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Changes In University Students' Public Speaking Self-Efficacy: Experiences, Feedback, And Internal Conditions

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Abstract

Public speaking self-efficacy may change as students interpret speaking experiences, feedback, and emotional reactions. This two-wave mixed-methods study examined changes in public speaking self-efficacy during a Scientific Oration course and explored the factors students perceived as influencing those changes. Data were collected at two measurement points approximately four months apart from 20 female, sixth-semester students enrolled in an Indonesian Language and Literature Education program. Public speaking self-efficacy was measured using a 12-item scale, while three open-ended questions explored speaking experiences, feedback and observation, and internal conditions. Mean self-efficacy increased from 40.45 (SD = 6.92) to 44.10 (SD = 6.16), $t(19) = 3.02$, $p = .007$, Cohen's $d_z = 0.67$. The Wilcoxon signed-rank test yielded a consistent result ($p = .006$). Thirteen students showed increased scores, three remained unchanged, and four declined. Students perceived their confidence as influenced by mastery experiences, constructive feedback, observation, preparedness, and physiological and affective states. The findings indicate that public speaking self-efficacy may change during an academic speaking course, although changes were not uniform across students. Scientific Oration instruction should therefore integrate graduated practice, specific feedback, relevant peer models, and strategies for managing emotional reactions.

Keywords: public speaking self-efficacy, speaking experience, feedback, internal conditions, university students

A. Introduction

Public speaking is a central component of university learning. Undergraduate students are regularly expected to present academic content, participate in discussions, explain evidence, and defend their ideas before lecturers and peers. These activities require not only subject knowledge but also the ability to organize information, communicate clearly, respond to audiences, and regulate emotions. Difficulties in public speaking may therefore limit students' classroom participation and prevent them from fully demonstrating their academic competence. Grieve et al. (2021) found that university students' fears of oral presentations affected their willingness to interact, ask questions, and engage in learning. Recent evidence also indicates that public speaking anxiety remains common among university students and is associated with psychological, academic, and contextual factors (Ahmed et al., 2025; Lintner & Belovecová, 2024).

Public speaking difficulties are frequently associated with fear of negative evaluation, inadequate preparation, and doubts about communication competence. They may involve cognitive reactions, such as anticipating failure; emotional reactions, such as fear and worry; and physiological responses, including trembling and increased heart rate. However, public speaking anxiety is not determined solely by students' actual speaking ability. Students with adequate knowledge and communication skills may still struggle when they doubt their ability to perform effectively. Liu (2024) found that self-perceived public speaking competence was significantly related to anxiety during English as a Foreign Language presentations. Ahmed et al. (2025) also identified a significant, although relatively weak, negative relationship between self-efficacy and public speaking anxiety. These findings suggest that self-efficacy is relevant but cannot fully explain students' confidence or anxiety.

Bandura (1997) defined self-efficacy as individuals' beliefs in their capabilities to organize and execute the actions required to achieve particular outcomes. Because self-efficacy is domain-specific, students may possess strong general academic confidence while remaining uncertain about their ability to structure a presentation, communicate ideas clearly, maintain eye contact, or respond to an audience. Public speaking self-efficacy therefore refers to students' judgments of their capabilities to perform the cognitive, verbal, organizational, and behavioral tasks involved in speaking before others. Recent studies conceptualize it as a multidimensional construct that includes confidence in managing content or topics, language, presentation organization, and delivery (Hao & Chen, 2024; Nayak et al., 2025).

Self-efficacy can influence students' willingness to undertake speaking tasks, the effort they invest in preparation, their persistence when difficulties occur, and their interpretation of emotional reactions. Students with stronger self-efficacy may be more willing to accept speaking opportunities, prepare systematically, and recover from mistakes. Conversely, students with weaker efficacy beliefs may interpret nervousness or minor difficulties as evidence that they are incapable of speaking effectively. Nevertheless, self-efficacy is not a fixed personal characteristic. Evidence suggests that self-efficacy and performance may influence one another over time: efficacy beliefs can shape engagement and performance, while experiences of success or failure may revise those beliefs (Honicke et al., 2023; Xu et al., 2022). Public speaking self-efficacy may therefore increase, remain stable, or decline as students acquire and interpret new experiences.

Social Cognitive Theory provides the primary framework for explaining this process. Bandura (1997) identified four sources of self-efficacy: mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states. Mastery experiences concern individuals' interpretations of their previous performance. Successful performance can strengthen self-efficacy, whereas experiences interpreted as failure can weaken it. Recent scholarship continues to identify mastery experience as the most influential source, although its strength varies across individuals and learning contexts (Graham, 2022). In public speaking, mastery experiences may be obtained through classroom presentations, organizational activities, communication training, or other speaking opportunities. Marshall-Wheeler et al. (2022) found that mastery experiences had the strongest relationship with public speaking confidence. However, repeated practice does not automatically improve self-efficacy. Experience is more likely to be beneficial when students recognize progress or interpret their performance as successful.

Vicarious experience and verbal persuasion represent the social sources of efficacy. Students may strengthen their confidence by observing lecturers or comparable peers demonstrate how presentations can be prepared and delivered. Observation may be particularly influential when the model's performance appears relevant and attainable. Feedback can similarly help students identify effective aspects of their performance and realistic opportunities for improvement. Its influence, however, may depend on its specificity, credibility, and delivery. Constructive and

actionable feedback may strengthen perceived competence, whereas vague praise or harsh criticism may provide little benefit. Hao and Chen (2024) found that collaborative evaluation was positively associated with efficacy beliefs related to language, delivery, and presentation organization. However, Urena-Rodriguez et al. (2025) found no significant differences in public speaking self-efficacy between students who completed peer-feedback activities through different digital platforms. Thus, the presence or medium of feedback may be less important than its quality, perceived credibility, and use by students.

Students also interpret internal conditions before and during public speaking. In this study, *internal conditions* include preparedness, mastery of the material, nervousness, concentration, emotional state, and mood. These conditions correspond partly to Bandura's physiological and affective source of self-efficacy. Students may interpret an increased heart rate or physical tension as evidence of impending failure, or they may regard the same reactions as normal and manageable. Preparedness may also strengthen perceived control because understanding the material, planning the presentation, and rehearsing provide evidence that the student possesses strategies for managing the task. Hao and Chen (2024) found that collaborative planning predicted self-efficacy related to topic management and organization, while monitoring was associated with confidence in language use and topic management. Therefore, internal conditions may influence self-efficacy through both the student's actual readiness and interpretation of emotional reactions.

The present study extends an earlier investigation conducted by the authors. That study found that supportive classroom climate was positively associated with public speaking self-efficacy among 109 undergraduate students, with lecturer support emerging as the main predictor (Dewanto et al., 2026). However, its cross-sectional design could not determine whether self-efficacy changed over time or explain the experiences underlying such changes. The current study does not repeat the examination of classroom climate. Instead, it shifts attention from identifying contextual correlates to understanding public speaking self-efficacy as a dynamic process shaped by experience, social information, and internal conditions.

Despite recent advances, three gaps remain. First, much of the available evidence relies on cross-sectional associations rather than within-person change. Second, group-level findings may conceal different individual patterns: some students may improve, while others remain stable or decline. Third, quantitative scores cannot fully explain why such changes occur. Students may attribute changes in confidence to successful presentations, repeated practice, organizational experience, feedback, observing others, preparation, emotional regulation, or negative evaluative experiences. Recent research has therefore recommended integrating qualitative evidence to clarify how students interpret feedback and speaking experiences (Hao & Chen, 2024).

Accordingly, the present study investigates changes in university students' public speaking self-efficacy during a Scientific Oration course and explores the perceived roles of speaking experience, feedback and observational learning, and internal conditions in shaping those changes. Quantitative measurements collected at two points during the course were combined with students' accounts of the factors influencing their confidence. This approach enabled the study to identify patterns of change and examine how students interpreted their experiences during the course. By integrating quantitative changes with qualitative explanations, the study provides a more comprehensive understanding of how public speaking self-efficacy develops within an academic speaking course.

B. Methodology

Participants

This two-wave mixed-methods study extended the authors' previous cross-sectional investigation of 109 undergraduate students (Dewanto et al., 2026). The present study focused on students enrolled in a Scientific Oration course, an academic speaking course within the Indonesian Language and Literature Education program. The first measurement was conducted between February 23 and March 10, 2026, and the follow-up between July 2 and July 8, 2026, approximately four months later. Twenty-four follow-up responses were matched with the initial dataset by standardizing the capitalization and spacing of participants' names. Sixteen pairs had identical names, while five capitalization variants were confirmed as referring to the same individuals, yielding 21 matched participants.

One matched case was excluded during response-quality screening. Its 39-point decline exceeded the lower interquartile-range boundary and was approximately 3.8 standard deviations below the mean change score. The uniformly low post-test ratings were also inconsistent with the

participant's open-ended description of positive speaking experiences and feedback. Because these combined indicators suggested a potentially invalid response, the case was excluded from the analyses. The final sample consisted of 20 participants. At baseline, all participants were female, sixth-semester students from the Indonesian Language and Literature Education program, aged 18–21 years. Fourteen were active in organizations, and 12 had previously attended public speaking or communication training.

Instruments

Public speaking self-efficacy was measured using the same 12-item Public Speaking Self-Efficacy Scale employed in the previous study (Dewanto et al., 2026), adapted from Nayak et al. (2025). The scale assesses confidence in presentation content, structure, overall speaking ability, and delivery mechanics. Items were rated from 1 (*strongly disagree*) to 5 (*strongly agree*) and summed to produce scores ranging from 12 to 60. Higher scores indicated stronger public speaking self-efficacy. In the previous study, the Indonesian version demonstrated high internal consistency (Cronbach's $\alpha = .92$).

Three open-ended questions examined: (1) experiences influencing public speaking confidence; (2) the influence of feedback and observing others; and (3) internal conditions such as preparedness, nervousness, and mood. These questions reflected Bandura's (1997) four sources of self-efficacy: mastery experience, vicarious experience, verbal persuasion, and physiological and affective states.

Data Collection

Data were collected through Google Forms at two measurement points during the Scientific Oration course, approximately four months apart. The questionnaire contained demographic questions, the Public Speaking Self-Efficacy Scale, and three open-ended questions concerning students' speaking experiences, feedback and observation, and internal conditions. Supportive classroom climate items were also collected but were not included in the present analyses because their relationship with public speaking self-efficacy had been examined in the previous study.

The Scientific Oration course was delivered over 14 class meetings and included individual presentations, discussions, and speech preparation. During the course, students completed two speaking assignments and received feedback from both the lecturer and peers. These activities were part of the regular course rather than a standardized experimental intervention.

Participation was voluntary, and electronic informed consent was obtained. Because names were collected for response matching, responses were confidential rather than anonymous. Names were replaced with participant codes after matching. All matched participants completed the self-efficacy scale and open-ended questions at both measurement points. Following response-quality screening, 20 complete paired cases were retained, and no missing-value imputation was required.

Data Analysis

Paired responses were screened for completeness, unusual response patterns, extreme change scores, and consistency between scale ratings and open-ended responses. One case showing multiple indicators of potentially invalid responding was excluded. All analyses were conducted using the remaining 20 participants.

Quantitative analyses were performed using IBM SPSS Statistics Version 22. The 12 items were summed to calculate pre-test and post-test public speaking self-efficacy scores. Descriptive statistics and Cronbach's alpha coefficients were calculated for each measurement. Given the small sample, the reliability estimates were interpreted descriptively. Difference scores were calculated as follows:

$$\Delta\text{PSSE} = \text{Post-test PSSE} - \text{Pre-test PSSE}$$

The normality of difference scores was examined using the Shapiro–Wilk test. A paired-samples t test was used to assess mean change, with the Wilcoxon signed-rank test as a robustness analysis. Cohen's d_z and the 95% confidence interval for the mean difference were reported for the paired-samples t test, while rank-biserial correlation (r_{rb}) was reported as the effect size for the Wilcoxon signed-rank test. Item-level and individual changes were examined descriptively.

Post-test open-ended responses were analyzed using theory-informed qualitative content analysis. The author conducted the coding at the response level, and each response could receive more than one code. Initial categories followed Bandura's four sources of self-efficacy, while additional subcategories were developed from recurring response content. Quantitative change

patterns were subsequently compared with participants' reported experiences, feedback, observations, and internal conditions. Given the small sample and absence of a control group, the findings were interpreted as observed changes and perceived contributing factors rather than causal effects.

C. Results and Discussion

The final analysis included 20 female, sixth-semester students enrolled in the Scientific Oration course within the Indonesian Language and Literature Education program. At baseline, 14 participants (70.0%) were active in organizations, and 12 (60.0%) had previously attended public speaking or communication training.

Changes in Public Speaking Self-Efficacy

The Public Speaking Self-Efficacy Scale showed high internal consistency at pre-test (Cronbach's α = .933) and post-test (Cronbach's α = .937). Given the small sample, these coefficients were interpreted descriptively. The mean score increased from 40.45 at pre-test to 44.10 at post-test, representing an average increase of 3.65 points.

Table 1. Descriptive Statistics and Internal Consistency of Public Speaking Self-Efficacy

Measurement	*M*	*SD*	Median	IQR	Range	Cronbach's α
Pre-test	40.45	6.92	41.00	37.50–42.25	29–60	.933
Post-test	44.10	6.16	44.50	38.75–48.00	36–60	.937
Change score	3.65	5.41	3.50	0.00–5.25	−5–20	—

Note. Cronbach's alpha coefficients are reported descriptively because of the small sample.

The Shapiro–Wilk test did not indicate a statistically significant departure from normality in the difference scores, $W = .905$, $p = .052$. Post-test self-efficacy was significantly higher than pre-test self-efficacy, $t(19) = 3.02$, $p = .007$, mean difference = 3.65, 95% CI [1.12, 6.18], Cohen's $d_z = 0.67$. The Wilcoxon signed-rank test yielded a consistent result, $W = 18.50$, $p = .006$, $r_{rb} = .76$.

At the individual level, 13 participants (65.0%) showed increased self-efficacy, three (15.0%) showed no change, and four (20.0%) showed decreased scores. Individual changes ranged from −5 to +20 points.

Item-Level Changes

All 12 items showed positive mean changes. The largest increases occurred in using logical transitions and speaking clearly, concisely, and confidently. Maintaining eye contact showed the smallest increase.

Table 2. Item-Level Changes in Public Speaking Self-Efficacy

No.	Item	Pre-test *M*	Post-test *M*	Δ*M*
1	Organizing an academic presentation	3.35	3.75	+0.40
2	Supporting ideas with explanations and evidence	3.40	3.60	+0.20
3	Explaining visual materials	3.35	3.70	+0.35
4	Attracting audience attention	3.45	3.65	+0.20
5	Using logical transitions	3.10	3.60	+0.50
6	Focusing on key points	3.40	3.65	+0.25
7	Providing a clear conclusion	3.40	3.75	+0.35
8	Speaking clearly and understandably	3.40	3.75	+0.35
9	Using appropriate expression and emotion	3.45	3.60	+0.15
10	Maintaining eye contact	3.50	3.55	+0.05
11	Speaking clearly, concisely, and confidently	3.25	3.75	+0.50
12	Using effective body language	3.40	3.75	+0.35

Note. Δ*M* = post-test mean minus pre-test mean. Item-level changes were interpreted descriptively because of the small sample.

Perceived Sources of Public Speaking Self-Efficacy

Theory-informed content analysis of the post-test responses identified themes corresponding to Bandura's four sources of self-efficacy. Preparedness and perceived control also emerged as a cross-cutting theme related to both mastery experience and physiological and affective states.

Table 3. Perceived Sources of Public Speaking Self-Efficacy

Source or theme	Description	*n*
Mastery experiences	Presentations, organizational activities, teaching, serving as an MC or moderator, and repeated practice	13
Vicarious experiences	Learning from or being motivated by observing other speakers	3
Verbal persuasion	Constructive feedback, encouragement, appreciation, and respectful audience responses	17
Physiological and affective states	Nervousness, anxiety, fear of mistakes, mood, and difficulty maintaining composure	18
Preparedness and perceived control	Content mastery, planning, rehearsal, and readiness	11

Note. One response could receive multiple codes. Frequencies indicate the occurrence of themes in the post-test responses and should not be interpreted as their relative causal importance.

Participants commonly associated confidence with repeated speaking opportunities, including classroom presentations, organizational activities, teaching, and serving as an MC or moderator. Constructive feedback was perceived as helping them recognize their strengths and areas for improvement, while observing effective speakers provided examples and motivation.

Nervousness, fear of mistakes, and concerns about audience evaluation were frequently described as reducing confidence. In contrast, content mastery, rehearsal, and preparation were generally associated with greater calmness and perceived control. However, similar experiences were reported by participants with increasing, unchanged, and decreasing scores. Thus, no single experience consistently distinguished the direction of individual change.

Discussion

Public speaking self-efficacy increased across the two measurement points during the Scientific Oration course, with a moderate-to-large effect. This finding extends the authors' earlier cross-sectional study, which showed that supportive classroom climate, particularly lecturer support, was associated with public speaking self-efficacy (Dewanto et al., 2026). The present study adds a temporal perspective by indicating that efficacy beliefs may change as students accumulate and interpret academic speaking experiences during a course. However, given the small sample and absence of a comparison group, the increase cannot be attributed solely to the Scientific Oration course.

The observed change is consistent with Social Cognitive Theory, which conceptualizes self-efficacy as a dynamic belief shaped by mastery experiences, vicarious experiences, verbal persuasion, and interpretations of physiological and affective states (Bandura, 1997). A Scientific Oration course may provide relevant sources of efficacy information through presentation assignments, observation, feedback, and repeated opportunities to speak. Structured presentation practice has been associated with improved presentation skills (Algouzi et al., 2023), while graduated exposure may reduce public speaking anxiety (Lestiono & Lee, 2024; Reeves et al., 2021). Nevertheless, experiences outside the course, including organizational activities and previous communication training, may also have contributed to the observed changes.

Individual changes were not uniform. Thirteen students showed increased scores, three remained unchanged, and four showed small declines. This variation indicates that exposure to similar academic experiences does not necessarily produce equivalent changes in self-efficacy. Students may evaluate the same performance differently according to their previous experience, expectations, audience reactions, and emotional states. Therefore, the increase in the group mean should not be interpreted as evidence that every student followed the same pattern of change.

Mastery experiences were commonly associated with classroom presentations, organizational activities, teaching, and serving as an MC or moderator. These activities provide opportunities to organize messages, respond to audiences, and manage unexpected situations. However, repetition alone may be insufficient. Practice is more likely to strengthen self-efficacy when students recognize improvement and interpret their performance as successful. Guided presentation activities and video-based formative practice may support this process by combining performance with explicit criteria, assessment, and reflection (Algouzi et al., 2023; Zheng et al., 2023).

The item-level findings showed the largest increases in confidence in using logical transitions and speaking clearly, concisely, and confidently. These abilities are closely related to preparation

and can be evaluated during repeated presentations. Maintaining eye contact showed only minimal improvement, possibly because it requires more immediate engagement with audience reactions. Subjective anxiety, physiological arousal, and observable speaking behavior do not always correspond closely (Gallego et al., 2022). Students may therefore become more confident in organizing and delivering content while remaining uncomfortable with direct audience engagement. However, because the item-level changes were descriptive, this interpretation should be treated cautiously.

Feedback was another prominent theme. Participants perceived constructive comments and encouragement as helping them identify strengths and areas for improvement. Specific peer feedback can support presentation development, although its effectiveness depends on its quality and how learners use it (Day et al., 2022; Liu & Aryadoust, 2024). Peer assessment may also strengthen confidence when students understand the criteria and have sufficient experience evaluating presentations (Gudiño et al., 2024). However, concerns about objectivity and preference for lecturer validation remain common (Al-khresheh et al., 2025). Feedback should therefore be credible, behavior-focused, and linked to attainable improvements rather than expressed as general praise or criticism.

Vicarious experience was reported less frequently but remained relevant. Observing comparable peers may provide attainable models and practical strategies. Feedback combined with video-based peer modeling has been shown to support learning and self-efficacy (Eghterafi et al., 2022). In contrast, observing speakers perceived as substantially more capable may encourage unfavorable comparison. Educators should therefore include models that demonstrate gradual improvement, mistakes, and corrective strategies rather than presenting only polished performances.

Physiological and affective states were the most frequently reported internal conditions. Participants described nervousness, fear of mistakes, rapid speech, and concern about audience evaluation. Audience behavior and situational characteristics may shape these experiences (Girondini et al., 2024; Ye et al., 2024). Successful speaking performance may therefore coexist with anxiety when students interpret physiological arousal as evidence of limited ability. Preparedness may increase perceived control by reducing uncertainty, but preparation alone may not eliminate nervousness.

These findings have practical implications for the design of Scientific Oration courses. Simply assigning more presentations may be insufficient. The course should provide graduated speaking opportunities, explicit performance criteria, constructive feedback, relevant peer models, and strategies for managing nervousness. These components may help students interpret presentation activities as meaningful mastery experiences rather than repeated evaluative demands.

Several limitations warrant caution. The sample consisted of only 20 female students from one academic program, limiting the generalizability of the findings. The absence of a comparison group prevents the observed increase from being attributed specifically to the Scientific Oration course, as experiences outside the course may also have contributed. Self-efficacy was measured through self-report without objective assessments of speaking performance or anxiety. The qualitative frequencies were also influenced by the open-ended questions and should not be interpreted as estimates of causal importance. The qualitative responses were coded by a single researcher, which may have increased the influence of researcher interpretation on theme identification. In addition, one matched case was excluded because multiple indicators raised concerns about response validity. Although the exclusion was not based on the extreme score alone, future studies should establish response-quality criteria before data analysis. Further research should employ larger and more diverse samples, multiple measurement points, objective performance indicators, and appropriate comparison groups.

D. Conclusion

Public speaking self-efficacy increased during the Scientific Oration course, although individual patterns varied: some students improved, while others remained stable or declined. Students perceived these changes as influenced by mastery experiences, feedback, observation, preparedness, and physiological and affective states. The findings extend previous cross-sectional evidence by indicating that public speaking self-efficacy is dynamic and may change during an academic speaking course. However, the small homogeneous sample, absence of a comparison group, and reliance on self-report prevent the observed increase from being attributed solely to the course. Scientific Oration instruction should combine graduated practice with specific

feedback, relevant peer models, preparation strategies, and support for managing nervousness. Future research should examine the contribution of academic speaking courses using larger and more diverse samples, objective performance assessments, and controlled longitudinal designs.

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