-term classroom intervention. Interview data support this interpretation: One student commented, "I feel more confident in class now, but I still get nervous when taking speaking tests". Another student noted, "The multimodal activities are fun and help me in class, but when it comes to the test, I still worry about my score". These responses suggest that while multimodal teaching effectively reduces anxiety in informal classroom settings, its impact on formal evaluation contexts remains limited. Additionally, as one student reflected, "These activities may have inspired us at the time, but later we gradually forget". This points to the need for sustained, cumulative multimodal interventions to achieve lasting effects on test anxiety.

Students' Attitudes and Changes in Classroom Participation

Semi-structured interview data revealed that students' attitudes toward multimodal oral English teaching changed significantly over the course of the experiment. Initially, most students expressed uncertainty and hesitation about the new teaching approach. One student stated, "At first, I wasn't sure how to use all these pictures and videos". However, as the semester progressed, students developed positive attitudes. A representative comment was, "Later, I found that speaking English with visual support was much easier and less stressful". Another student noted, "I used to never raise my hand, but now I volunteer more often".

Classroom observation data corroborated these attitudinal changes. The frequency of voluntary responses increased from an average of 4.2 per class in the pre-experiment period to 11.5 per class in the post-experiment period. Nonverbal indicators of anxiety—such as looking down, avoiding eye contact, and blushing—decreased noticeably. Students also became more engaged in group activities and role-plays, demonstrating greater willingness to experiment with oral expression.

These findings suggest that students require an adaptation period when introduced to new pedagogical approaches. Once familiar with multimodal teaching, they perceive it as supportive rather than intimidating. The positive attitudes and increased participation align with the quantitative results, further confirming that multimodal oral English teaching creates a low-anxiety environment conducive to speaking practice.

Conclusion and Implications

This study investigated the effects of multimodal oral English teaching on junior high school students' speaking anxiety through a one-semester experiment. By integrating quantitative data from questionnaires with qualitative data from interviews and classroom observations, three major findings emerged.

First, multimodal oral English teaching effectively alleviates students' overall speaking anxiety. The post-test scores were significantly lower than pre-test scores, indicating the approach's overall effectiveness.

Second, the approach significantly reduced communication apprehension and fear of negative evaluation, but showed no significant effect on test anxiety. In fact, test anxiety scores increased slightly, which may be attributed to the timing of the post-questionnaire—students were preparing for final exams, and test anxiety before high-stakes assessments may have interfered with the experimental data. This suggests that while multimodal teaching creates a relaxed classroom atmosphere that alleviates anxiety related to daily communication and peer evaluation, its impact on test anxiety—rooted in external assessment pressures—remains limited.

Third, students' adaptability to multimodal teaching improved over time. Initially hesitant and reluctant to participate, students gradually became more active and engaged, demonstrating increased willingness to speak and participate in multimodal activities.

Based on these findings, several pedagogical implications are proposed.

First, teachers should leverage diverse network resources to enrich spoken English instruction. A large number of authentic, high-quality multimodal materials (e.g., short videos, English songs, picture books) are available online, which can expose students to real language contexts, stimulate their interest in oral English learning, and positively influence their foreign language thinking.

Second, multimodality should be used strategically in classroom activity design. While multimodal teaching emphasizes the integration of various semiotic resources, more modes do not necessarily lead to better outcomes. Teachers should select and coordinate modes based on teaching objectives and student needs, avoiding the misuse of multimodality that may distract students.

Thirdly, teachers should strengthen classroom management. Teachers should strengthen classroom management. The relaxed and interactive atmosphere created by multimodal activities may lead to disorder in the classroom if not properly managed. Teachers should carefully control the duration of each activity and maintain good class discipline to ensure that teaching objectives are met while maintaining a low-anxiety learning environment.

Finally, teachers should develop a deeper understanding of multimodal teaching. They should move beyond a superficial view of multimodal teaching as merely using media technology to present knowledge, and focus on systematically integrating multimodal resources to promote students' cognitive development, reduce their speaking anxiety, and enhance the effectiveness of oral English teaching.

Several limitations of this study should be acknowledged. First, the study involved only a single class of 52 eighth-grade students from one school, which limits the generalizability of the research results. Future research could expand the sample size and select students from different regions and schools to improve the generalizability of the findings.

Second, the one-semester intervention period may be insufficient to observe the long-term effects of multimodal oral English teaching, particularly on test anxiety. Future studies could extend the intervention duration to explore the long-term impact of this teaching approach.

Third, this study did not explore the differential effects of multimodal teaching on students with different English proficiency levels. Future research could focus on this aspect to provide more targeted pedagogical guidance.

Despite these limitations, this study provides empirical evidence supporting the effectiveness of multimodal oral English teaching in reducing junior high school students' speaking anxiety. It also enriches the research on multimodal teaching in junior high school English education, contributing both theoretical insights and practical guidance for English language teachers to alleviate students' speaking anxiety and improve oral English teaching quality.

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