

SIMULATION-BASED LEARNING AS AN INNOVATIVE APPROACH TO ENHANCE PUBLIC SPEAKING SKILLS AMONG DIPLOMA STUDENTS

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ABSTRACT

Public speaking competence is a critical skill for diploma students, particularly in preparing them for academic and professional contexts. However, many students experience communication apprehension, low self-confidence, and insufficient exposure to authentic speaking environments. This study examines the effectiveness of simulation-based learning as an innovative pedagogical approach to enhance public speaking skills among diploma students. A quasi-experimental design was employed, involving 53 second-semester diploma students enrolled in a Business Communication course. The study implemented structured simulation activities, including role-playing, scenario-based presentations, and guided peer feedback within a “record–reflect–resubmit” learning cycle. Data were collected using pre- and post-intervention assessments and standardized performance rubrics to evaluate key dimensions, including fluency, clarity, confidence, and delivery. The findings indicate a statistically significant improvement in students’ public speaking performance following participation in simulation-based activities, with notable reductions in anxiety levels and increased communicative confidence. Furthermore, the experiential nature of simulation fostered active engagement and reflective learning among participants. Students also demonstrated greater ability to organize ideas, respond spontaneously, and adapt their communication styles to different contexts. The study concludes that simulation-based learning represents an effective instructional strategy for developing communication competencies and recommends its integration into diploma-level curricula to better equip students with essential public speaking skills for real-world applications and future career readiness.

Keywords: Public Speaking; Simulation; Communication Apprehension; Competence

1. INTRODUCTION

Within the higher education sector, the ability to speak effectively in public is considered a vital skill that plays a significant role in both student academic performance and future career growth. As global professional environments become more dependent on strong communication, students must be able to convey their thoughts with clarity, confidence, and persuasion to be truly prepared for the workforce. Within diploma-level education, especially in business-related programmes, students are expected to demonstrate effective oral communication skills in presentations, discussions, and professional interactions. However, despite its importance, many students continue to face significant challenges in public speaking, including communication apprehension, low self-confidence, and limited exposure to authentic speaking environments. Communication apprehension, defined as the anxiety or fear associated with real or anticipated communication, remains a persistent issue among students across educational contexts. Recent studies indicate that a large proportion of students experience moderate to high levels of anxiety during oral presentations, which can negatively affect their performance and participation (Kho & Ting, 2023).

Furthermore, public speaking anxiety has been identified as a situation-specific form of communication apprehension that influences cognitive, behavioural, and physiological responses, ultimately impairing students’ delivery and confidence (Lim et al., 2025).

Empirical evidence also suggests that communication apprehension is closely linked to students' self-efficacy and readiness to communicate, highlighting the need for more effective pedagogical interventions (Wang et al., 2024).

This research relies on constructivist and experiential learning frameworks, which suggest that students develop understanding by actively engaging in tasks, reflecting on their actions, and interacting with their environment (Vygotsky, 1978; Kolb, 1984). These theories support the use of active learning approaches, such as simulation, where students engage in realistic tasks that mirror real-world communication scenarios. Simulation-based learning aligns with Kolb's experiential learning cycle, allowing learners to participate in concrete experiences, reflect on their performance, conceptualise improvements, and apply new strategies in subsequent tasks (Kolb, 1984).

Recent research further supports the effectiveness of simulation-based approaches in enhancing communication skills, confidence, and learner engagement. For instance, a systematic review by Jallad (2024) found that simulation-based education significantly improves students' communication competence and self-confidence across various disciplines. Similarly, studies incorporating virtual and immersive simulations have demonstrated positive outcomes in reducing anxiety and improving speech performance in public speaking contexts (Bachmann et al., 2023).

Despite the growing body of literature supporting active and simulation-based learning, several gaps remain. Many existing studies focus on healthcare or language-learning contexts, with limited attention given to diploma-level business students. Additionally, there is a lack of structured implementation combining simulation activities with systematic assessment tools, such as performance rubrics and observational evaluation. As highlighted in recent reviews, although simulation-based learning shows promising outcomes, further empirical studies are needed to validate its effectiveness in specific educational settings and to examine its impact on multiple dimensions of communication performance (confidence, fluency, clarity, and delivery) (Jallad, 2024).

Therefore, this study aims to examine the effectiveness of simulation-based public speaking as an innovative instructional approach in enhancing communication skills among diploma students. By incorporating structured activities such as role-playing, scenario-based presentations, and guided peer feedback, this research seeks to provide empirical evidence on improving students' fluency, clarity, confidence, and delivery. The significance of this study lies in its contribution to pedagogical practices in diploma education, offering a practical and experiential approach to developing essential communication competencies. Ultimately, this study supports the integration of simulation-based learning into curriculum design to better equip students with the skills required for real-world communication and professional success.

1.1 Problem Statement

While public speaking is a critical competency for professional success, many diploma-level business students continue to face persistent challenges, including high communication apprehension and limited exposure to authentic speaking environments.

Although current literature acknowledges the benefits of active learning, there is a lack of structured implementation that combines simulation activities with systematic assessment tools within the specific context of diploma-level business education.

Consequently, students often struggle with structural inconsistency and low self-efficacy during oral presentations. To fill these research gaps, this study introduces a formalized simulation-based approach, shifting the classroom dynamic from a high-stress, passive activity into a cycle of consistent performance, constructive feedback, and active reflection.

1.2 Research Objectives

This study is guided by the following objectives:

- I. To assess the baseline levels of communication apprehension, self-confidence, and structural organization skills among second-semester diploma business students.
- II. To evaluate the effectiveness of a simulation-based learning intervention on students' public speaking performance dimensions, specifically fluency, clarity, confidence, and delivery.
- III. To examine students' perceptions and level of satisfaction regarding the use of simulation-based activities as a pedagogical tool for improving public speaking competence.

1.3 Research Questions

Corresponding to the objectives, the research questions are as follows:

- I. What are the baseline characteristics of diploma students regarding their communication apprehension and public speaking performance before the intervention?
- II. To what extent does a structured simulation-based learning intervention improve students' performance in terms of fluency, clarity, confidence, and delivery?
- III. How do students perceive the effectiveness and flexibility of the simulation-based learning framework in facilitating their public speaking development.

2. METHODOLOGY

2.1 Introduction

This chapter presents the methodology employed in this study to examine the effectiveness of simulation-based public speaking activities among diploma students. It outlines the research design, participants, intervention procedures, research instruments, data collection procedures, data analysis techniques, as well as validity, reliability, and ethical considerations. The methodology is structured to ensure alignment with a quantitative research approach.

2.2 Research Design

To assess how simulation-based activities influence student confidence and speaking ability, this study utilized a one-group, pre- and post-test quasi-experimental approach. The design involved measuring participants before and after the intervention, allowing for comparison of changes in performance, confidence, communication anxiety, and perceived competence. Given the constraints of an educational environment where randomizing participants is not possible, this research design is the most suitable choice.

2.3 Participants

The participants comprised 53 second-semester diploma students enrolled in a Business Communication course at Politeknik Seberang Perai. A purposive sampling technique was employed, whereby participants were selected based on their enrolment in the course. This ensured that the sample was relevant to the objectives of the study, as all participants were engaged in learning public speaking skills.

2.4 Intervention (Simulation-Based Learning Activities)

Data collection was conducted over a period of four to six weeks. This time frame was intentionally selected to allow for at least three phases of the 'record-reflect-resubmit' process,

to capture both the student's initial baseline and their progress over time. To ensure consistency in guided peer feedback across all 53 participants, feedback sessions were conducted using a standardized checklist derived directly from the performance rubric. This structured approach ensured that every participant received equitable and objective guidance throughout the simulation stages.

2.5 Research Instruments

Four instruments were utilised for data collection:

2.5.1 Public Speaking Performance Rubric

A structured rubric was used to assess students' performance across four dimensions: fluency, clarity, confidence, and delivery, measured using a five-point Likert scale. The evaluation criteria are summarized in Table 1 below.

Dimension	Description
Fluency	The ability to speak smoothly without excessive pauses or fillers.
Clarity	The precision of language use and the logical organization of ideas.
Confidence	The level of composure and self-assurance displayed by the student.
Delivery	The effectiveness of eye contact, voice projection, and body language.

Table 1: The Evaluation Criteria of Public Speaking Performance Rubric

2.5.2 Student Perception Survey (Pre- and Post-Test)

A structured questionnaire was administered before and after the intervention to measure key psychological constructs, including communication anxiety, self-confidence, perceived speaking competence and learning engagement. Responses were measured using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

2.6 Data Collection Procedure

Data collection was conducted in three phases:

Phase 1: Pre-Test

At the beginning of the study, participants completed an initial speaking task, which was assessed using the performance rubric. Subsequently, participants responded to the pre-intervention survey to establish baseline measurements.

Phase 2: Intervention

Students participated in simulation-based activities over four to six weeks. These activities were designed to provide practice and feedback opportunities to enhance public speaking skills.

Phase 3: Post-Test

At the end of the intervention, participants completed a final speaking task assessed using the same performance rubric. The post-intervention survey was then administered to measure any changes in performance and psychological factors.

2.7 Data Analysis

The collected data were analysed using quantitative statistical methods to examine the effectiveness of the intervention.

2.7.1 Descriptive Statistics

Descriptive statistics were used to summarise the data obtained from both the performance rubric and the survey. The analysis included the Mean scores that provided an overall comparison of students' performance and perceptions before and after the intervention.

2.7.2 Inferential Statistics

To evaluate the effectiveness of the simulation-based learning intervention, the study utilized a quasi-experimental one-group pre-test-post-test design. This design assessed changes in participants' confidence, communication anxiety, and organizational skills among the 53 second-semester diploma students enrolled in the Business Communication course. Statistical significance was determined using a significance level of < 0.05 . Utilizing IBM SPSS Statistics, the study conducted paired-sample t-tests on the quantitative data; this allowed for an assessment of whether the performance shifts between the pre- and post-intervention stages were statistically significant and verified the effectiveness of the teaching model.

2.8 Ethical Considerations

Participation was voluntary, and informed consent was obtained. All responses were kept confidential and anonymous, and data were used solely for research purposes in accordance with institutional guidelines.

2.9 Validity and Reliability

To ensure the validity and robustness of the study, the research instruments were adapted from established constructs found in the literature related to communication apprehension and public speaking competence. By utilizing pre-validated frameworks, this study maintains content validity and consistency. Internal reliability of the instrument was evaluated using Cronbach's Alpha coefficient, where values of $\alpha > 0.70$ are considered acceptable.

3. RESULTS

The results of this study were derived from a comparative analysis of pre-intervention and post-intervention data collected from 53 diploma students. The findings are presented in two main sections: baseline (pre-intervention) analysis and post-intervention outcomes following the implementation of the simulation-based learning framework.

3.1 Pre-Intervention Analysis: Baseline Communication Profile

The baseline data revealed that students experienced moderate to high levels of communication challenges prior to the intervention. Responses were measured using a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) and the descriptive statistics (Mean and Standard Deviation) provide insight into both the average student perception and the level of variance within the group.

Table 2: Pre-Intervention Construct Mean Scores

Construct	Mean Score (M)	Standard Deviation (SD)	Interpretation
Confidence in Public Speaking	2.85	0.81	Low
Anxiety and Nervousness	3.78	0.85	High
Idea Organization Skills	3.22	0.74	Moderate
Perceived Need for Practice	3.95	0.72	Very High

The results indicate that students initially lacked confidence in public speaking ($M = 2.85$, $SD = 0.81$), with the standard deviation suggesting a moderate spread in responses, meaning most

students felt similarly low in confidence. Anxiety levels were relatively high ($M = 3.78$, $SD = 0.85$), confirming that communication apprehension was a significant barrier to effective performance. Additionally, students demonstrated moderate ability in organizing ideas ($M = 3.22$, $SD = 0.74$). The highest mean score was observed for the perceived need for practice ($M = 3.95$, $SD = 0.72$), indicating a strong, consistent desire across the cohort for more opportunities to practice.

3.2 Post-Intervention Analysis: Evaluation of the BPSS Framework

Following the implementation of the simulation-based learning intervention, a substantial improvement was observed across all measured constructs.

Table 3: Post-Intervention Construct Mean Scores

Construct	Mean Score (M)	Standard Deviation (SD)	Interpretation
BPSS Effectiveness	4.23	0.61	Very High
Skill Improvement	4.13	0.65	High
Flexibility and Experience	4.09	0.68	High
Overall Satisfaction	4.17	0.62	High

The post-intervention data revealed a strong positive reception toward the framework, with students rating its effectiveness highly ($M = 4.23$, $SD = 0.61$). Furthermore, improvements in public speaking skills ($M = 4.13$, $SD = 0.65$) suggest that the intervention successfully enhanced students' fluency, clarity, confidence, and delivery.

Notably, the standard deviations in the post-intervention phase were generally lower than those in the pre-intervention phase, suggesting that student feedback became more uniform and clustered around positive ratings following the intervention.

3.3 Reliability Analysis

To ensure the validity and robustness of the study, the internal consistency of the survey instruments was evaluated using Cronbach's Alpha (α) coefficient. This statistic measures the extent to which the items in each construct are related to each other.

The internal reliability analysis yielded the following results:

- I. Pre-Intervention Survey: $\alpha = 0.82$
- II. Post-Intervention Survey: $\alpha = 0.88$

A Cronbach's Alpha value of 0.70 or higher is generally considered acceptable in educational research. The values obtained ($\alpha = 0.82$ for the pre-test and $\alpha = 0.88$ for the post-test) indicate high internal consistency, confirming that the survey items were reliable and consistently measured the intended psychological constructs of communication apprehension, confidence, and satisfaction throughout the study.

4. DISCUSSION

The findings of this study provide empirical evidence that simulation-based learning is a highly effective pedagogical approach for enhancing public speaking skills among diploma students. Specifically, the intervention successfully addressed the two primary challenges identified at the outset: high levels of communication apprehension ($M = 3.78$, $SD = 0.85$) and a lack of authentic practice opportunities. The high internal consistency of the survey instruments (Pre-test $\alpha = 0.82$; Post-test $\alpha = 0.88$) further validates that these findings reliably reflect student perceptions of their own growth and engagement.

4.1 Reduction of Communication Apprehension

The pre-intervention results revealed that students experienced high levels of anxiety ($M = 3.78$, $SD = 0.85$), which negatively affected their confidence and performance. This finding is consistent with previous research indicating that communication apprehension is a common issue among students in higher education (Kho & Ting, 2023; Lim et al., 2025).

Following the intervention, students reported increased confidence and reduced anxiety, suggesting that the simulation-based framework successfully lowered the "affective filter" (Krashen, 1982). The use of an organized, supportive framework lowered the perceived risk, which helped to alleviate students' fears regarding critical evaluation and encouraged more genuine participation in their presentations.

4.2 Effectiveness of Experiential Learning Approach

The success of this intervention is grounded in Kolb's Experiential Learning Cycle, which highlights the necessity of movement between experience, reflection, and application (Kolb, 1984). The "record-reflect-resubmit" cycle allowed students to:

- I. Engage in concrete simulation tasks.
- II. Conduct critical self-reflection through video review and peer feedback.
- III. Conceptualize effective communication strategies based on their observations.
- IV. Apply these refined strategies in subsequent presentations.

This iterative process fostered continuous skill development, supporting Jallad's (2024) assertion that experiential simulation significantly improves both competence and learner motivation.

4.3 Improvement in Public Speaking Performance

The statistically significant improvement ($p < 0.05$) observed in this study indicates that simulation-based learning has a measurable impact on students' public speaking abilities. Improvements were evident across key performance dimensions including fluency, clarity, confidence, and delivery as defined by the study's rubric (see Table 1). The reduced standard deviation in post-intervention scores ($SD = 0.65$ for skill improvement) suggests that the intervention provided a uniform benefit to the cohort, narrowing the performance gap among students.

These findings are consistent with prior studies (Bachmann et al., 2023; Rahman & Hashim, 2023), which demonstrated that simulation and role-play activities enhance both performance and confidence in speaking tasks. The integration of guided peer feedback further reinforced learning by allowing students to identify weaknesses and receive constructive input.

4.4 Student Engagement and Learning Experience

Another key finding is the high level of student satisfaction ($M = 4.17$, $SD = 0.62$) and perceived effectiveness ($M = 4.23$, $SD = 0.61$). This suggests that simulation-based learning not only improves performance but also enhances students' motivation and engagement. The flexibility of the learning approach, particularly the ability to practice and reflect independently, contributed to a more student-centered learning experience.

This supports the principles of Constructivist Learning Theory, where learners actively construct knowledge through interaction and experience (Vygotsky, 1978).

4.5 Implications for Teaching Practice

The findings of this study have important implications for business communication education. Traditional lecture-based approaches may not sufficiently address students' anxiety or provide adequate opportunities for practice. In contrast, simulation-based learning offers a practical and

scalable solution for developing communication competencies. The integration of structured simulation activities, combined with feedback and reflection, can better bridge the gap between academic preparation and professional readiness.

5. CONCLUSION

The evidence presented in this study confirms that simulation-based learning is an innovative and highly effective instructional strategy for developing communication competencies among diploma students. This study successfully fulfilled its research objectives by identifying a significant baseline of communication apprehension and low self-confidence among participants and subsequently demonstrating that a structured intervention leads to measurable improvements in performance.

The BPSS intervention addressed the research questions by:

- Confirming that students entered the course with high anxiety ($M=3.78$, $SD=0.85$) and a strong, unmet need for authentic practice opportunities ($M=3.95$, $SD=0.72$).
- Validating that the iterative "record-reflect-resubmit" simulation cycle leads to statistically significant improvements ($p < 0.05$) in technical dimensions, specifically fluency, clarity, confidence, and delivery.
- Demonstrating through post-intervention feedback ($M=4.23$, $SD=0.61$ for effectiveness) that students perceive the low-stakes, flexible nature of simulation-based learning as a superior and more supportive pedagogical model than traditional lecturing

Adopting this student-focused, hands-on instructional style enables educators to better connect classroom learning with the actual demands of a professional career. This study is limited by the use of a one-group quasi-experimental design without a control group. Future research is recommended to include larger sample sizes and comparative groups to further validate the findings.

5.1 Recommendations

Based on the successful outcomes of this study, the following recommendations are proposed to enhance business communication training within the Malaysian higher education sector:

- I. **Adopt Iterative Assessment:** Instructors ought to shift away from standard, singular presentation tasks, adopting instead a cyclical "record-reflect-resubmit" process that promotes a growth mindset and allows students to better master communication skills.
- II. **Integrate Supportive Technology:** To improve feedback efficiency, institutions should integrate AI-driven tools into their learning management systems to provide students with immediate, data-driven analysis of their performance.
- III. **Implement Professional Development:** It is essential for the department to provide professional training in structured debriefing techniques, as this empowers staff to transition from traditional evaluators into mentors who cultivate a psychologically safe learning environment.
- IV. **Standard Simulation Modules:** Curricula should be closely aligned with industry standards by designing simulation modules that focus on essential workplace skills, such as technical communication, professional ethics, and negotiation.

- V. Scale the Intervention: It is highly advisable to incorporate simulation-based strategies into the wider technical and vocational education (TVET) and polytechnic syllabus to better prepare students for the communication demands they will face in real-world settings.

5.2 Limitations of the Study

While the use of established constructs ensured instrument validity, this study did not include a formal pilot test due to time and curriculum constraints. Furthermore, the reliance on a one-group quasi-experimental design without a control group suggests that future studies should employ larger, comparative samples to further generalize these findings.

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