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Exploring Metaverse-Blended Learning in an English Presentation Class: Student Perceptions

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Abstract

This study explores the potential of a metaverse platform, specifically, Gather Town, in fostering an environment conducive to the development of English presentation skills among college students. Over 15 weeks, the research was carried out in a university-level English presentation course, adopting a blended learning model that combined conventional classroom teaching with activities on the Gather Town platform. Twenty-four EFL students from the Dept. of English Literature were selected through purposive sampling to participate in this study. Employing a mixed-methods design, the study combined quantitative questionnaires and qualitative group interviews for data collection. Quantitative data analysis was performed using SPSS version 20, and thematic analysis was used for the qualitative data gathered from group interviews. The findings indicated strong student satisfaction with the course enhanced by metaverse elements. Students expressed an increased level of engagement and enjoyment within the innovative platform, citing a preference for two-dimensional communication and avatar-mediated interaction. Furthermore, the study identified learner characteristics—specifically Speaking Anxiety, Metaverse Interest, and English Language Proficiency—as significant predictors of presentation anxiety within a metaverse context.

Keywords: Metaverse, Gather Town, English speaking, blended learning, speaking anxiety

Introduction

The constant incorporation of groundbreaking technologies in higher education has perpetually transformed traditional pedagogical approaches. Metaverse represents one such innovation, a virtual shared space where physical reality seamlessly intersects with digital environments. While existing literature, including works by Berns et al., (2013) and Lee and Wu (2023), has begun to explore the impact of the metaverse in various educational contexts, there remains a notable gap in research specifically addressing its application in blended learning environments for second language education. This gap is particularly evident in the lack of comprehensive studies summarizing the integration of English language learning within the metaverse, as well as a scarcity of resources providing future educational guidance in this area (Tlili et al., 2022).

Meanwhile, blended learning, an approach that integrates conventional in-person classroom teaching with digital learning platforms, has been acknowledged for its adaptability and

effectiveness in meeting diverse educational needs (Halverson & Graham, 2019; Graham & Halverson, 2022). The metaverse, by its immersive and interactive nature, offers an innovative dimension to this blended approach, potentially enhancing the learning experience. However, the practicality and acceptance of such innovative methodologies in the context of second language acquisition remain largely unexplored.

This study aims to fill the research gap by examining the use of the Gather Town platform in English-speaking classes within higher education. Despite its growing adoption, there is limited comprehensive evaluation of Gather Town's effectiveness and its impact on student satisfaction and learning outcomes.

Literature Review

Concept of the Metaverse in Education

The metaverse, a shared, immersive virtual environment where users interact with digital objects and each other through avatars, has recently gained attention as a potentially transformative technology across various fields since its introduction in Neal Stephenson's 1992 science fiction novel, Snow Crash (Davis et al., 2009).

Virtual reality metaverses are defined by interactivity, embodiment, and persistence (Díaz et al., 2020; Kye et al., 2021). Interactivity allows users to communicate through avatars, fostering connection and community (Oh et al., 2023). Embodiment means avatars represent users' presence and interactions within the virtual environment (Blascovich, 2002). Persistence maintains aspects like position, conversations, and property over time, enabling continuity and data retrieval (Díaz et al., 2020). These characteristics create a platform where reality and virtuality merge, offering an experience that transcends traditional digital interaction.

The metaverse is influencing various industries, particularly gaming, where blockchain integration is becoming significant. Education is also exploring the metaverse's potential, as it offers new learning experiences and pedagogical methods. A systematic literature review by Sarıtaş and Topraklıkoğlu (2022) reveals that the metaverse affects immersive learning, collaborative educational platforms, student engagement, learning outcomes, and innovative teaching approaches.

In line with this, Onu et al. (2023) discuss the metaverse's potential for future teaching and learning, emphasizing its ability to provide immersive and engaging educational experiences. The study combines a literature review on integrating the metaverse into education and semi-structured interviews to gather insights on perceptions, enthusiasm, and concerns. While the metaverse enhances engagement, collaboration, and experiential learning, challenges related to technical infrastructure, digital literacy, and pedagogical design exist. The metaverse can transform teaching and learning, but significant work is needed to realize its potential and address challenges and limitations.

Blended Learning in Language Education: Integrating Traditional and Virtual Approaches

Blended learning, which integrates traditional classroom instruction with online components, has gained prominence in foreign language education (Gruba & Hinkelman, 2012). This pedagogical model offers learners the benefits of flexibility, personalization, and opportunities for enhanced learner engagement (Garrison & Kanuka, 2004).

Blended learning promotes the use of e-learning tools, providing students with exercises, self-assessment resources, and revision materials accessible on demand (Graham, 2006). This feature allows learners to progress at their own pace and reinforces their mastery of language concepts. Online components offer real-time feedback to students and instructors, enabling personalized support and progress tracking (Graham, 2006).

While earlier studies on blended learning highlighted challenges such as teachers' difficulties in adapting to the increased workload for both students and educators (Compton, 2009; Hughes, 2005), numerous successful implementations have demonstrated the potential of this approach to enhance language learning outcomes. These successful cases have reported higher student achievement levels, stimulated interactions among learners, and fostered peer collaboration (Bueno-Alastuey & López, 2014; Chen et al, 2022; Grgurović, 2011; Tosun, 2015; Yang, 2012, Yang & Kuo, 2023). By carefully designing and executing blended learning programs, educators can overcome initial obstacles and unlock the benefits of this innovative pedagogical model.

The integration of virtual worlds and metaverse technologies in blended learning has emerged as a promising avenue for immersive and authentic language learning experiences (Berns et al., 2013; Peterson, 2012). These virtual spaces enable simulated real-world interactions, promoting communicative competence and cultural awareness (Canto et al., 2013; Sadler & Dooly, 2016). Incorporating metaverse platforms in blended learning presents new opportunities and challenges for language educators and researchers (Lan, 2020), bridging the gap between physical and virtual classrooms and offering novel ways to engage learners (Wang et al., 2020). As technology advances, integrating metaverse platforms in blended learning holds great promise for revolutionizing foreign language education.

Speaking Anxiety in English Presentations and Speaking

Speaking anxiety, or communication apprehension, is a well-documented challenge faced by language learners, particularly in the context of public speaking and presentations (Horwitz et al., 1986). This affective factor can hinder language performance, learner engagement, and overall language proficiency (MacIntyre & Gardner, 1994). Numerous studies have investigated the sources, manifestations, and impacts of speaking anxiety in language learning (Cheng et al., 1999; Woodrow, 2006).

For example, Horwitz and colleagues (1986) created a scale called the Foreign Language Classroom Anxiety Scale (FLCAS) to assess the level of anxiety students experience specifically in language learning settings. The researchers discovered that the anxiety associated with learning a foreign language was unique and separate from other forms of anxiety and negatively correlated with language performance. Cheng and colleagues (1999) examined the various elements that contribute to anxiety in second language writing and explored how these factors relate to the anxiety experienced in speaking the target language. Using 433 Taiwanese English majors, they found that writing anxiety comprised low self-confidence, aversiveness, and fear of evaluation, and was moderately correlated with speaking anxiety.

Woodrow (2006) also explored the anxiety of second language learners in oral communication within English for Academic Purposes (EAP) classrooms. The study, involving 275 advanced English learners in Australia, used a mixed-methods approach with surveys and interviews. Results showed that the main sources of anxiety were interacting with native speakers, giving oral presentations, and performing in front of classmates. Additionally, anxiety significantly negatively affected oral performance.

Meanwhile, research has explored various strategies to alleviate speaking anxiety, including automatic speech recognition (ASR)-based websites, drama pedagogy, and virtual reality exposure therapy (Galante, 2018; Melchor-Couto, 2018). For instance, Galante (2018) found that drama pedagogy helped Brazilian EFL learners reduce speaking anxiety by creating a relaxed environment for language practice. Bashori et al. (2022) reported that Indonesian EFL students felt less anxious using ASR-based websites compared to traditional classrooms, showing that web-based learning with ASR technology can reduce FLSA and enhance vocabulary acquisition, especially for higher proficiency students.

In this vein, virtual environments and metaverse platforms have shown promise in reducing anxiety and providing low-stakes opportunities for practicing speaking skills (Chen, 2022). Chen (2022) studied the effects of technology-enhanced learning on public speaking anxiety (PSA) among EFL learners. Thirty-three university students were divided into lecture-based, mobile-assisted, and VR groups. After four weeks, all groups saw reduced PSA levels, but only the VR group showed statistically significant results, highlighting VR's potential in teaching public speaking.

Similarly, Ebadi and Ebadijalal (2020) studied the impact of Google Expeditions VR on Iranian EFL learners' willingness to communicate (WTC) and oral proficiency. They divided 20 upper-intermediate EFL learners into an experimental group using VR and a control group without VR. The results showed that Google Expeditions VR positively affected WTC and oral proficiency, enhancing engagement, language skills, and the overall learning experience. These findings suggest that the lack of visual cues and physical presence in virtual worlds can reduce anxiety and increase comfort in oral communication. The anonymity provided by virtual worlds creates a low-anxiety environment that encourages active participation in language learning. As language teachers and educators seek to create supportive and inclusive learning environments, addressing speaking anxiety remains a critical consideration.

The Potential of Metaverse-Enhanced Education for Language Teaching and Learning

The metaverse has shown promise in transforming language education through its immersive and interactive features. Recent research has investigated the integration of augmented reality (AR) and virtual reality (VR) technologies into language learning environments.

Godwin-Jones (2016) highlights AR applications in language education, demonstrating how digitally enhanced spaces can improve vocabulary learning and create engaging experiences. AR can annotate real-world objects with vocabulary words and translations, helping learners associate words with physical referents. However, the effective integration of AR into language education requires further research and development. Similarly, Chen and Yuan (2023) investigated VR's effectiveness in second-language vocabulary learning, focusing on Chinese as a second language. Their study revealed that international students found VR to enhance vocabulary learning experiences.

In addition, Chun et al. (2022), Lan (2020), and Kaplan-Rakowski & Gruber (2023) have demonstrated that immersive virtual reality (iVR) can increase student motivation, interest, and engagement in learning by creating captivating, interactive, and immersive experiences. Notably, high-immersion VR has been recognized as a positive approach to help students overcome language barriers and reduce anxiety when practicing public speaking in a foreign language.

Lee & Wu (2023) and Hwang et al. (2023) have provided valuable insights into the perceptions of metaverse-based language learning among trainee teachers and students. The studies reveal a generally positive view of VR as an effective tool for enhancing engagement, motivation, and understanding. However, they also highlight concerns regarding technical issues, costs, and the need for proper training and support. The findings suggest that integrating VR experiences with traditional teaching methods in a blended learning approach and utilizing VR for specific subjects or topics where it can provide unique learning experiences may be most beneficial. Additionally, the comparison of 2D and 3D metaverse platforms indicates that 3D environments are perceived as more useful for learning.

Moreover, Zheng et al. (2022) systematically reviewed 69 empirical studies on VR for language learning from 2010-2020, reporting benefits such as improved vocabulary acquisition, increased motivation and engagement, enhanced listening and speaking skills, and reduced anxiety. Despite drawbacks like high costs, the need for training, and technical issues, they emphasize VR's potential to innovate language teaching practices.

Recent research has focused on the use of metaverse platforms for second language learning and teaching. Lee's 2023 study highlights the pedagogical benefits of employing a narrative-rich, customizable metaverse for L2 learning, revealing a trend toward utilizing immersive and narrative-rich metaverse environments to enrich language learning experiences.

Furthermore, Lee, Jeon, and Choe (2024) investigate the effects of AI chatbots in 3D metaverse environments on pre-service English teachers' Global Englishes (GE) awareness. The study innovatively integrates AI chatbots using diverse English dialects with immersive 3D metaverse platforms. Quantitative results show that both presentation and AI chatbot tasks effectively increased GE awareness, with the AI chatbot task having a greater impact on English as a Lingua Franca (ELF) confidence and intentions. Qualitative findings highlight the benefits of AI chatbots in providing ELF interaction opportunities, authentic communication settings, and affective support.

Looking ahead, Wu et al. (2024) envision the future of language teaching and learning in the metaverse, proposing a conceptual framework for designing and implementing metaverse-based language learning environments. The framework emphasizes creating immersive, interactive, and socially situated learning experiences that promote language development and intercultural competence.

Research Gap

Despite the promise shown by metaverse platforms in enhancing language learning experiences, there is a need for further research to guide their effective integration and understand their long-term impacts. The application of these platforms in blended learning environments for second language education, particularly in English presentation courses over an entire semester, remains significantly under-researched.

To address this gap, this study proposes a semester-long implementation of Gather Town, a metaverse platform, in a university-level English presentation class. This approach is notable due

to its rarity and potential to provide immersive and interactive learning experiences that could significantly enhance learner engagement, social interaction, and learning outcomes. The findings will not only contribute to the academic literature by filling a crucial gap but will also offer practical, evidence-based guidelines for educators who are looking to harness the potential of metaverse platforms to revolutionize language education.

The research questions guiding this investigation include:

1. How do students perceive the use of Gather Town in a blended learning environment?
2. How do learner characteristics, such as English proficiency, speaking anxiety, and interest in metaverse technologies, influence presentation anxiety among language learners in a metaverse-based educational context?
3. What are the perceived advantages of utilizing Gather Town in English presentation classes?
4. What challenges are associated with the use of Gather Town in English presentation classes?

Method

Participants and Context of Study

A metaverse platform called Gather Town was introduced to an English presentation class at a university in Korea. Purposive sampling was employed to recruit participants directly relevant to the research questions and context, enabling the collection of rich and in-depth data.

An initial online survey administered at the onset of the academic term explored participant demographics and prior exposure. The study involved 24 students, with 21 females and 3 males, aged 22 to 27. Their self-assessed English proficiency levels ranged from low to upper intermediate.

Figures 1 and 2 show the gender ratio of participants and their self-assessed English proficiency levels, respectively. Twenty-four students were enrolled in English Presentation, a course offered by the English Department as a major in the School of Global Humanities.

Figure 1
Gender Ratio of Participants

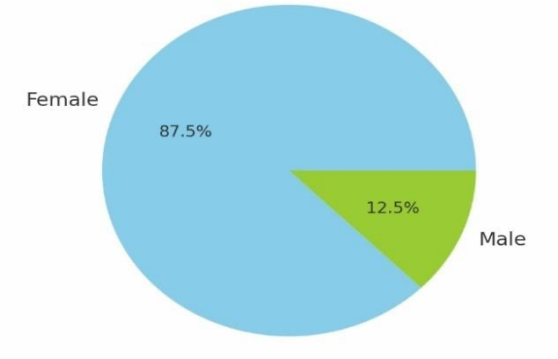
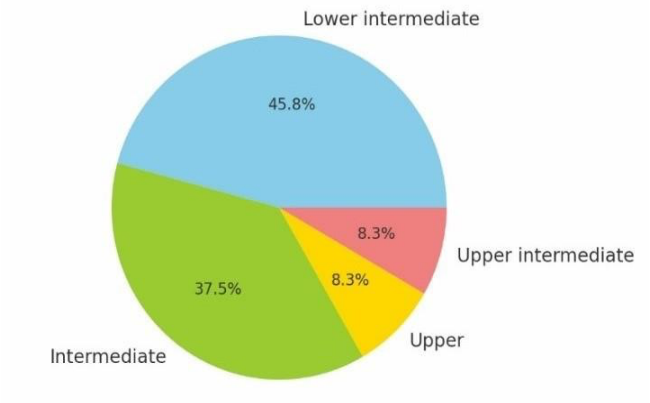


Figure 2
Self-assessment of English Proficiency



The survey results revealed that most enrolled students had minimal prior classroom engagement with the metaverse concept. However, there was a notable inclination among students to acquire knowledge about the metaverse, as shown in Table 1. Participants reported higher than average English speaking anxiety (above 2.5) and lower than average English speaking enjoyment (below 2.5) on a 5-point Likert scale. Nonetheless, their metaverse interest and digital literacy were generally high, at 3.42 and 3.75 respectively.

Table 1
Learner Backgrounds

Variable	Items	Mean	SD	Max	Min
Speaking anxiety	I usually feel intimidated by presenting in English.	3.75	1.22	5	1
Speaking enjoyment	I enjoy speaking English in front of people.	2.21	0.93	4	1
Metaverse interest	I've always been personally interested in metaverses.	3.42	1.06	5	1
Digital literacy	I'm good with smart devices (computers, smartphones, etc).	3.75	0.99	5	2
Prior experience	I have experience with metaverse classes in the past.	Yes: n=2		No: n=22	

Class Procedures

The blended learning class combined face-to-face learning with learning in the metaverse. The class was structured into two parts: traditional classroom learning focusing on foundational knowledge, and an interactive learning phase conducted in the computer lab using Gather Town, a metaverse tool.

In addition, one out of every four weeks during the 15-week semester, classes were held entirely online via Gather Town. Regarding online classes held within Gather Town, students

joined the online class from home during the regular school day by following a Gather Town invitation link posted on the school's LMS system.

A key feature of the class procedure was the utilization of the podium feature in Gather Town, which provided students with an opportunity to showcase their English presentations. This innovative platform offered a unique avenue for students to present their work in a virtual space, closely simulating a real-world presentation scenario.

Figure 3 shows an online lecture in progress, where the instructor employs screen sharing, and students are represented by avatars. In Figure 4, students are seen in a virtual small group room within Gather Town, interacting through their avatars. This setup allows students to practice newly learned material by engaging in an interactive, avatar-mediated environment, enhancing the collaborative learning experience.

Figure 3

Lecturing in Gather Town

Figure 4

Group Activity in Gather Town

Data Collection

The research adopted a mixed-methods design to comprehensively understand students' perceptions of using Gather Town in an educational setting. A background questionnaire

administered at the start of the semester used a 5-point Likert scale to evaluate students' English language proficiency level, speaking anxiety, speaking enjoyment, interest in the metaverse, and digital literacy. Speaking anxiety, speaking enjoyment, interest in the metaverse, and digital literacy were measured using a 5-point Likert scale, with statements such as "I usually feel intimidated by presenting in English" and "I enjoy speaking English in front of people."

Quantitative data were collected through structured questionnaire surveys, allowing students to objectively rate their experiences. An 18-item Likert scale questionnaire, based on previous studies (McCroskey, 2009; Hwang, 2022), was designed to investigate students' learning experiences and perceptions in Metaverse-based blended learning. The survey variables aligned with the research questions, assessing interaction, enjoyment, collective engagement, English presentation anxiety reduction, learning benefits, technology acceptance, and overall learner satisfaction.

Qualitative data were collected through semi-structured group interviews conducted in Korean, which provided a conversational platform for students to discuss and reflect on their experiences with Gather Town in their native language. The group interviews, conducted at the end of the semester, took place four times with 4-5 students per group in a small conference room at the school. Each 50-minute interview was audio-recorded for transcription and analysis. Open-ended questions in Korean explored students' perceptions, experiences, and insights related to using Gather Town. Examples of interview questions include:

What was your overall experience using Gather Town in your English presentation class?

How did Gather Town impact your interaction with your peers and the professor during the course?

In what ways did Gather Town affect your enjoyment and engagement in the learning activities?

How did using Gather Town influence your English presentation anxiety compared to traditional classroom settings?

What benefits or challenges did you encounter while using Gather Town for learning purposes?

Data Analysis

SPSS version 20.0 was utilized to analyze the quantitative survey data. To provide a summary of the participants' responses, descriptive statistics such as means and standard deviations were computed for each variable. The internal consistency reliability of the survey items was assessed using Cronbach's alpha. Although some variables were measured by only two items, potentially affecting reliability assessment using Cronbach's alpha, the high alpha values (0.91 to 0.99) suggest that the items were highly correlated, providing a valid measure of internal consistency for these variables, as demonstrated in Table 2.

In addition to descriptive statistics, a multiple regression analysis was performed to examine the relationships between learner background variables (English proficiency, speaking anxiety, speaking enjoyment, metaverse interest, and digital literacy) and English presentation anxiety in the metaverse-blended learning environment. The assumptions of multiple regression, including linearity and multi-collinearity, were checked before conducting the analysis.

Table 2

Internal Reliability

Cronbach's Alpha	Variable	Items
0.95	Interaction	Interacting with the professor in the metaverse was seamless.
		Interacting with peers in the metaverse was seamless.
		Using the metaverse, I could view and interact with media materials.
0.97	Enjoyment	Participating in a class using the metaverse was both interesting and fun for me.
		Roleplaying avatars in the Metaverse was fun.
		I am excited about the dialogue and feedback in the metaverse.
0.92	Collective engagement	In a class utilizing the metaverse, I experience a sense of freedom in communicating with my peers.
		I believe that utilizing the metaverse allows for closer relationships and socialization among class members.
0.99	English presentation anxiety reduction	The burden of English presentation in the metaverse has become somewhat less.
		The metaverse helped reduce my anxiety about presenting in person.
0.98	Learning benefit	Classes using the metaverse give more results than expected.
		I think the lessons utilizing the metaverse helped me achieve my learning goals.
		I think the class went smoothly in the metaverse space.
0.91	Technology acceptance	Using Gather Town's features isn't difficult.
		I'm familiar with Gather Town's features and technology.
		It's not hard to join a class through Gather Town.
0.99	Overall learner satisfaction	I'm generally satisfied with the class using the metaverse.
		I would be willing to participate in another class utilizing the metaverse.
		If you have a class that utilizes Metaverse, I would highly recommend it to my friends.

The qualitative data from the group interviews were analyzed using thematic analysis, adhering to Braun and Clarke's (2021) six-phase process: data familiarization, initial code generation, theme search, theme review, theme definition and naming, and report production. The interview recordings were transcribed word-for-word, and the transcripts were thoroughly reviewed to comprehend the data. Meaningful data segments relevant to the research questions were systematically identified and labeled to generate initial codes. These codes were then collated and organized into potential themes, which were reviewed and refined for coherence and distinctiveness.

The coding process combined deductive and inductive approaches, with the former guided by the research questions and the latter allowing for the emergence of new themes from participants' experiences. Constant comparison was used throughout the thematic analysis to identify patterns, similarities, and differences across interviews.

Findings and Discussions

Student Perceptions of the Use of the Metaverse in Blended Learning Environments

The questionnaire results are categorized into four dimensions: social aspects (Interaction, Collective engagement), affective aspects (Enjoyment, English presentation anxiety reduction, Overall learner satisfaction), cognitive pedagogical aspects (Learning benefit), and technology acceptance of using the Metaverse (Table 3).

Table 3

Means and Standard Deviations for Each Factor

Variable	Items	Mean	SD
Interaction M = 3.85	Interacting with professors in the metaverse was seamless.	3.67	1.24
	Interacting with peers in the metaverse was seamless.	3.75	0.99
	Through the metaverse, I was able to view and interact with media materials.	4.12	0.80
Enjoyment M = 3.58	Classes using Gather Town were focused and fun.	3.62	1.24
	I enjoyed the avatar activities in the metaverse.	3.62	1.34
	I am excited about conversations in the metaverse.	3.5	1.14
Collective engagement M = 3.44	I experience a sense of freedom in communicating with my peers.	3.63	1.24
	Utilizing the metaverse allows for closer social connections among class members.	3.25	1.42
English presentation anxiety reduction M = 3.75	The burden of English presentation in the metaverse has become somewhat less.	3.75	1.32
	The metaverse helped reduce my anxiety about presenting in person.	3.75	1.32
Technology acceptance M = 3.62	Using Gather Town's features isn't difficult.	3.87	1.39
	I'm familiar with Gather Town's features and technology.	3.25	1.22
	It's not hard to join a class through Gather Town.	3.75	1.32
Learning benefit M = 3.56	Classes using the metaverse give more results than expected.	3.62	1.24
	I think the class went smoothly in the metaverse space.	3.5	1.25
Overall learner satisfaction M = 3.71	I'm generally satisfied with metaverse-blended language learning.	3.75	1.22
	I would be willing to participate in another class utilizing the metaverse.	3.75	1.22
	If you have a class that utilizes Metaverse, I would highly recommend it to my friends and colleagues.	3.62	1.24

As shown in Table 3, high scores (M=3.85) in seamless interaction reflect the effectiveness of metaverse platforms like Gather Town in enhancing student-teacher and peer-to-peer communication, suggesting the importance of such platforms in virtual learning environments. And the enjoyment factor (M=3.58) indicates that students find learning in the metaverse engaging and fun, consistent with Fitria's (2021) findings. Fitria's study, which implemented Gather Town during the pandemic, found that the platform's graphics resemble those in the Harvest Moon game, featuring customizable avatars that boost intrinsic motivation and engagement. This highlights the importance of incorporating gamification elements in digital learning environments.

The scores for collective engagement (M=3.44) emphasize the role of virtual environments in creating a sense of community and shared experience among students. This aspect is particularly crucial in distance learning settings, where the lack of physical presence can lead to feelings of isolation. The metaverse serves as a vital tool in bridging this gap, promoting a sense of belonging and collaborative learning.

The observed decrease in English presentation anxiety (M=3.75) highlights the potential of metaverse platforms to create less intimidating and more supportive environments for language learning and presentation practice. This alleviation of anxiety is crucial in second language acquisition, where fear of public speaking can hinder language development. The findings align with previous research by Damio and Ibrahim (2019), which found that virtual environments, particularly metaverse platforms like Gather Town, contribute to lower anxiety levels and enhanced engagement in the language learning process.

The technology acceptance dimension, with an average ease of use score of 3.62, highlights the importance of user-friendly and intuitive educational technology designs for promoting positive student engagement. The ease of navigating and utilizing metaverse features directly correlates with students' willingness to engage with the platform and the learning process. This result partially supports Classe et al.'s (2023) findings, which investigate student perceptions and acceptance of metaverses in blended learning contexts, confirming that ease of use and perceived usefulness are key factors in students' acceptance and effective engagement with metaverse platforms in educational settings.

The perception of learning benefits, with an average score of 3.56, indicates students' recognition of the metaverse's significant role in enhancing their educational experience, serving as an indicator of its effectiveness in meeting learning objectives and establishing it as an influential tool in emerging technology. This observation partially aligns with Buckingham and Alpaslan's (2017) findings, which reported improved oral performance over four months due to factors such as task rehearsal opportunities and immediate teacher feedback. The present study incorporated similar elements within Gather Town, including practice of expressions and skills relevant to English presentations through group activities and prompt teacher feedback during individual presentations.

Finally, high learner satisfaction scores (M = 3.71) suggest that students are receptive to innovative technologies in blended learning, encouraging language educators to explore and integrate new digital tools in their teaching methods.

Predictors of English Presentation Anxiety in a Metaverse-Blended Setting

A multiple regression analysis was performed to determine the impact of various learner background variables on students' English presentation anxiety. The findings are presented in Table 4.

Table 4

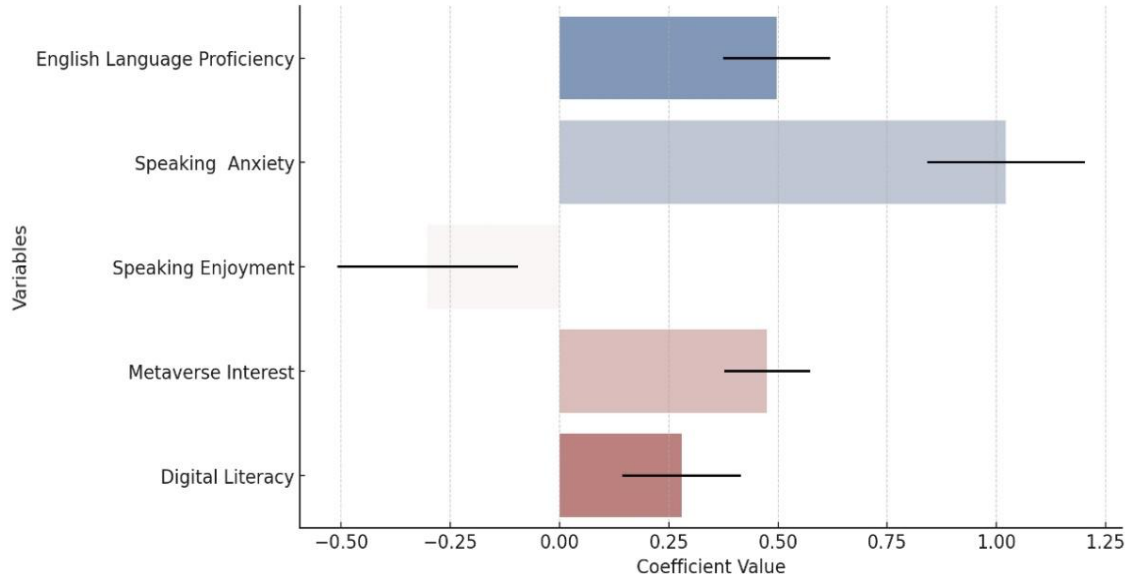
Means Regression Analysis of Learner Backgrounds and English Presentation Anxiety

Variable	Coefficient (B)	P-value	R^2	F-value
Model Summary			0.931	48.50
English Proficiency	0.4971	0.001*		
Speaking Anxiety	1.0223	0.000*		
Speaking Enjoyment	-0.3021	0.162		
Metaverse Interest	0.4745	0.000*		
Digital Literacy	0.2791	0.056		

*$P < .05$

Figure 5

Visualizing Regression Results



The regression analysis reveals that Speaking Anxiety, Metaverse Interest, and English Language Proficiency significantly predict English Presentation Anxiety in a metaverse setting ($p < .05$). The model explains 93.1% of the variance in English Presentation Anxiety, indicating a strong fit (R^2=0.931, F=48.5, $p< .05$), confirming the model's explanatory power and overall statistical significance.

Speaking Anxiety's positive coefficient implies that students with higher anxiety levels find metaverse-based presentations less stressful ($p < .05$). Similarly, higher Metaverse Interest is associated with reduced presentation anxiety, indicating the potential of metaverse environments to engage students effectively ($p < .05$). English Language Proficiency emerges as a crucial factor,

with its positive coefficient indicating that higher proficiency correlates with lower anxiety in presenting in English in the metaverse ($p < .05$). This result highlights the importance of language support and tailored approaches for students with different proficiency levels. Educationally, integrating metaverse technologies in language learning could be particularly beneficial for students with lower proficiency, as it provides a less intimidating environment for practicing and improving their language skills (Kaplan-Rakowski & Gruber, 2023).

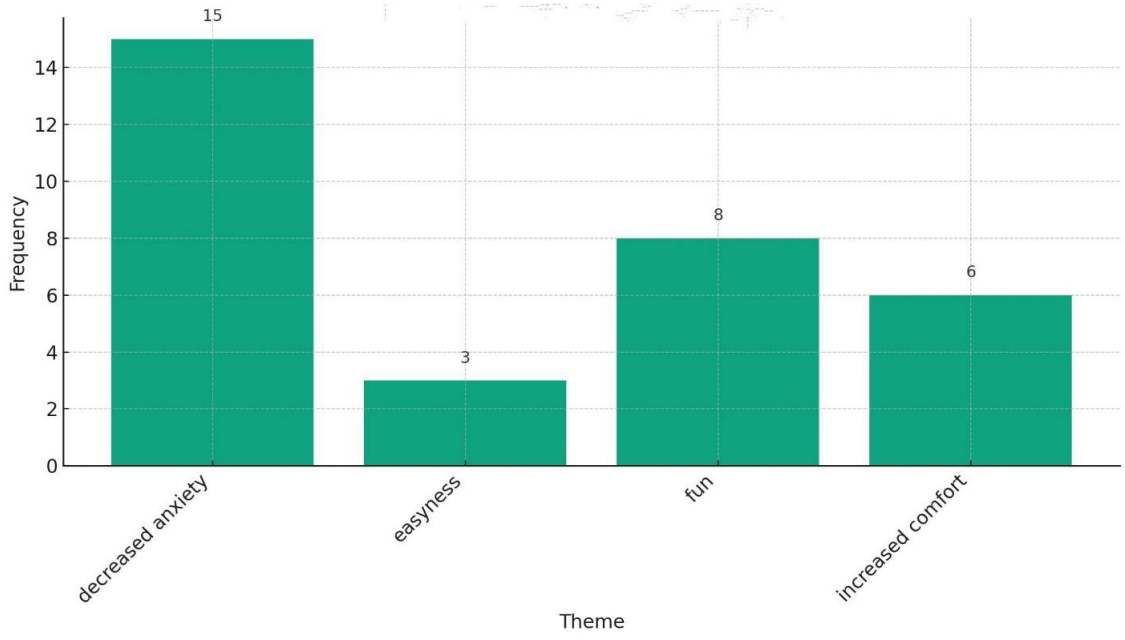
However, Speaking Enjoyment and Digital Literacy do not show a significant impact, highlighting the need for further exploration into how these factors interact with metaverse-enhanced language learning environments. This may suggest incorporating metaverse technologies into language learning activities could be beneficial for students with higher speaking anxiety, and engaging students in the metaverse could be a strategic approach to reduce presentation-related stress.

Perceived Advantages and Challenges of Gather Town in Blended Learning

The participants' insights were categorized into two distinct groups: perceived strengths (Figure 6) and perceived obstacles (Figure 7) of employing the Metaverse in the language classroom. These responses, translated from Korean, specifically focused on the Metaverse's use, excluding comments related to teaching methods or pedagogical strategies.

Figure 6

Perceived Strengths of Gather Town



In Figure 6, the main theme identified was decreased anxiety in presentations, as evidenced by 15 students. They shared personal experiences of reduced tension and burden in face-to-face presentations, with comments like:

"Within Gather Town, I was able to reduce the tension and burden when giving a face-to-face presentation." (Student A)

"I think not having to present in person took the pressure off and allowed me to speak more confidently." (Student B)

"I felt a little more at ease because there was less pressure on the presentation." (Student C)

The second theme, fun and engagement in learning activities, was noted by eight participants. Their experiences in Gather Town were described as enjoyable and novel, as seen in the following remarks:

"I was able to reduce the pressure of presenting in English, and I found it very exotic and interesting to teach a class through the metaverse. I am so grateful to have experienced the Metaverse through this class." (Student D)

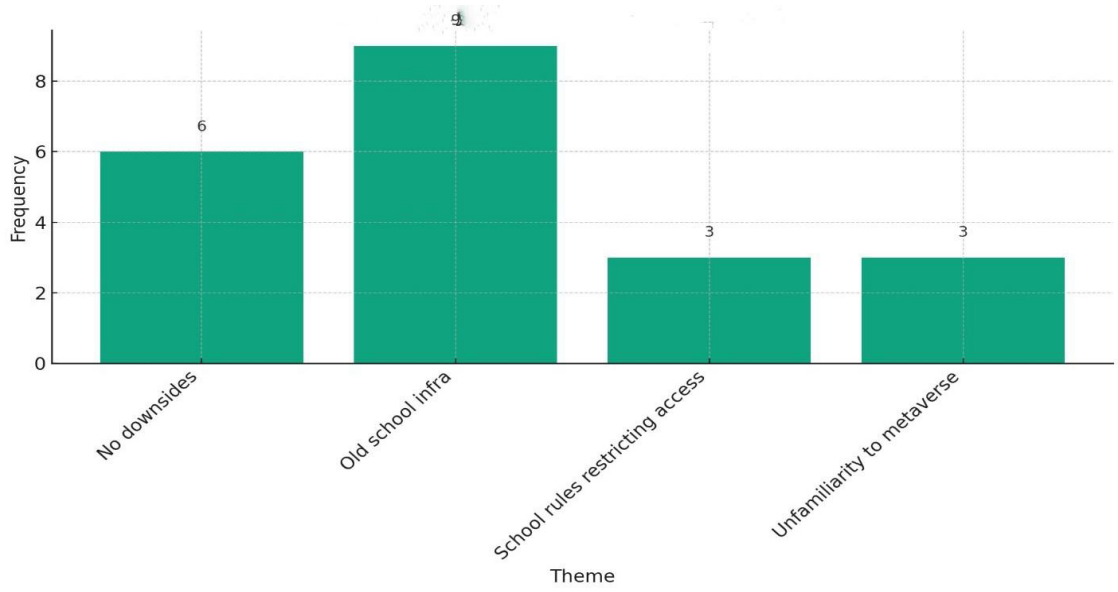
"For me, classroom activities in the Metaverse were new and fun, like role-playing in a game." (Student E)

"I found it interesting to do learning activities in the metaverse." (Student F)

Finally, increased comfort with using Gather Town was mentioned by six students, noting initial challenges with navigation but eventual ease and enjoyment in practicing English presentations in an informal setting ("At first, I found Gather Town a bit difficult to navigate, but it got easier and easier, and it was nice to practice English presentation in a casual way.").

Figure 7

Perceived Challenges of Gather Town



On the other hand, the obstacles to using Gather Town were less frequent than the benefits of using Gather Town. Limited Internet access and outdated computer facilities in school computer labs were the most frequent themes (n=9), and there were no specific downsides to

Gather Town itself (n=6). In the group interviews, some students mentioned the school's policy of blocking external Internet sites (n=3) and unfamiliarity with the metaverse (n=3).

Specifically, concerns were raised about the inadequacy of school facilities in supporting advanced metaverse technology. Students highlighted issues with outdated computer labs, noting their inconvenience for metaverse activities ("The computer lab where we did our metaverse activities was outdated and inconvenient."). Comparisons were drawn between home access and school access of Gather Town, with observations that school computers often experienced technical difficulties, hindering the effective use of the metaverse platform ("Unlike accessing Gather Town from home, the school computers sometimes didn't work well."). These insights point to the challenges faced in integrating cutting-edge digital tools into educational settings hindered by outdated technological infrastructure.

Another issue involved restricted access to Gather Town due to school security policies, with a student remarking, "The classroom computers blocked the Metaverse site. It was often bothering." This reflects the institutional barriers to adopting new technologies. Additionally, while most students found Metaverse activities engaging, there were contrasting preferences, as some expressed discomfort with virtual learning environments, stating, "I don't feel comfortable teaching in a Metaverse," and "I'd rather be face-to-face in the classroom." These insights underscore the complexity of integrating innovative technology into traditional educational settings.

Synthesis of the Research Findings

This mixed-methods study examined the use of the Gather Town metaverse platform in blended learning for English presentation classes. Quantitative findings showed high student satisfaction, engagement, and reduced presentation anxiety. Qualitative results from group interviews highlighted decreased anxiety, increased fun and engagement, and technical challenges.

The regression analysis revealed that speaking anxiety, metaverse interest, and English language proficiency significantly predict English presentation anxiety in the metaverse-blended learning setting. These findings suggest that individual learner characteristics crucially shape students' experiences and outcomes in such environments.

Furthermore, the qualitative findings from the group interviews provided deeper insights into students' experiences with Gather Town. A key finding is the significant reduction in English presentation anxiety among students when using Gather Town, highlighting the potential of metaverse platforms to create a more comfortable and less intimidating learning environment for language learners. This finding aligns with the quantitative results and previous research on virtual reality and language anxiety (Melchor-Couto, 2018; Reinders & Wattana, 2014). However, the anxiety reduction may not be solely attributed to Gather Town itself but also the blended learning approach and supportive learning environment created by the instructor. While Gather Town may contribute to reducing anxiety, it is not a panacea for all language learning challenges.

The theme of increased fun and engagement highlights how Gather Town's interactive and immersive qualities could boost student motivation and involvement in learning activities. This finding aligns with prior studies on virtual worlds and gamification in education (Peterson, 2012; Canto et al., 2013). However, engagement can differ among learners, and educators must design activities that accommodate diverse learning preferences.

The theme of technical challenges underscores the need to tackle infrastructure and accessibility issues in metaverse-based learning. Challenges such as limited internet access and

outdated computers underscore the need for educational institutions to enhance their technological support. Moreover, ensuring platform accessibility and user-friendliness is crucial for effective participation in metaverse-blended learning.

The integration of quantitative and qualitative findings suggests that using Gather Town in blended learning environments can enhance language learning experiences and outcomes. The convergence of results highlights the platform's ability to create a supportive and engaging learning environment that reduces language anxiety and fosters active participation. However, the findings also reveal the importance of addressing technical challenges and ensuring adequate infrastructure and support for successful implementation.

While this study specifically examined Gather Town in a blended learning environment for English presentation classes, it is crucial to explore how these findings might extend to other metaverse platforms and technologies, broadening the research's applicability and relevance across different virtual learning environments.

Compared to other well-known metaverse platforms such as Second Life, OpenSim, and VirBELA, Gather Town is noted for its straightforwardness, ease of access, and emphasis on social interaction. Its 2D interface and user-friendly controls make it more accessible to those less accustomed to virtual spaces, while it still delivers an immersive and interactive experience. In contrast, platforms like Second Life and OpenSim provide more complex 3D environments with extensive customization capabilities, potentially better suited for advanced users or specific educational goals (Warburton, 2009; Hew & Cheung, 2010). Unlike the broad, open-ended virtual experiences offered by Second Life and OpenSim, Gather Town is specifically designed as a streamlined virtual office solution for remote teams.

Moreover, Gather Town’s emphasis on social interaction and collaboration benefits language learning and communication skills development. Pettit and Kukulska-Hulme (2011) highlight that the social aspects of platforms like Gather Town create meaningful contexts for communicative practice, essential for language acquisition. Features such as spatial audio and proximity-based chat support fluid conversations and group discussions, encouraging language practice and refining presentation abilities.

Conclusion

This study explored the use of the Gather Town metaverse platform in blended learning for English presentation classes, focusing on student perceptions and satisfaction. Survey results showed positive impacts on interaction, enjoyment, engagement, and overall satisfaction, while reducing presentation anxiety. Regression analysis identified speaking anxiety, metaverse interest, and English proficiency as significant predictors of presentation anxiety. Qualitative findings revealed that students felt less anxious and more comfortable presenting in the virtual environment, suggesting that metaverse platforms can create a supportive, low-stress learning atmosphere. However, technical challenges such as internet connectivity issues, computer quality, and school rules limiting access to Gather Town were also highlighted.

Overall, these findings have important implications for language educators and policymakers. For teachers, the results highlight the benefits of using metaverse platforms like Gather Town to enhance speaking and presentation skills. These platforms offer opportunities for authentic practice, collaborative learning, and personalized feedback. However, educators must also address challenges such as technical limitations, accessibility issues, and the need for effective pedagogical strategies to support diverse learners.

To integrate metaverse platforms into language curricula effectively, teachers need professional development and resources to develop technical and pedagogical skills. This includes training on using metaverse platforms, designing effective learning activities, and facilitating student engagement in virtual environments. Language education programs should prioritize supporting teachers with the necessary resources to adopt metaverse-based teaching practices successfully.

For policymakers, this study highlights the need to invest in technology infrastructure and resources to support metaverse integration in language education. Investments should include reliable internet connectivity, modern computer equipment, and technical support in schools and universities. Policymakers should also recognize the potential of metaverse platforms to enhance educational equity and accessibility, providing immersive learning opportunities to students regardless of location or socioeconomic status. This can help bridge the digital divide and promote more inclusive language learning.

However, educational authorities must be aware of the challenges and risks of metaverse-based education, such as data privacy, cybersecurity, and the need for appropriate regulations to ensure student safety in virtual environments. As metaverse use in education grows, stakeholders must collaborate with educators, researchers, and technology providers to create policies and standards for the responsible and effective use of these technologies in language learning.

Despite its valuable implications, this study has limitations. The small sample size from a single English presentation class limits the findings' generalizability. Unlike short-term studies, this research used metaverse-blended learning for an entire semester, but one term may not fully capture long-term impacts on learning outcomes.

Future research should explore metaverse-based learning effects on language proficiency and learner outcomes with larger, diverse samples and longer observation periods to understand long-term correlations between engagement, motivation, and performance. Customizing the Gather Town environment and comparing it with other 3D immersive metaverses could reveal their potential to enhance social interaction, learner engagement, and learning outcomes.

Finally, the findings advocate for incorporating language teaching strategies, especially for students with varying English proficiency levels, to foster a more inclusive and effective learning environment. Tailoring metaverse-based activities to address these diverse needs can enhance language learning and reduce presentation-related anxiety, thereby enriching the overall learning experience. The development of best practices and guidelines for designing and implementing metaverse-based language learning activities is crucial to ensure pedagogical effectiveness and learner success.

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