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Improvised CALL Framework: A New Pedagogical Tool to Improve Public Speaking Skills in Academic and Professional Settings

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Abstract: Objective: This research study aims to experimentally explore the impact of the improvised CALL framework on enhancing public speaking skills. CALL stands for Collect and Collate, Anecdotes and Analogy, Let the Audience Speak Too, and Last is not the Least —a framework of techniques designed to improve the public speaking skills of Omani EFL students. **Methods:** This pre-experimental, within-subjects, retrospective design employed a non-probable self-selected sample of 101 participants from different parts of India. A self-prepared non-standardized but theory-informed questionnaire was employed to capture the self-perceived changes in the participants' confidence level with a retrospective then-now design and self-perceived changes in reduced fear, attitudinal change towards public speaking, and other subjective feelings like the appeal of the acronym and usefulness of the techniques with a retrospective post-test design. The Wilcoxon signed-rank test was used to determine the statistical validity of the results from the retrospective then-now design, and Pearson's correlation test was run to identify the nature of the correlation among the dependent variables. **Results:** The results indicate a statistically significant increase in the self-perceived confidence level of the participants ($p < .001$, $rrb = 0.88$) and a positive correlation among the dependent variables. **Conclusion:** The study highlights the usefulness of the improvised CALL framework in improving public speaking skills. The implications of the study for educators and researchers are discussed.

Keywords: CALL, communication skills; educational training; pedagogical tool; public speaking; soft skills

أثراستخدام(CALL): أداة تربوية جديدة لتحسين مهارات الخطابة في البيئات الأكاديمية والمهنية

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خلاصة: الهدف: تهدف هذه الدراسة البحثية إلى استكشاف أثر إطار عمل CALL المُحسّن على تعزيز مهارات التحدث أمام الجمهور. يرمز CALL إلى الجمع والتلخيص، والحكايات والتشبيهات، وإتاحة الفرصة للجمهور للتحدث أيضًا، أخيرا وليس آخرا – وهو إطارعمل يتضمن تقنيات مصممة لتحسين مهارات التحدث أمام الجمهور لدى طلاب اللغة الإنجليزية كلغة أجنبية في عُمان.
المنهجية: اعتمدت هذه الدراسة تصميماً شبه تجريبي، من نوع "داخل المجموعات" (within-subjects)، وذو طابع استعادي؛ حيث استُخدمت عينة غير احتمالية اختار أفرادها أنفسهم طواعية، وضمت الدراسة 101 مشارك من مناطق مختلفة في الهند. وقد استُخدمت استبانة مُعَدّة ذاتياً (غير مقننة، ولكنها مستندة إلى أسس نظرية) لرصد التغيرات التي أدركها المشاركون بأنفسهم فيما يتعلق بمستوى ثقتهم، وذلك باستخدام تصميم استعادي من نوع "حينها-والآن" (then-now)؛ كما استُخدمت الاستبانة لرصد التغيرات المُدرَكة ذاتياً في جوانب مثل انخفاض مستوى الخوف، وتغير الاتجاهات نحو الخطابة العامة، وغيرها من المشاعر الذاتية (مثل مدى جاذبية الاختصار المُستخدَم وفائدة التقنيات المُطبَّقة)، وذلك باستخدام تصميم استعادي من نوع "اختبار ما بعد التدخل". ولتحديد الصلاحية الإحصائية للنتائج المستمدة من تصميم "حينها-والآن" الاستعادي، استُخدم اختبار "ويلكوكسون للرتب المُشار إليها" (Wilcoxon signed-rank test)؛ كما أُجري اختبار "بيرسون للارتباط" لتحديد طبيعة العلاقة الارتباطية بين المتغيرات التابعة.
النتائج: أشارت النتائج إلى وجود زيادة ذات دلالة إحصائية في مستوى الثقة الذي أدركه المشاركون بأنفسهم ($p < 0.001$, $rrb = 0.88$)، كما أظهرت وجود علاقة ارتباطية إيجابية بين المتغيرات التابعة.
الخلاصة: تُبرز هذه الدراسة مدى فائدة إطار عمل "CALL" المُطوَّر في تحسين مهارات الخطابة العامة. كما تتناول الدراسة مناقشة الآثار والتداعيات المترتبة على نتائجها بالنسبة لكل من التربويين والباحثين في هذا المجال.

الكلمات المفتاحية:CALL، مهارات الاتصال، التدريب التربوي، أداة تعليمية، الخطابة العامة، المهارات الناعمة.

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Introduction

There is no denying that public speaking and communication skills are among the most important soft skills required to thrive in the 21st-century job market (U.S. Bureau of Labor Statistics, 2024). For this reason, these skills are often referred to as 21st-century skills. Although it is abundantly clear that these two skills are vitally important, public speaking is still the most common fear among students and professionals (Hall et al., 2025). Therefore, there is an urgent need to find effective and innovative ways of teaching public speaking. Whitworth & Cochran(1996) recommend skills training with easy-to-use tools and techniques to enhance students' communication skills and public speaking skills. Greene (2003) asserts unequivocally that the fundamental fact of communication skills is their gradual and progressive refinement through implementation. The literature demonstrates that teaching public speaking with effective tools and techniques is more impactful than sole reliance on textbooks, especially for EFL students who require sustained support. ECRIF (Encounter, Clarify, Remember, Internalize, Fluent Use) is a process-oriented pedagogical model with structured progression for general language acquisition (Scrivener, 2010). There are a few public speaking frameworks, such as PREP, TTT, and SHARE, which offer invaluable insights into specific areas of public speaking. Nonetheless, there is no comprehensive pedagogical model for teaching public speaking skills. The CALL framework was developed to fill this pedagogical gap in teaching public speaking. This research study improves upon the initial CALL framework by adding 'analogy' and an immediate implementation module after each technique. It is important to note that the initial study was conducted at a university in Oman with just seven students who were willing to participate in the speech contest. Therefore, there is a compelling need to test the framework with a larger sample of participants and extend the framework to professional settings. The present exploratory study is intended to test the efficacy of the improvised CALL framework with fivefold research objectives: to statistically measure the difference between the confidence level before and after the online workshop, to find out the nature of correlation between confidence level after the intervention and reduced fear of public speaking, to find out the nature of correlation between confidence level after the intervention and attitudinal changes towards public speaking, to measure the usefulness of the CALL techniques in improving public speaking skills from the participants' perspective and to measure the extent of the acronym's appeal from the respondents' viewpoint.

The research questions that this study seeks to address are as follows:

- How appealing is the acronym CALL to the participants?
- How useful are the techniques to improve public speaking skills from the participants' perspective?
- Is there a statistically significant difference between the retrospective then-now scores regarding the self-perceived changes in the confidence level of the participants?
- Is there a positive correlation between the confidence level after the intervention and reduced fear of public speaking?
- Is there a positive correlation between the confidence level after the intervention and attitudinal changes towards public speaking?

This within-subjects, retrospective, exploratory design measured the changes statistically with a long-term goal of

expanding the CALL framework to enhance public speaking skills in academic and professional settings.

Literature Review

Public Speaking Anxiety: This section provides a review of the literature concerning communication skills, speech anxiety, public speaking, and skill development concepts relevant to the CALL framework. Tsaousidis (2017) states that the fear of public speaking affects around 25% of the population and hinders both personal and professional growth. Antilogic et al. (2023) affirm that the fear of public speaking is the most common fear among adults, with 92% of their respondents reporting fear of public speaking. Ayres(1986) suggests that speech fright is an immediate result of the speaker's feeling of inadequacy between their speaking skills and the audience's expectations. LeFebvre et al.(2019)assert that public speaking anxiety reduces drastically if students undergo training. The most important fear that students express is memory glitches. Bippus& Daly(1999)record at least nine reasons for stage fright, i.e., mistakes, unfamiliar role, humiliation, negative results, rigid rules, personality traits, preparation, audience interest, and physical appearance. Dansieh et al. (2021) affirm that students in Ghana understand the importance of public speaking, but they are hindered by the fear of public speaking and the fear of speaking in English. This is true of most countries where English is not the first language. Ibrahim & Devesh (2019) suggest that 55% Omani students suffer from the fear of public speaking. They iterate that having to speak in English, being unprepared, and a lack of experience are among the main reasons for the fear of public speaking. The literature review has demonstrated that people in general and students in particular are apprehensive about public speaking and communication skills. These skills form the core of soft skills, which are vitally important in the job market.

Remedial Measures: Menzel &Carrell (1994) found a positive correlation between "the quality of speech performance and total preparation time, time spent preparing a visual aid, number of rehearsals for an audience, time rehearsing silently, time rehearsing out loud, number of rehearsals out loud, research outside the library (interviews, phone calls, surveys, etc.), and preparation of speaking notes." Dwyer & Davidson (2021), Whitworth & Cochran(1996), and Ayres(1996) recommend taking a course in public speaking to assuage the fear of public speaking. Carnegie (1981) meticulously records how professionals from different walks of life benefited from a course on communication skills and public speaking that he himself conducted in his much-admired book, How to Win Friends and Influence People. There is no doubt that these fears can be mitigated with meaningful and curated training programs, as has been elucidated in multiple studies. Governments around the world have increasingly prioritized these skills and are keen on integrating them in the curricula (Organization for Economic Co-operation and Development, 2018). The U.S. Labor Department highlights the significance of soft skills in the market and their irrefutable role in job procurement (U.S. Department of Labor, n.d.). Oman has readily recognized the importance of soft skills and included them in Oman Vision 2040 (Oman Vision 2040 Implementation Follow-up Unit, 2020). The Indian government has been conducting various upskilling programs, including soft skills, through its Skill India campaign (Ministry of Skill Development and Entrepreneurship, 2024).

The Pedagogical Gap: Despite these instructional initiatives, a significant research gap persists in academic research regarding a

unified framework of pedagogical tools and techniques that will enhance the teaching of public speaking skills from foundation to post-foundation levels. A few research studies have proposed validated techniques to enhance public speaking skills. The meta-analysis of Hall et al. (2025) reviewed 37 randomized trials with 3234 adults with Social Anxiety Disorder (SAD), which includes Public Speaking Anxiety (PSA) as a core symptom, and suggested that Cognitive Behavior Therapy (CBT) is highly effective for treating PSA. Considering this finding, it can be inferred that the applied CBT principles, such as workshops and coaching sessions, could be equally effective in non-clinical settings. Wang and Sun (2024) suggested ten techniques, such as rehearsal, summarizing, anxiety reduction, positive self-talk, seeking feedback, modelling, planning, monitoring, evaluating, and goal setting, to improve public speaking skills. Tannen (2009) discussed linguistic techniques like framing and face to enhance public speaking skills. Though the former covers the entire expanse of public speaking and the latter the linguistic aspects, there is a noticeable gap when it comes to simple and effective techniques that elucidate and encompass the foundational concepts of public speaking. Although individual techniques have already been explored by many researchers, they have not yet been systematically compiled into a cogent and comprehensive toolbox format. This toolbox of techniques has been proven very effective in teaching. Sale (2015)reiterates that using heuristics could be one of the most effective ways to teach. Scruggs &Mastropieri (2000) suggest that mnemonic instructions like acronyms help weaker students learn more effectively. There are certain noteworthy frameworks, such as Toastmasters' PREP, TTT, and John Maxwell's SHARE. However, they cover different aspects of public speaking, such as speech structure, storytelling, and repetition. None of them covers the entirety of public speaking, from collecting information to closing the speech with audience engagement and performative aspects. The following table compares the focus and core components of each framework with CALL.

Table 1. A Comparison of Public Speaking Frameworks:

Framework	Focus	Core Components
CALL- Collect and Collate, Anecdotes and Analogy, Let the Audience Speak Too, and Last is not the Least	A pedagogical tool to improve the public speaking skills of Omani EFL students	The four techniques involve collecting information, organizing ideas coherently, using stories and anecdotes, audience engagement, and a powerful conclusion.
PREP – Point, Reason, Example, Point (Acha, 2024)	Speech Structure, especially for impromptu speeches.	The techniques help structure the speech quickly and, therefore, are primarily used for extempore speeches.
TTT- Tell them what you are going to tell them, Tellthem, Tell them what you told them (Baldoni, 2012)	Speech Structure-Repetition	These techniques help structure the speech with repetition and reinforcement for clarity and memorability.
SHARE- Show, Help, Amplify, Relate, Enjoy (Maxwell Leadership, 2023)	Process of storytelling	These techniques help tell stories effectively, with excellent pointers like what the speaker wants the audience to see, hear, feel, and think with their stories.

As seen in Table 1, no existing framework can be used to teach public speaking in its entirety, despite their practical usage in

enhancing public speaking skills in specific areas. Therefore, there is a well-founded reason to experiment with a comprehensive framework to teach public speaking skills to EFL students. The researchers decided to call the toolbox of techniques CALL, an acronym, and the workshop "A CALL for Effective Communication."

The CALL Framework: The CALL framework is a toolbox of techniques designed to enhance the public speaking skills of Omani EFL students. To introduce the readers to the techniques involved in the CALL framework, a brief discussion is given below:

"C" stands for collect and collate. It underscores the significance of research and organization in speech preparation. Students are trained to organize their ideas coherently with a proper introduction, body, and conclusion (Lucas, 2020). "A" stands for anecdote and analogy. An anecdote is a short story about a real incident or person. Stories have an inherent capacity to appeal to the audience (Lucas, 2020). Therefore, students are encouraged to use their personal stories or anecdotes to infuse life into their narration. Analogy has been added to the improvised CALL framework. Analogy is considered a powerful speaking tool as it helps explain complex ideas through familiar concepts (Beebe & Beebe, 2021). "L" stands for let the audience speak too. Carnegie(1981) suggests that public speakers can become effective by making audience members a part of their presentation. "L" means last is not the least. According to Beebe& Beebe(2021), the principle of recency is vitally important in public speaking. Therefore, students are actively encouraged to end their speeches innovatively and effectively. This research study strives to empirically validate the improvised CALL framework through series of incremental steps. The improvised CALL framework is aligned with applied CBT principles, as it gradually exposes students to the principles of public speaking, giving them safe spaces to practice the techniques in a supportive and constructive atmosphere (Joyce-Beaulieu & Zaboski, 2021).

Method

This pre-experimental exploratory research study employs mixed methods to measure the efficacy of the improvised CALL framework. It uses both quantitative and qualitative data. Moreover, the research employs both retrospective then-now and retrospective post-test designs.

Workshop And Participants:

This research work has been aimed at academic and professional settings, and, therefore, the researchers organized an online workshop on communication and public speaking skills in collaboration with a higher education institution in Tamil Nadu, India. The poster for the workshop was sent to various organizations across the country, and 101 participants were chosen on a first-come, first-served basis through the registration link on the poster. Hence, the subjects were self-selected as they volunteered for the workshop. The study employed a self-selected sampling design as it is appropriate for a pre-experimental design that aims to measure the impact of an educational intervention like the improvised CALL framework. The volunteers comprise teachers, research scholars, and public speaking enthusiasts from across the country. Since the participants volunteered for the online workshop, their engagement, interest, motivation, and responsiveness were more likely to be higher, which is an important factor for evaluating the effectiveness of educational interventions. This sampling method aligns with the study's stated goal of improving public speaking skills in educational and professional settings. Specific demographic data of the participants, such as

their gender and professions, were not collected, since Public Speaking Anxiety (PSA) is deemed universal and gender-agnostic (Lintner &Belovecová, 2024). This decision is aligned with the inclusive design of the improvised CALL framework.

The workshop titled "A CALL For Effective Communication" was a highly structured activity that lasted for an hour and 30 minutes, and the activities progressed as shown in Figure 1. Each technique was allotted 20 minutes for elucidation, illustration, and implementation practice. The workshop concluded with a ten-minute Q&A session. The attendees were duly informed of the workshop's nature, and their consent for research participation was sought before the workshop commenced.

Instruments

A self-prepared non-standardized but theory-informed questionnaire was employed to capture self-perceived changes in confidence, attitudinal changes, and reduced fear of public speaking. Although the instrument was not standardized, it was based on a well-established framework of retrospective then-now design and retrospective post-test design. To address the potential problem of response-shiftbias, a retrospective then-now and post-test questionnaire was used as recommended by Howard& Dailey(1979). Sprangers&Hoogstraten (1989) identified response-shift bias as a potential contaminator of self-perceived measures. Koele & Hoogstraten (1988) recommended retrospective pre-tests and post-tests to mitigate response shift bias. When the respondents answered the 'before and after' measures with the insights gleaned from the interventions, they would be better placed to answer the questions more accurately. Confidence is a self-comparable construct, which makes it highly suitable for retrospective then-now design, with the benefit of hindsight reducing response shift bias significantly.

On the other hand, attitude and fear are affective constructs, which are more subjective and context dependent. A retrospective post-test design is more suitable for these constructs than a retrospective then-now design. However, there is a strong deterrent that appears to undermine the validity of retrospective post-tests, i.e., recall bias. Recall bias significantly impacts the accuracy of self-reported data. Nevertheless, it is true for self-reported data taken after a significant time gap. However, the researchers collected feedback immediately after the webinar with no time gap. Ochoa& Revilla(2022)legitimize the use of in-the-moment surveys to reduce recall bias, and this research study adopted the same approach. The qualitative section included three open-ended questions that sought reflective feedback from the participants regarding the usefulness of the CALL techniques, the effectiveness of the presentation, and suggestions for future CALL sessions. The researchers employed Braun & Clarke's(2006) thematic analysis method for response analysis.

Although the questionnaire was non-standardized, it was grounded in existing literature on public speaking anxiety, training, attitudinal change, and confidence-building. The questionnaire items were derived from key constructs from the literature. To improve content validity, the questionnaire was reviewed by experienced Toastmasters and public speaking experts at the university. Therefore, the instrument was theory-informed, though not formally validated by statistical methods. The questionnaire was used to capture the immediate subjective feelings of the participants regarding the

appeal of the acronym, techniques, attitudinal changes, and reduced fear of public speaking after the workshop. A Google form was used due to its perceived familiarity and user-friendliness. A 5-point Likert scale was mostly used to measure the subjective feelings of the participants in the questionnaire, with options ranging from 1 (the lowest) to 5 (the highest). The description of the rating varied from question to question as the feelings to be measured varied from case to case. Direct questions were asked wherever deemed appropriate.

PROCEDURES:

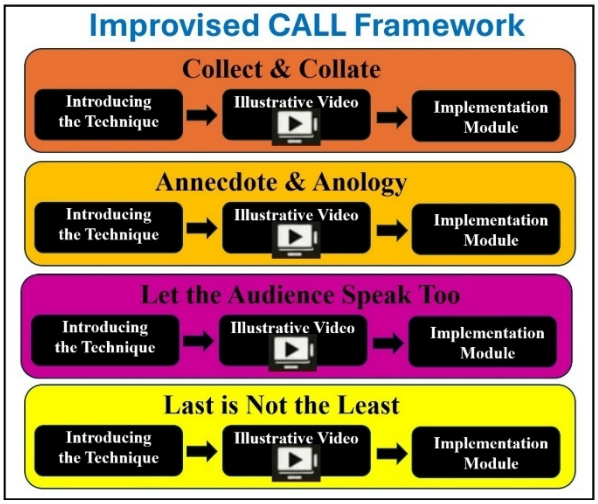
Recruitment and Consent: All participants were self-selected as they volunteered to participate in the online workshop. The participants were recruited on a first-come, first-served basis. All participants were informed of the workshop's nature and purposes, and that their responses would be used for research purposes. They were assured that their identities would be kept confidential and the data would be anonymized. Their oral consent was sought before the commencement of the workshop. All ethical considerations were observed throughout the study. This included obtaining informed consent from all participants, ensuring secure storage of data at the Preparatory Studies Centre, and maintaining the confidentiality of respondents' identities in data handling and reporting.

Initial Instructions: The participants were informed that a new toolbox of techniques would be introduced to them using illustrative videos. They were also notified thata volunteer would be permitted to use the technique immediately after the illustration and explanation. They were also informed that they could ask questions and comment on the techniques at the end of the workshop. They were clearly instructed that a questionnaire would be made available at the end of the webinar, consisting of nine perception questions where they would be expected to register their immediate subjective feelings. They were also informed of the three open-ended questions where they would be able to offer written feedback.

Experiment (Improvised CALL Framework): The participants were introduced to the improvised CALL techniques one by one, as illustrated in Figure 1. Each technique was explained with illustrative videos, and the resource person, the lead researcher, elicited responses from the participants and elucidated how different well-known speakers employed these techniques in their public speeches. After enumerating each technique, a volunteer was given a chance to use that technique in their own way. At the end, they were asked to answer the questionnaire, which was distributed in the chat box of the Google Meet platform. A filled-out questionnaire is placed in Appendix A.

Debriefing: Finally, the participants were reminded of the study's purpose and the voluntary nature of their involvement. They were also reminded that their data would be stored securely and their identity anonymized. Finally, they were thanked for their enthusiastic participation.

Figure 1: Improvised CALL Framework



Findings and Discussion

Data Analysis: Data were collected at the end of the webinar and analyzed with JASP 0.19.3 software for both paired samples t-test and Pearson correlation analyses, as it is a robust tool for statistical analysis. In other places, Google diagrams were found sufficient for the analysis.

Likability of CALL Acronym and CALL Techniques:

Table 2: The Likability of CALL Acronym and Techniques

1.1. Do you like the acronym, CALL?	Yes	No	Maybe	No Idea	–
Respondents (100)	82	1	13	4	
1.2. Do you like the CALL techniques?	Not at all	Not much	Maybe	Like them	Love them
Respondents (101)	1(1%)		3 (3%)	38 (37.6%)	59 (58.4%)

It is amply clear from Table 1, Row 1.1, that 82% of the participants liked the acronym, CALL. While 13% were ambivalent, 5% were clearly in the negative. Even the workshop was titled "A CALL for Effective Communication" in congruence with the acronym. Therefore, the near emphatic responses suggest that the acronym CALL could be considered effective. Responding to the question on CALL techniques (Table 1, Row 1.2), 58.4% responded most emphatically. 37.6% respondents said they liked the acronym, which implies emphatic affirmation. While 3% responded with an ambivalent "maybe," just 1 respondent chose the "not at all" option. Given these responses, it is safe to conclude that the participants were overwhelmingly positive about the usefulness of the techniques.

The Most and Least Useful Technique

Table 3, Row 3.1, makes it apparent that the "collect and collate" technique was judged the most useful with a 40.6% approval rate, followed by 'anecdote and analogy' and 'let the audience speak too' techniques with 38.6% and 37.6% approval rates, respectively. Considering these responses, the last technique needs to be fortified further with more impactful examples and real-life applications.

Table 3: Most and Least Useful Techniques

3.1. Which technique is the most useful in your opinion?	Collect &Collate	Anecdotes & Analogy	Let the Audience Speak Too	Last is not the Least	–
Respondents (101)	41 (40.6%)	39 (38.6%)	38 (37.6%)	21 (21.8%)	–
3.2. Which technique is the least useful in your opinion?	Collect &Collate	Anecdotes & Analogy	Let the Audience Speak Too	Last is not the Least	All of them
Respondents (101)	13 (12.9%)	9 (8.9%)	5 (5%)	4 (4%)	70 (69.3%)

Although 69.3% of the respondents reported confidence in all the techniques (Table 2, Row 2.2), the rest believed that some techniques were not very useful. While 12.9% of respondents chose "collect and collate" the least useful technique, 8.9% and 4.95% of respondents chose "anecdote and analogy" and "let the audience speak too" techniques, respectively. Only 3.96% of respondents chose the "last is not the least" technique to be the least useful. There seems to be some variance between the two figures. While the "last is not the least" technique was certainly not among the most favorite techniques, it was also not the least favorite technique.

On the other hand, "collect and collate" turns out to be both "the most useful technique" and "the least useful technique"

from the participants' perspectives. This could be because these respondents might have thought that the "collect and collate" technique is so familiar and rudimentary that it can be considered the least useful technique. Familiarity seems to breed indifference, if not contempt. However, the very same indifference prevents people from paying close attention to minute details that make the difference between a good speech and a lackluster one. The overall lesson is that all the techniques could be further enhanced since the feedback suggests some dissatisfaction. This certainly requires a closer scrutiny of the techniques and multiple trials.

Confidence Level Before and After the Webinar

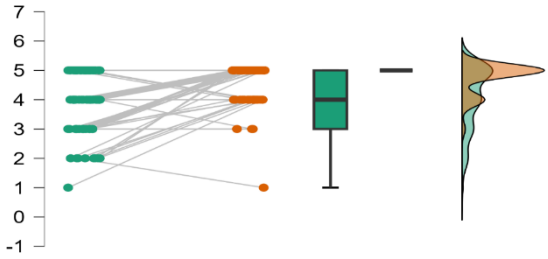
Descriptive statistics (Table 4) were calculated using JASP 0.19.3 software to summarize the data for the retrospective within-subjects then–now design, i.e., confidence level before and after the webinar.

Table 4: Descriptive Statistics - Confidence Level Before and After the Webinar

	How confident were you before the webinar?	How confident are you after the webinar?
Valid	101	101
Missing	0	0
Mean	4.079	4.693
Std. Deviation	1.036	0.628
Coefficient of variation	0.254	0.134
Minimum	1.000	1.000
Maximum	5.000	5.000

Before the workshop, the respondents had a mean score of M = 4.079 (SD = 1.036). After the workshop, the respondents had a mean score of M = 4.693 (SD = 0.628). The coefficients of variation before and after the webinar were 0.254 and 0.134, respectively. The coefficients of variation decreased significantly from 0.254 to 0.134, indicating a reduction in variability and more consistent outcomes post-intervention.

Figure 2: Confidence Before and After Webinar



The raincloud plot (Figure 2) vividly illustrates the upswing in the self-reported confidence level of the respondents after the webinar. The researchers chose the raincloud plot due to its illustrative brilliance, which captures the stabilization effect more tellingly, with box plots, violin plots, and jittered points. By dint of this masterful combination, it makes possible the simultaneous illustration of raw data, distribution, and summary statistics (Allen et al., 2019)

The paired samples t-test revealed a significant difference in the then-now scores following the workshop, $t(100) = 6.298$, $p < .001$. Since the p-value is <.001, the result can be considered statistically very significant. An anomaly occurred during the analysis; detailed data and explanation are given in Appendix B. The Shapiro-Wilk test indicated non-normality (W=0.814, p< .001). As a result, the researchers decided to run the Wilcoxon signed-rank test as it does not assume normality (Akeyede et al., 2014). The Wilcoxon signed-rank test confirmed the results of the paired samples t-test (W=1016.00, z=5.195, p<.001). The rank-biserial correlation (r_{rb}=0.88) with its large effect size indicates the positive impact of the workshop in enhancing the confidence level of the participants. Detailed data of all paired samples t-test and Wilcoxon signed-rank test are given in Appendix B.

Reduced Fear of Public Speaking and Attitudinal Change

Table 5: Reduced Fear and Attitudinal Change

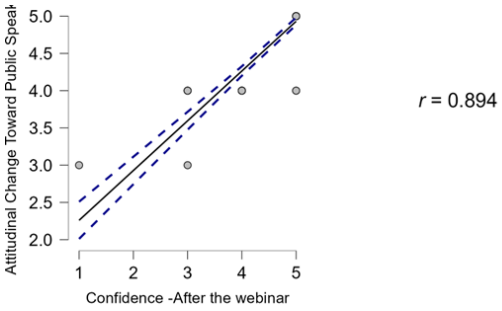
5.1. Did the webinar help you reduce your fear of public speaking?	Not at all	Not much	To some extent	To a considerable extent	To a great extent
Respondents (100)	1 (1%)	–	–	21 (20.8%)	79 (78.2%)
5.2. Did the webinar help you to change your attitude towards public speaking?	Not at all	Not much	To some extent	To a considerable extent	To a great extent
Respondents (101)	–	–	2 (2%)	24 (23.8%)	75 (74.3%)

Table 5, Row 5.1, clearly shows that the participants felt that the webinar helped them reduce their fear of public speaking. A whopping 100 out of 101 participants responded that it helped them reduce their fear of public speaking. While most participants (78.2%) said that it helped them reduce their fear of public speaking to a great extent, the rest of them (20.8%) said that it helped reduce their fear of public speaking to a considerable extent, but for the lone participant who said it did not help reduce his/her fear of public speaking at all. An outlier indeed. Table 5, Row 5.2, vividly illustrates the self-perceived attitudinal changes towards public speaking. Of the 101 participants, 99 felt that the webinar helped them change their attitude towards public speaking. While most participants (74.3%) responded that it helped change their attitude to a great extent, others (23.8%) said that it helped them change their attitude to a considerable extent. Only 2 participants said it helped change their attitude to some extent. Therefore, it is evident that the participants felt that the webinar effected a positive attitudinal change towards public speaking.

Confidence After the Webinar vs. Attitudinal Change Towards Public Speaking

Pearson's correlation test was conducted to measure whether there was any positive correlation between the two dependent variables, i.e., confidence level after the webinar and attitudinal change towards public speaking. The test showed highly significant results with $r = 0.894$, $p < .001$. As seen in Figure 3, Pearson's correlation coefficient (r = 0.894) indicates a highly positive correlation between the dependent variables. The points cluster closely along the regression line, confirming the strong correlation. Detailed data of Pearson's correlation tests are given in Appendix B.

Figure 3: Confidence After the Webinar vs. Attitudinal Change Towards Public Speaking



Similarly, Pearson's correlation test was conducted to measure whether there was any positive correlation between the two dependent variables, i.e., confidence level after the webinar and reduced fear of public speaking. The test showed highly significant results with $r = 0.907$, $p < .001$. Since there is an irrefutable positive correlation between the two dependent variables, it is established that a rise in confidence level tends to reduce the fear of public speaking.

Figure 4: Confidence After the Webinar vs. Reduced Fear of Public Speaking

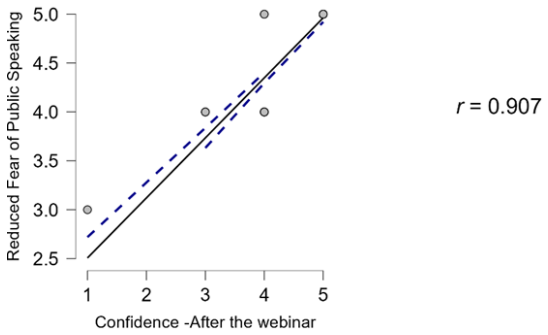


Figure 4 illustrates the very strong positive correlation between the dependent variables with Pearson's correlation coefficient (r = 0.907). The points follow the regression line very closely, confirming the very strong correlation.

Table 6: Overall Rating for the Webinar

Overall rating for the webinar	Poor	Not good	Good	Very good	Excellent
Respondents (101)	1 (1%)		1 (1%)	21 (20.8%)	78 (77.8%)

The overall rating for the webinar, as seen in Table 6, has been overwhelmingly positive, with 98.02% positive ratings, which could be further classified into 77.2% "excellent" ratings and 20.8% "very good" ratings. Therefore, there is very little doubt that the webinar, "A CALL for Effective Communication" was rated highly, and the rating could safely be linked to the effectiveness of the CALL techniques in enhancing public speaking skills. From a thematic analysis of the answers to the open-ended questions using Braun & Clarke (2006) method, it could be inferred that the participants believed the techniques were instrumental in improving their public speaking skills. They felt that the presentation techniques, illustrative videos to elucidate the techniques, the PPT, and the presenter's self-confidence and conviction were praiseworthy. They opined that the webinar was enjoyable, informative, practical, and interactive. They added that the webinar was inspiring, motivating, and unique despite being simple and short. They wanted such workshops to be organized in the future too. The respondents' feedback suggests an overwhelmingly positive response to the improvised CALL framework.

DISCUSSION

The research objectives of this exploratory study are fivefold; to measure the extent of the acronym's appeal from the respondents' viewpoint, to measure the usefulness of the CALL techniques in improving public speaking skills from the participants' perspective, to statistically measure the difference between the confidence level before and after the online workshop, to find out the nature of correlation between confidence level after the intervention and reduced fear of public speaking and to find out the nature of correlation between confidence level after the intervention and attitudinal changes towards public speaking. The findings clearly suggest that the participants loved the CALL acronym, reaffirming the efficacy of mnemonics in teaching and learning (Putnam, 2015). Existing public speaking frameworks such as PREP, TTT, and SHARE address specific areas of public speaking. The improvised CALL framework is the first documented framework that comprehensively covers public speaking from collecting information to closing the speech.

Regarding the usefulness of techniques, it is evident that all techniques are deemed useful, though feedback indicates scope for improvement. Though different scholars have focused on individual techniques to improve public speaking, there is no documented pedagogical framework that covers public speaking in its entirety. Tamayo et al. (2024) argue that the ECRIF framework helps students improve their speaking skills. Nevertheless, these pedagogical techniques are designed to enhance speaking skills, not specifically public speaking skills. This is the pedagogical gap that the CALL framework has bridged.

Regarding the most important research question of the article, i.e., self-perceived confidence level before and after the workshop, the results are emphatically clear as there is a palpable spike in their confidence level. This aligns with the research findings ofNadiah et al.(2019), highlighting the role of public speaking workshops in improving participants' confidence levels. Moreover, the findings also indicate a very strong positive correlation between increased confidence level and reduced fear of public speaking. This finding strongly corroborates that of Yansyah(2019), who reports a strong positive correlation between training and anxiety reduction. Although the study does not directly measure the correlation between confidence level and reduced fear of public speaking, it displays notable similarities. Besides, there is also a strong positive correlation between increased confidence and attitudinal change towards public speaking. Again, Nadiah et al.(2019)reaffirm that public speaking training had effected an attitudinal change in their students. Future public speaking program designs could focus on confidence-building measures early in their curriculum by providing safe spaces that offer a positive and supportive practice environment with easy-to-use tools and hands-on implementation modules. Increased confidence levels are consistently associated with reduced public speaking anxiety and positive attitudinal change towards public speaking.

The research findings indicate the effectiveness of the improvised CALL framework in enhancing the public speaking skills of the participants, besides improving confidence levels, reducing public speaking anxiety, and effecting positive attitudinal changes towards public speaking among the participants. The improvised CALL framework can be employed inEFL classrooms and expanded to other educational and professional settings, as the findings suggest wider applicability. The framework offers easy-to-use techniques that will be beneficial for both the educators and the students, making it a versatile tool for teaching public speaking. The framework is gender-agnostic as public speaking anxiety affects all humans across the board(Lintner&Belovecová, 2024). These findings support the integration of the CALL framework in public speaking curricula and professional training programs to enhance communication and public speaking skills. Nonetheless, this study has a few limitations. First and foremost, this is a pre-experimental within-subjects exploratory study with a retrospective post-test design. Therefore, the study must be conducted experimentally with randomized trials to establish irrefutable scientific validity. The questionnaire used in the study was not standardized, though theory-informed, as the purpose was to capture the immediate subjective feelings of the participants. Therefore, any future study could use a standardized questionnaire. Further research could focus on expanding the CALL framework to make it more fruitful and testing its efficacy using varied scientific methods with different populations.

Conclusion

This research study has demonstrated the significance of public speaking training to the students in the 21st-century job market, where soft skills are considered vitally important. The study underscored the utility of public speaking training programs in enhancing the confidence level of the participants, which also significantly helped reduce their public speaking anxiety and effect an attitudinal change towards public speaking. These findings certainly add to the existing body of literature on public speaking by introducing the improvised CALL framework and

empirically testing it. Based on the findings of the study, it is strongly recommended that public speaking training programs be made mandatory in colleges and universities. It is also recommended that higher education institutions integrate CALL techniques into their curricula. Further research is needed to examine the long-term effects of public speaking training programs on participants and innovative teaching methods like CALL in enhancing student engagement. Additionally, future research could focus on the expanded CALL framework and explore its cross-cultural applicability by conducting randomized control trials and longitudinal studies, which would help validate the effectiveness of the expanded framework across diverse populations and provide deeper insights. To sum up, this research study highlights the crucial role of innovative techniques in teaching public speaking skills, as well as confidence in reducing public speaking anxiety and shaping a positive attitude towards public speaking, offering invaluable guidance to educators and policymakers.

Statements and Declarations

Funding

The study received no funding**.**

Disclosure Statement

The authors declare that they have no competing interests.

Ethical Approval

The researchers got the necessary ethical approval from the university.

Consent for Human Participants

All ethical procedures were followed in the study. This included obtaining informed consent, ensuring secure storage of data at the Preparatory Studies Centre, UTAS-Ibra, and maintaining the confidentiality of the respondents' identities in data handling and reporting.

Availability of Data and Materials

The data supporting the study's findings are securely stored at the Preparatory Studies Center, UTAS-Ibra. Access to data will be provided upon request, subject to institutional approval and consideration of ethical implications.

Clinical Trial Number

Not Applicable

Code Availability

Not Applicable

Authors' Contributions

Elamparithy Selvarasu conceptualized the study, conducted the workshop, authored the main draft, and serves as the corresponding author. Ramesh Palanisamy and Vimal Kumar Stephen critically reviewed the manuscript. Gopi Krisna proofread the manuscript and prepared the illustration.

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APPENDIX-A: Sample Participant Feedback

A CALL for Effective Communication: Sample Feedback from Google Forms

Did the webinar help you reduce your fear of public speaking?

Rating: 1 2 3 4 5 (To a great extent)

Did the webinar help you to change your attitude towards public speaking?

Rating: 1 2 3 4 5 (To a great extent)

Do you like the acronym 'CALL'?

Yes No Maybe No idea

Do you like CALL techniques?

Rating: 1 2 3 4 5 (Love them)

Which technique is the most useful in your opinion?

Collect and Collate

Anecdote and Analogy

Let the audience speak too

Last is not the least

Which technique is the least useful in your opinion?

Collect and Collate

Anecdote and Analogy

Let the audience speak too

Last is not the least

All are useful

How confident were you before the webinar?

Rating: 1 2 3 4 5 (To a great extent)

How confident are you after the webinar?

Rating: 1 2 3 4 5 (To a great extent)

Overall rating for the webinar:

Rating: 1 2 3 4 5 (Excellent)

What did you like about the techniques?

Narration techniques are very good and the presentation of videos to defend the points

What did you like about the presentation?

Excellent session sir

Your valuable suggestions for improvement:

None

Appendix- B: Paired Sample T-Tests, Wilcoxon Signed-Rank Tests & Pearson's Correlation Tests

Table 1: Paired Samples T-Test Then – Now

Measure 1		Measure 2	*t*	df	*p*	Cohen's *d*	SE Cohen's *d*
How confident were you before the webinar?	–	How confident are you after the webinar?	−6.298	100	< .001	−0.627	0.120

Note. Student's *t*-test.

The paired samples *t*-test (Table 1) showed a significant difference in the then-now scores following the conduct of the workshop, $t(100) = -6.298$, $p < .001$. Since the *p-value* is <.001, the result can be considered statistically very significant. However, the *t*-value (−6.298) contradicts the descriptive results (Table 1), which showed a noticeable increase in the mean (4.673) for confidence level after the workshop compared to the mean (4.079) for confidence level before the workshop. Moreover, Cohen's d SE value (−0.627) is indicative of a definitive error in statistical calculations, as standard error cannot be negative. In addition to this anomaly, Cohen's *d* value (0.069) also confirms that this statistical analysis is erroneous, as it is incongruent with the observed descriptive data. Therefore, the researchers switched the variables in the Measure 1 and Measure 2 columns and ran the paired samples *t*-test again.

Table 2: Paired Samples t-Test Now–Then with Switched Variables

Measure 1	Measure 2	*t*	df	*p*	Cohen's *d*	SE Cohen's *d*
How confident are you after the webinar?	How confident were you before the webinar?	6.298	100	< .001	0.627	0.120

Note. Student's *t*-test.

This maneuvering (Table 2) set right all the identified anomalies, contradictions, and inconsistencies. Now, the *t*-value aptly records a positive change (6.298) in line with the increased mean score for the confidence level after the webinar. Now Cohen's *d* SE is in the positive (0.120), and it is found to be well within the normal range. Above all, Cohen's *d* value (0.627) indicates a medium effect size.

Table 3: Wilcoxon Signed-Rank Test Now–Then

Measure 1	Measure 2	*W*	*z*	*df*	*p*	Rank-Biserial Correlation	SE Rank-Biserial Correlation
How confident are you after the webinar?	How confident were you before the webinar?	1016.000	5.195		< .001	0.880	0.168

Note. Wilcoxon signed-rank test.

Given the significant non-normality, the Wilcoxon signed-rank test was used. The results (Table 3) indicated a significant difference between the self-perceived confidence level before and after the webinar ($W = 1016.00$, $z = 5.195$, $p < .001$, $r = 0.880$, SE = 0.168). Both the *W* value (1016.000) and the *z* value (5.195), which represent the test statistic and the standardized test statistic, indicate a significant difference between the observed measures, i.e., perceived confidence

level before and after the webinar. This very well aligns with the *t*-value (6.298) of the paired sample *t*-test. The *p*-value (<.001) is the same for both tests, indicating strong statistical validity of the results. The Wilcoxon signed-rank test indicates a large effect size (0.880), slightly different from the paired samples *t*-test, which indicates a medium effect size (0.627). Though the rank-biserial discrepancy reported in JASP 19 (r = 0.880) is different from the approximated r (5.195), this discrepancy happens due to JASP's formula, which is based on positive and negative ranks. If the approximated r is considered, there is no major difference in the effect size, as both paired samples *t*-test's Cohen's d (0.627) and the approximated r (5.195) indicate a medium effect size. Finally, the reported SE in the Wilcoxon signed-rank test (0.168) is close to the Cohen's d SE (0.120). Therefore, the findings of the Wilcoxon signed-rank test can be considered robust as they closely align with those of the paired samples *t*-test. Based on these statistical findings, it can be concluded that there is a statistically significant change in the self-perceived confidence level of the participants after the online workshop.

Table 4: Confidence After the Webinar vs Attitudinal Change. Pearson's Correlations

		n	Pearson's *r*	*p*	Effect size (Fisher's *z*)	SE effect size
Confidence after webinar	Attitudinal change	101	0.894	< .001	1.441	0.101

As seen in Table 4, the effect size (z=1.441, SE=0.101) adds vitality to the implications of the p-value and Pearson's r. Therefore, it is established that increased confidence positively influences participants' attitudes towards public speaking.

Table 5: Confidence After the Webinar vs Reduced Fear of Public Speaking. Pearson's Correlations

		n	Pearson's r	*p*	Effect size (Fisher's *z*)	SE effect size
Confidence after the webinar	Reduced fear of public speaking	101	0.907	< .001	1.508	0.101

As shown in Table 5, the large effect size (z=1.508, SE=0.101) confirms the findings derived from the p-value and Pearson's r, that increased confidence significantly reduces Public Speaking Anxiety (PSA).