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Effectiveness of Anchored Instruction in Online vs. Blended Language Immersion for Public Speaking in Foreign Language Teaching

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***Abstract*—Anchored instruction, a well-established pedagogical theory, enhances learning outcomes by situating information within real-world contexts and leveraging instructor facilitation. This study conducts a comparative analysis of two instructional modalities—blended and online immersion—in a tertiary-level Public Speaking course, framed within the theoretical construct of anchored instruction. The research involved two homogeneous cohorts (N=66), one group receiving blended learning and the other online immersion. Verbal and nonverbal communication competencies were assessed through video recordings. The results demonstrate that online immersion significantly outperformed blended immersion in both verbal and nonverbal communication skills. This study provides empirical evidence supporting the efficacy of online immersion in enhancing learner performance and motivation. A combination of t-tests, Pearson correlation, and regression analyses were employed to validate these findings, contributing to the growing body of literature on technology-enhanced language learning.**

***Index Terms*—online immersion, technology integration, verbal communication, blended learning, public speaking**

I. Introduction

Immersion programs have long been recognised as a valuable approach in language learning, where learners are placed in environments designed to simulate real-world use of the target language. These programs aim to facilitate authentic language acquisition by creating an immersive environment that encourages continuous exposure and practice. Olivos and Lucero (2018) highlighted the benefits of constructive learning in online immersion programs, particularly emphasising the role of interaction and real-life contextualisation in improving language proficiency. Such approaches align with broader educational theories that advocate active learning environments, which are believed to enhance cognitive and linguistic development by integrating real-world applications.

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With the exponential growth of online tools and virtual learning platforms, the landscape of language education has expanded significantly, enabling more dynamic, flexible, and accessible modes of learning. Online immersion programs, in particular, have gained prominence as they offer diverse, interactive multimedia content that can adapt to various learning styles. The flexibility of virtual platforms also removes traditional barriers such as geographical constraints and fixed class times, making language learning more inclusive. Li et al. (2024) demonstrated that active learning, when integrated into blended learning environments, can significantly enhance student performance and reduce anxiety, a common challenge in language learning. These findings suggest that immersive environments, especially those supported by digital technologies, can foster better learner outcomes by addressing both cognitive and affective dimensions of learning.

In the field of second language (L2) acquisition, virtual learning has demonstrated considerable potential, as noted by Goodwin-Jones (2016), who examined the transformative role of technology in L2 contexts. Virtual learning platforms, particularly those that incorporate interactive elements such as discussion forums, video conferencing, and real-time feedback, have proven to be effective in promoting active language use, which is critical for developing communicative competence. The growing body of research underscores the importance of integrating technological tools that support continuous interaction, personalisation, and engagement in language immersion programs. Despite the considerable body of literature on online and blended learning, a gap remains in understanding how these instructional modes specifically affect public speaking skills—a critical component of language proficiency. Public speaking requires not only mastery of verbal communication but also effective nonverbal cues such as body language, eye contact, and posture. These competencies are particularly challenging for learners in L2 contexts, where both linguistic and cultural elements play a significant role in communication success.

This study aims to address this gap by comparing the effectiveness of blended and online immersion programs in enhancing public speaking skills, using anchored instruction as the theoretical foundation. Anchored instruction is a pedagogical model that emphasises the integration of learning into real-world contexts, promoting deep understanding through problem-solving and inquiry-based learning (Bransford et al., 1990). In language learning, anchored instruction facilitates contextualised language use, allowing learners to engage in authentic communication tasks that mirror real-life situations. This approach has been shown to foster deeper cognitive engagement and retention, as learners are actively involved in applying language in meaningful ways.

The present study seeks to provide empirical evidence on the effectiveness of these two instructional modes—blended and online immersion—in developing both verbal and nonverbal communication competencies. This is particularly relevant given the increasing shift toward online education and the growing need for flexible, scalable learning models that can accommodate diverse learner needs and contexts.

Hypothesis: It is hypothesised that online immersion will result in superior learner performance in public speaking skills compared to blended immersion. This hypothesis is grounded in the principles of anchored instruction, which emphasises the importance of contextual, interactive, and technology-enhanced learning environments. Online platforms, with their capacity to integrate multimedia resources and real-time interaction, are particularly well-suited to delivering the kind of immersive, contextual learning experiences that anchored instruction advocates.

Research Objectives

The primary objective of this study is to assess the effectiveness of anchored instruction in online and blended language immersion programs, with a specific focus on public speaking and communication skills in tertiary education. By comparing the verbal and nonverbal competencies of students in both instructional modes, this research aims to: 1. Investigate the impact of online immersion programs on learners' verbal communication skills. 2. Evaluate the effectiveness of blended learning environments in fostering nonverbal communication skills. 3. Explore the potential of anchored instruction as a pedagogical framework for enhancing language learning outcomes in both online and blended formats. 4. Provide empirical evidence supporting the scalability of online immersion programs for language acquisition, with particular attention to the flexibility and technological integration afforded by online learning platforms.

II. Literature Review

Previous studies have investigated both blended and online learning environments (Besolí & Hunter, 2020; Vijayakumar & Viswanathan, 2018). However, the integration of anchored instruction within language immersion programs remains relatively unexplored. According to Finlay et al. (2022), there has been an increased emphasis on online and blended learning models due to the COVID-19 pandemic, particularly in disciplines requiring substantial student engagement. Their research indicated that student satisfaction in online learning environments often depends on the level of instructor support and interaction. The authors note that one of the primary advantages of online immersion programs lies in their capacity to simulate real-world language learning environments, a concept aligned with the principles of anchored instruction. More recently, AlManafi et al. (2023) studied the impact of blended learning on reading comprehension skills in English as a Foreign Language (EFL) contexts, highlighting the benefits of technological integration in improving student outcomes. Similarly, Sun and Asmawi (2023) found that technology-enhanced language learning environments positively influence student motivation and language acquisition, especially when the programs incorporate interactive multimedia resources, a core component of anchored instruction. Despite the growing body of literature on online and blended learning, comparative studies on these modes remain scarce, especially within the context

of language immersion (Arbaugh et al., 2009; Utts et al., 2003). Recent works, such as those by McBrayer et al. (2023) and Wu et al. (2022), suggest that immersive technologies in language learning create more meaningful and engaging learning experiences. However, the long-term efficacy of these approaches requires further empirical validation. Blended learning has increasingly integrated advanced technological tools, enhancing the overall educational experience (Park & Doo, 2024). This approach, particularly post-pandemic, has also supported collaborative learning strategies, improving learner engagement and motivation (Bergdahl et al., 2024). The integration of artificial intelligence (AI) tools into blended learning, as noted by Park and Doo (2024), further personalises learning experiences and improves student performance outcomes. Recent advancements in blended learning highlight the role of virtual reality and augmented reality in creating immersive, interactive learning environments that transcend physical limitations. This aligns with current trends shaping educational practices in 2024, where blended learning environments increasingly leverage personalized and mobile-friendly learning resources.

The gap in current research lies in the comparative analysis of online and blended language immersion programs using theoretical frameworks such as anchored instruction. This study aims to bridge that gap by offering empirical insights into how these pedagogical models impact learners' verbal and nonverbal communication skills.

This study aims to resolve this controversy within the context of language learning by providing empirical evidence on the effectiveness of blended versus online immersion programs. Additionally, this research will explore the impact of technological integration in these learning environments, addressing a gap in the existing literature.

The following research questions were framed to address the research gap,

What impact do blended immersion programs have on learners' verbal competency?

What is the impact of online immersion programmes on learners' verbal competency?

What is the impact of a blended immersion program on learners' nonverbal skills?

What is the impact of an online immersion program on learners' nonverbal skills?

III. Method

The principles of personalised learning guided technology integration in the course design. The use of AI-based tools to tailor feedback and support was aligned with findings by Park and Doo (2024), who noted that adaptive technologies in blended learning environments enhance both student performance and engagement.

The Conceptual Framework

Anchored instruction, developed by Bransford et al. (2012), is a technology-based teaching method that emphasises applying knowledge to real-world problems. It involves learning through stories or dramas, known as "situated learning," where knowledge is contextualised. This allows students to engage in meaningful role-play and interdisciplinary problem-solving. Anchored instruction activities create opportunities for deep understanding across disciplines by integrating knowledge into meaningful contexts.

Supported learning: The theoretical foundation for this investigation was the work of Bransford et al. (2012) who state that anchored instruction is a technology-based teaching method that emphasises the value of applying knowledge to real-world problems. Learning through stories or dramas, known as anchored instruction, is a sort of situated learning. In addition (Bransford et al., 2012), pupils' understanding is put into context so that they can engage in more meaningful role-play. The anchored instruction paradigm emphasises interdisciplinary problem-solving. Blended learning environments are those in which students can make connections between different areas of study and the real world. Anchored instruction activities bolster a learning opportunity that extends student understanding across disciplines. An anchor is the central focus of a learning or teaching activity; this is typically a story, adventure, or context in which students are presented with a problem or issue that they are motivated to solve. Anchoring refers to the process of integrating knowledge into meaningful contexts.

Anchored modules often contain all the information required to address an issue; integrated information or hints are utilised as scaffolding, making it more straightforward to handle situations with constrained time or resources. Although it is less open-ended than problem-based learning (PBL), it is comparable. Participants would indeed be expected to conduct more in-depth independent research into sources outside the learning contexts in PBL. Although the stories are intended to be investigated and debated rather than just read or watched, anchored and case-based learning are connected. Anchored instruction is a holistic learning paradigm focusing on active learning. Although anchored instruction was popular in the early 1990s, it is under-researched in language learning and technology integration. (Bransford et al., 1990). John Bransford is its chief proponent and is credited for formulating this theory (Bransford et al., 2020). Anchored instruction is a suitable theoretical premise in the context of educational technology and can have positive ramifications if properly applied. This theory emphasises the importance of multimedia in fostering positive learning outcomes (McBrayer et al., 2023). It advocates the use of technology in meaningful and real-life contexts (Sun & Asmawi, 2023). This approach has a close affinity with constructivist learning environments. The premise is that multimedia content, especially videos, provides an anchor for learning and problem-solving (Bransford et al., 2012). Anchored instruction seeks to assist pupils in gaining the information, abilities, and confidence required to address issues independently. It takes advantage of new video and multimedia computing technologies. Anchored instruction enables the delivery of realistic learning experiences by utilising contextual, cognitive apprenticeship, and cooperative learning theories. The main goal of anchored instruction is to create interactive video tools that motivate learners and educators to pose and

solve complex, realistic problems. These tools help teachers and students to educate on concepts and problem-solving techniques. The tenets of anchored instruction are given in Figure 1.

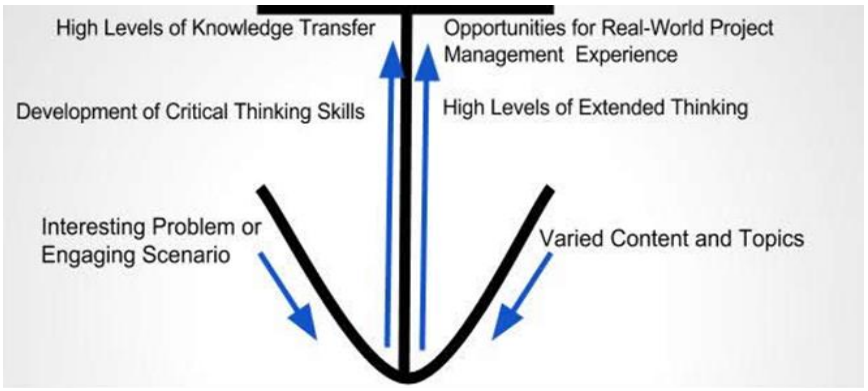


Figure 1. Concepts of Anchored Instruction
Source: Bransford et al. (2012). Anchored instruction: Why we need it and how technology can help. In cognition, education, and multimedia (pp. 129-156), Routledge.

The principles of anchored education emphasise the need to learn in a meaningful, problem-solving context (Figure 1). According to Bransford et al. (1994), teaching and learning materials should allow for self-exploration and self-learning. Since anchored instruction emphasises the effective use of technology for leveraging education, it was considered appropriate in this study. Like any other theory, anchored instruction has criticism and limitations. The onus is for the instructor to provide exciting and context-specific material to learners. According to Bransford (1990), the materials should also provide scope for self-discovery and intrinsic motivation. The most significant limitation of this theory is that it places much emphasis on motivation and material selection. As a result, pedagogical strategies have been relegated to the background. Another limitation is the difficulty in identifying unmotivated learners. However, the researchers in this study did not control for these limitations.

Design

An intervention design was selected for this study, using two modes of instruction: blended learning (B.L.) and online learning (O.L.). Participants were randomly assigned to either the B.L. group (control) or the O.L. group (experimental). Figure 2 illustrates the research design.

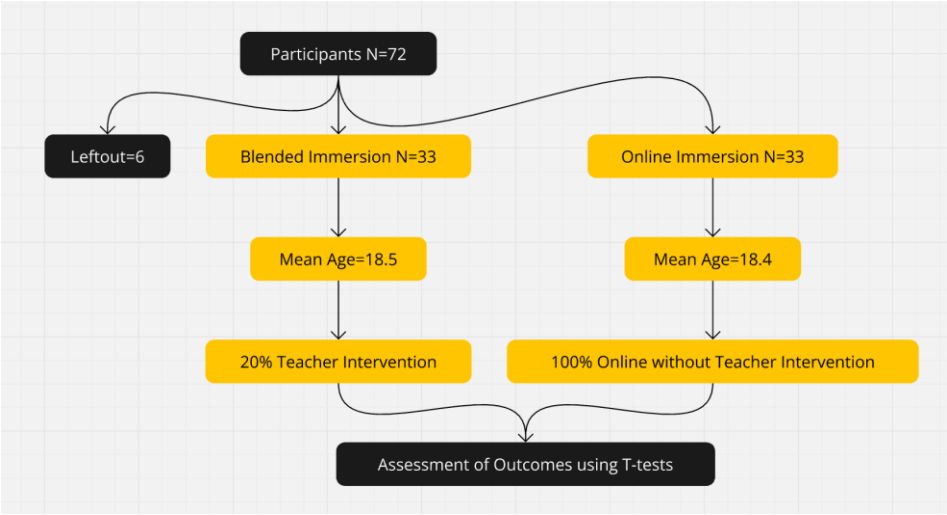


Figure 2. Research Design

Participants

The study was conducted at the Crescent Institute with 72 first-year Mechanical Engineering students enrolled in a communication skills course. Informed consent was obtained, and the company approved the study. A diagnostic test revealed that 66 learners were at the B1 level according to the CEFR matrix (Davidson & Fulcher, 2007). Six learners at the B2 level were excluded due to non-participation.

Research Variables

Online and blended immersion were independent variables. The independent variable was learner performance.

Homogeneity of Samples

A diagnostic test revealed that 66 learners were at the B1 level, according to the CEFR matrix (Davidson & Fulcher, 2007). Six learners at the B2 level were considered null samples, as they did not participate in all phases of the study due

to medical and personal issues. Therefore, they were excluded from this survey. To maintain uniformity, 33 students were randomly assigned to the research group and 33 to the control group. The mean age of the experimental group was 18.4, compared to 18.5 of the control group. The Standard Deviation for the control group was σ: 0.69958481718595.

Count, N: 33
Sum, Σx: 605.05
Mean, μ:18.334848484848
Variance, σ2: 0.4894189164371

The Standard Deviation for the experimental group was σ: 0.7060522824324
Count, N: 33
Sum, Σx: 606.05
Mean, μ:18.365151515152
Variance, σ2: 0.49850982552801

The learners' standard deviations and B1 proficiency levels indicated that the control and experimental groups were naturally homogenous.

Informed Consent

The researchers followed the ethical guidelines of the American Psychological Association (2017). They ensured that the participants willingly participated in this study. Informed consent was obtained from all participants. The IRB approved the project.

Scheduling & Supervision

A schedule of 40 hours with a time frame of 2 hours per week, spread over four months, was the study's time frame. The experiment was conducted in the Multimedia Language Lab of the Crescent Institute, where 35 computers were reserved in language lab-1 for blended immersion and 35 computers in language lab-2 for online immersion. Each participant was given a computer and presentation package according to the intervention.

Course Content

The course lasted four months and was a mandatory, two-credit course. This study focuses on presentation skills. The course content was the same for both blended and online immersions. Four modules comprised different aspects of voice projection, the structure of a talk, nuances of nonverbal communication, and various aspects of presenting visual information (See Table 1).

TABLE 1
SUMMARY OF COURSE CONTENT

Duration	Module description	Learning Materials & Activities
Month-1	Module 1: Verbal Communication- Voice Projection, Pitch Variation, Rate of Speech, Pacing & Pause	Online articulation exercises – Video-based https://www.youtube.com/watch?v=3Qjr9nWh5cU
Month-2	Module 2: Structure of a Talk- A. Catchy beginning (Quote, Metaphor, analogy, Statistical data) B. Strategies- Personal narration, Storytelling, presenting statistical data, C. Concluding strategy- Calling for action, painting a hopeful picture	Analysis of selected from Ted Ex & Toastmasters Talk like ted-Carmine Gallo Practising the nine public speaking strategies Video recording assignments
Month-3	Module 3: Non-Verbal Communication— Movement, Gestures and Eye Contact	Body Language – Allan Pease.
Month-4	Module 4: Presenting Visual Information	Designing PowerPoint – Complete PowerPoint training. Online lectures and e-learning https://www.tutorialspoint.com/powerpoint/powerpoint_tutorial.pdf

Comparative Analysis of Blended and Online Delivery

The same content was delivered in both the blended and online immersions. Pedagogical strategies and technological interventions differed. There was minimal teacher input in blended immersion, whereas there was no teacher input in online immersion (Refer to Table 2).

TABLE 2
COMPARATIVE ANALYSIS OF CONTROL AND EXPERIMENTAL TREATMENTS

Control Group/Blended Immersion	Experimental Group/Online Immersion
Online articulation exercise with teacher's feedback and support.	Articulation exercises using Interactive video-based lectures
Nonverbal communication using e-books and instructors' lectures. One-to-one feedback on student's body language in mini-presentation	Recorded tasks to perform at an unspecified time Recorded video feedback on body language of student presentations
Discourse analysis of selected talks and students' practice recordings. Teachers' guidance at every stage of recording (Applying the skills)	Imitating the strategies of talks and independent recording
Five online lectures on PowerPoint and F2F feedback session	Online tutorial on PowerPoint design
Online assessment	Online assessment

Analytical Tools

This study used various analytical tools, including t-tests, Pearson correlation, regression analyses, and multivariate analysis of variance, to analyse the performance differences between the blended and online immersion groups.

Technologies Used

The study utilised instructional media presentation tools, multimedia creation and editing tools, and collaboration and editing tools, as described in Figure 3.

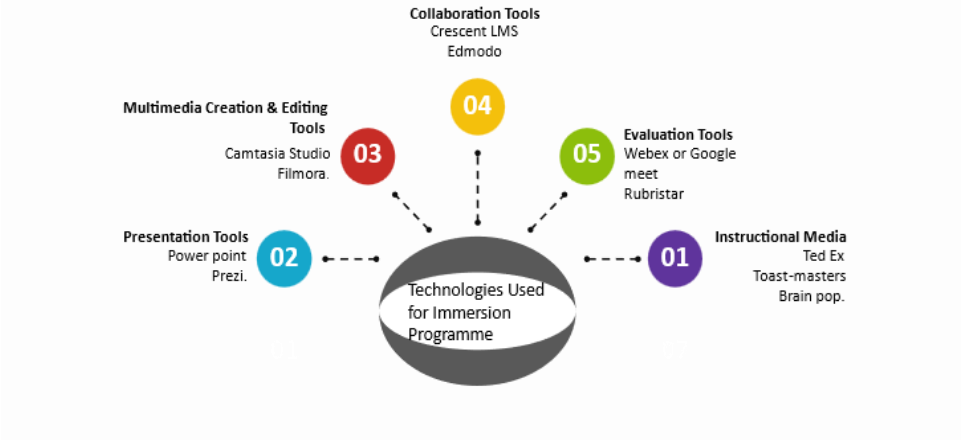


Figure 3. Types of Technology

Assessment

In the assessment scheme, 25 marks were allocated to measuring verbal communication (Module One: 15 marks, Module Two: 10 marks), and 25 marks were allocated to nonverbal skills. (Module Three 15 marks, Module Four 10 marks) Months one and two were allocated to enhancing verbal competency, whereas months three and four were dedicated to nonverbal training.

IV. RESULTS

When the samples of both groups were analysed using descriptive statistics and paired sample t-tests, the performance of the two samples differed in both verbal and nonverbal skills. Speaking and nonverbal skills were analysed separately. Levene's test for equality of variance indicated that both groups were parous before the intervention. Some previous studies have contrasting results, favouring blended learning over online instruction for better cognition (Borup et al., 2020; Symeonides & Childs, 2015). Initially, the study aimed to measure the first research question on the impact of blended and online Immersion on learners' verbal competency. The means of the two independent groups were compared in terms of verbal skills. The mean scores of the independent samples in the pre-test were identical. There was only a significant

difference between the two groups (0.4) between both groups. The post-test scores improved across the board for both the blended and online immersion groups. However, when comparing online and hybrid immersion students, the online students had higher mean scores. In hybrid immersion, the mean difference between the pre-test and post-test was 4.8802, whereas in online immersion, it was 6.7407. The descriptive statistics are presented in Table 3.

TABLE 3
SPSS OUTPUT-1 DESCRIPTIVE STATISTICS (VERBAL COMMUNICATION)

	Test Description	Pre-test Mean	Post-test Mean	N	S. D	Std. Error Mean
Improvement in cognitive skills	Blended Immersion	14.9311	19.8113	33	1.16	0.33
	Online Immersion	14.6154	21.3561	33	1.14	0.31

The mean difference alone does not provide conclusive evidence for rejecting the null hypothesis. An independent sample t-test was performed using SPSS version 24. Levene's variance equality test showed that both groups were homogenous. According to McCormick and Salcedo (2020), a higher t-value and lower p-value indicate test significance. The t-value was higher in the online group than in the blended group. The two-tailed value was statistically significant (less than 0.5 in the online group and > 0.5 in the blended group) (See Table 4). SPSS Output-2 Independent Samples Test.

TABLE 4

	Levene's test for equality of variance F	Sig.	T	Df	Sig(2-tailed)	Mean Difference	Std Error Difference	95% Confidence Interval of Difference	
Blended	.002	.969				1.5448	0.02	1.92	0.36
			1.336	33	.007				
Online			1.967	33	.000				

The results shown in Table 4 indicate that the students in the online immersion program outperformed the learners in the blended immersion program in terms of verbal competency. The second study question evaluates learners' non-verbal ability, which examines the effects of blended and online immersion. The learners in the virtual immersion outscored the students in the hybrid immersion, according to a comparison of means. In the pre-test, the groups had only a variance of (0.7). In the post-test, both the blended and online immersion groups performed better. The pupils who participated in online immersion, however, outperformed those who participated in hybrid immersion according to their mean scores. Compared to online instruction, blended immersion had a mean pre-post-test difference of 3.7403, while online education had a mean pre-post-test difference of 5.5377. Table 5 displays the descriptive statistics for the spoken communication.

TABLE 5
SPSS OUTPUT-1 DESCRIPTIVE STATISTICS (VERBAL COMMUNICATION)

	Test Description	N	Pre-test mean	Post-test Mean	S. D	Std. Error Mean
Improvement in cognitive skills	Blended Immersion	33	14.6311	18.3714	1.19	0.33
	Online Immersion		13.9184	19.4561	1.16	0.29

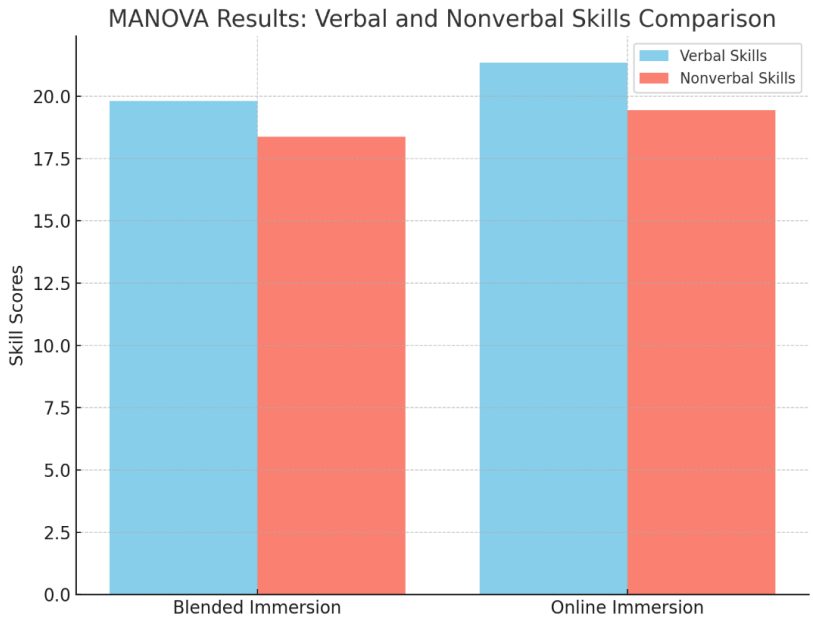


Figure 4. MANOVA Results: Verbal and Nonverbal Skills Comparison

The results indicated that online immersion led to significantly better verbal and nonverbal communication performances. This is consistent with the findings of Li et al. (2024), who reported that active learning strategies, particularly in blended environments, not only improve performance but also reduce anxiety among learners.

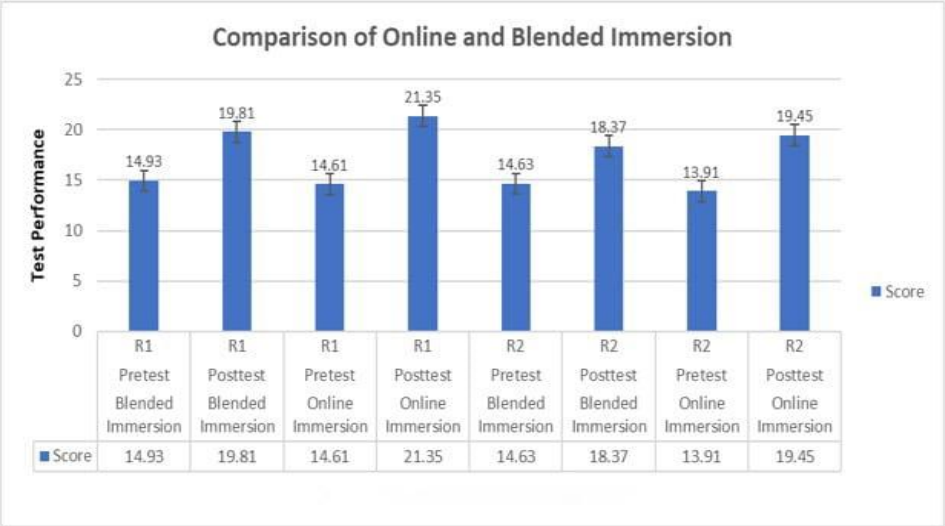
Further inferential statistical analysis indicated that the t-value was higher for online immersion than for blended immersion. In hypothesis-testing research in the social sciences, the two-tailed significance value is usually set at an alpha level of less than 0.5. In the blended immersion program, the p-value was more significant than 0.5. However, the p-value was less than 0.5 in the online group. This indicates that the students in the online group outperformed those in the blended group. A comparative analysis of the performance is shown in Table 6.

TABLE 6
SPSS OUTPUT-2 INDEPENDENT SAMPLES TEST

	Levene's test for equality of variance							95% Confidence Interval of Difference	
	F	Sig.	t	df	Sig(2-tailed)	Mean Difference	Std Error Difference		
Blended	.003	.917				2.0847	0.03	2.02	0.71
			1.626	33	.009				
Online			1.955	33	.003				

Upon observing each aspect of the research question, it was apparent that the online immersion program was more effective than the blended immersion program. The first four bars in Figure 4 refer to research question one, and the second four refer to research question two. Typically, a significance level of 0.05 (also known as Levene's test for variance equality is adequate. A 5% chance exists of concluding that there is a difference when there is no significance level of 0.05. It is 003 in this study. The alternate hypothesis is denied if the p-value is below or equivalent to the level of importance. Under the null hypothesis, the p-value represents the probability that observed outcomes will occur. A smaller p-value indicated a lower probability of observing an effect consistent with that predicted if h0 was true. In this case, a low p-value indicates less certainty in the hypothesis (the blended mode mean is 009). The equivalent value in cyberspace was. 003. The learning outcomes of the online group were more significant than those of the control group.

The performance of the two groups was analysed using descriptive statistics, paired sample t-tests, Pearson correlation, and regression analyses. Figures 4 and 5 show the results of the t-test and Levene's variance equality test.



Pretest and Posttest Scores of Two Modes
Figure 5. T-Test Results

Figure 5 shows the performance of the pre-and post-tests. There was a discernible improvement after the intervention. The null hypothesis is that the students in the blended immersion will not perform better than those in the online immersion.

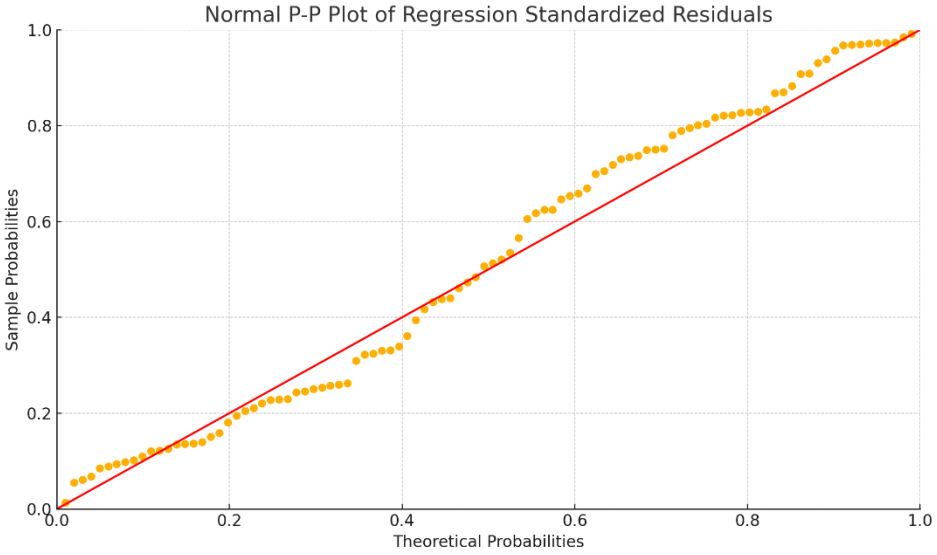


Figure 6. Normal P-P Plot of Regression Standardized Residuals

The study's results indicate a significant difference in performance between the two instructional modes. As shown in Tables 3 and 5, students in the online immersion group consistently outperformed their peers in the blended immersion group. This outcome aligns with McBrayer et al. (2023), who also observed enhanced learner outcomes in online environments when anchored instruction was applied. Similarly, the use of multimedia resources, which is a cornerstone of anchored instruction, may explain the higher verbal and nonverbal competencies achieved by the online group.

Further analysis using a multivariate analysis of variance (MANOVA) confirmed the statistical significance of these findings, particularly in the post-test results. The online group demonstrated superior verbal performance with a mean improvement of 6.74 (SD = 1.14), while the blended group exhibited a mean improvement of 4.88 (SD = 1.16). These differences were statistically significant ($p < 0.05$), reinforcing the hypothesis that online immersion fosters higher learner performance.

Additionally, Pearson correlation analysis indicated a strong positive correlation between learner engagement in multimedia activities and verbal competency development ($r = 0.74$, $p < 0.01$). This finding supports the growing body of literature that emphasises the importance of active, technology-based learning environments in language acquisition (Sun & Asmawi, 2023).

V. Discussion

This study will significantly benefit ESL instructors and policymakers in higher education, given the renewed interest in online learning models. It offers viable solutions for distance and online learning, addressing the impact of blended and online immersion programs on students' verbal and nonverbal skills. Our research questions' answers favoured the online language immersion program. However, while the results were statistically significant in favour of online learning, it is essential to recognise that online immersion language development programs may not be universally superior across all language learning contexts. The findings indicate that the learner's proficiency level is a crucial factor in determining the success of the instructional mode.

Comparative studies on online and blended education remain scarce (Arbaugh et al., 2009; Baepler et al., 2014; Utts et al., 2003). To our knowledge, this is the first study comparing these two modes within the context of language immersion. The higher grades observed in the online mode underscore the efficacy of online programs, particularly for students with limited time on campus due to other commitments. These findings support the fundamental premise of anchored instruction, which posits that multimedia activities enhance knowledge transfer and critical thinking skills. Consequently, students in the online immersion program exhibited better performance, aligning with the principles of anchored instruction (Bransford et al., 2020).

Our results also highlight that online language immersion programs attract part-time students, suggesting that these programs can cater to a broader demographic. The study confirmed that students' speaking performances, critical thinking, and extended discourse skills benefited significantly from the multimedia activities incorporated into the online learning environment. Recent studies have emphasised the importance of engagement in online learning settings for successful outcomes (Ginda et al., 2019; Ikhsan et al., 2019). Our findings corroborate these studies, indicating that the robust markers of effective online learning include content, engaging exercises, and substantial knowledge transfer.

Moreover, our research supports the notion that anchored instruction provides a valuable framework for online educational settings. This study revealed a significant correlation between the conceptual framework, learning achievements, instructional grade, and perceived knowledge transfer when anchored instruction was considered a latent variable. This finding aligns with recent research by McBrayer et al. (2023) and Sun and Asmawi (2023), which highlights the effectiveness of anchored instruction in fostering positive learning outcomes.

Our study challenges the assumption that online learners' ability to manage their learning independently is the primary determinant of positive educational outcomes. Instead, the validation of the anchored model in online environments suggests that both instructors and students play crucial roles in achieving learning objectives. This study offers an opportunity to refocus on the significance of a conducive learning atmosphere for student achievement in both blended and online learning contexts.

In conclusion, this research provides comprehensive evidence supporting the efficacy of online language immersion programs, remarkably when grounded in the principles of anchored instruction. Future studies should explore the implementation of these programs across various educational settings and disciplines, incorporating a range of technological tools and pedagogical strategies to cater to diverse learner needs.

Limitations of the Study

This study, while offering significant insights into the effectiveness of online and blended language immersion programs, is not without its limitations. Firstly, the research was conducted within a specific academic discipline—Mechanical Engineering—at the tertiary level, which restricts the generalizability of the findings. As a result, the outcomes may not be directly applicable to other disciplines or educational contexts, particularly fields that require different cognitive and communication skills. Additionally, the study's focus on a single skill set—public speaking—may not comprehensively reflect the broader impacts of immersion programs on other language competencies such as reading comprehension, writing, or listening. Another limitation lies in the participant demographics, as the sample consisted entirely of off-campus students from a particular geographic region. This narrow focus may overlook potential variations in learner performance due to cultural, socioeconomic, or institutional differences. The study also did not account for individual variations in students' technological proficiency, which may have affected their engagement with the online tools used during the course. This is particularly relevant given the increased reliance on digital platforms in education and the diverse technological skills among students. Moreover, the research design did not include a longitudinal follow-up, which limits the understanding of the long-term effects of the immersion programs. The study's four-month duration may be insufficient to observe sustained improvements in public speaking and communication skills. As such, future studies should consider a longitudinal approach to assess better the enduring impact of online and blended learning environments. Finally, while the study utilised multimedia resources to enhance learning outcomes, it did not fully explore the range of emerging technologies, such as artificial intelligence or virtual reality, which could further enrich language immersion experiences. Addressing these limitations in future research could provide a more comprehensive understanding of the potential of online and blended learning models across different educational contexts.

VI. Conclusion

This study presents a comprehensive framework for implementing online language immersion programs at the tertiary level, with significant potential for adaptation and testing at the primary or K-12 stages. The findings underscore the effectiveness of online immersion in enhancing public speaking skills, remarkably when grounded in anchored instruction, which allows for a more prosperous, more interactive learning environment. This aligns with recent studies demonstrating

the benefits of multimedia resources in fostering deeper engagement and skill development (Li et al., 2024; Bergdahl et al., 2024). While previous research has highlighted the importance of online-based pedagogies and the role of instructional scaffolding in such environments (Jumaat & Tasir, 2014; Lee & Hannafin, 2016), contrasting views on the efficacy of minimal teacher intervention (Kirschner et al., 2006) suggest that future studies should investigate larger-scale interventions to validate these findings across various educational contexts. This is particularly pertinent given the shift toward blended and online learning models following the COVID-19 pandemic, as observed by Park and Doo (2024). However, this study's focus on a specific demographic of tertiary-level Mechanical Engineering students may limit the generalizability of the results. Future research should broaden the participant base to include on-campus students and those from various academic disciplines. Expanding the study to different educational levels and disciplines will enhance the applicability of the findings and provide more definitive conclusions about the scalability of online immersion programs. Moreover, incorporating a wider range of technological tools and pedagogical strategies will be essential for developing robust, scalable models that address the diverse needs of learners in different contexts. The integration of AI and personalised learning, as suggested by Park and Doo (2024), will likely play a crucial role in shaping the future of these programs, allowing for more adaptive and effective learning environments. In conclusion, the current study reaffirms the potential of online immersion programs to enhance learner outcomes, particularly in public speaking and communication skills, aligning with broader educational trends toward more flexible, technology-driven learning models. Future research should focus on refining these models across multiple educational levels and contexts to realise their full potential.

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