



More Than a Meeting Tool: Leveraging AI-Enhanced Zoom as a Learning Space for Virtual Student Mobility and Student Engagement in Content-Based Global Courses

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Abstract

This study explores how an AI-enhanced Zoom environment was strategically designed and utilised to support a Virtual Student Mobility (VSM) programme between Meiji Gakuin University (Japan) and the University of Hawai'i at Mānoa (U.S.). The programme enabled undergraduate students to remotely attend regular courses taught in English on themes such as ethnic studies and cultural diversity. While not designed as language courses, the programme provided opportunities for incidental English use and intercultural engagement through sustained participation in global coursework. Data were collected through end-of-semester surveys across five courses during the 2023–2024 academic year.

Findings indicated high satisfaction with course design and instruction, positive engagement with UHM faculty and students, and strong recognition of the programme as a legitimate form of “virtual study abroad.” At the same time, students reported challenges with the fast pace of English and unfamiliar academic norms, but many described these as contributing to personal growth, confidence, and intercultural understanding. Key to these outcomes was the intentional use of Zoom not merely as a video-conferencing tool but as a learning space enriched with AI-supported features such as captions, translation, summaries, and recordings, which collectively enhanced accessibility, comprehension, and learner autonomy. The study argues that AI-enhanced Zoom can function as an inclusive and pedagogically meaningful space for virtual mobility, broadening access to international education for students who face barriers to physical study mobility.

Keywords: Virtual Student Mobility, AI-Enhanced Zoom, Incidental Learning, International Collaboration, Content-Based Global Education

1. Introduction

In recent years, the expansion of Virtual Student Mobility (VSM) has opened new pathways for international education, enabling students to access global classrooms without the logistical and financial challenges of studying abroad. VSM is generally understood as a structured form of international learning in which students participate in courses offered by overseas partner institutions through digital platforms, and the learning outcomes are formally recognised within their home institution's curriculum. Unlike ad-hoc online collaborations or short-term virtual projects, VSM is institutionally embedded, credit-bearing, and positioned as a sustainable complement to traditional physical study abroad programmes. International organisations, such as the European Commission and the OECD, have increasingly promoted VSM as a means to democratise access to global learning opportunities. Physical study abroad continues to offer transformative experiences, but its accessibility is often limited by economic, geographic, or personal constraints [1]. By contrast, VSM provides a scalable and inclusive model of internationalisation, ensuring that students who might not otherwise have the opportunity to study abroad can still develop intercultural competence and global perspectives. At the same time, VSM exists alongside related approaches such as Virtual Exchange (VE) and Collaborative Online International Learning (COIL). These initiatives have been highly successful in promoting intercultural dialogue, collaborative projects, and mutual understanding across borders [2]. VSM shares these goals but differs in emphasis. While VE and COIL often highlight project-based interaction and joint knowledge construction, VSM places greater focus on longer-term participation in partner universities' regular courses, with learning outcomes that are formally recognised within students' home curricula. In this sense, VE, COIL, and VSM can be seen as complementary strands of internationalisation through digital technology, each contributing to widening opportunities for global learning in distinct but mutually reinforcing ways.

2. Literature Review

2.1 Virtual Student Mobility, Virtual Exchange, and COIL



Research on internationalisation in higher education has increasingly highlighted the diverse ways in which digital technologies can bridge geographical and cultural distances. VE and COIL have been particularly influential, demonstrating how online environments can foster intercultural dialogue, collaborative projects, and peer-to-peer learning across institutions [2]. Evaluations of VE and COIL initiatives consistently report enhanced intercultural awareness, critical thinking, and communicative competence, making them valuable pedagogical approaches in their own right. VSM shares many of these aims but operates within a somewhat different institutional framework. Whereas VE and COIL are often organised as short-term, project-based collaborations embedded within existing courses, VSM typically involves students joining full academic courses offered at partner universities, with participation formally recognised for credit within their home institution. In this way, VSM expands the scope of online international learning by providing students with access to sustained disciplinary engagement, academic assessment, and institutional certification, while also enabling opportunities for incidental intercultural understanding and collaboration. Rather than viewing these approaches as competing models, it is more productive to understand them as complementary strands of digital internationalisation. VE and COIL provide highly interactive, dialogue-centred experiences, while VSM provides longer-term, curriculum-integrated access to international learning environments. Together, they contribute to a more inclusive and diversified landscape of global education, ensuring that international opportunities are not confined to students with the resources for physical mobility.

2.2 Policy Context

Policy initiatives have strongly influenced the development of Virtual Student Mobility in different regions. In Europe, the European Commission has explicitly promoted VSM through programmes such as Erasmus+ Virtual Exchange and related digital internationalisation projects. These initiatives emphasise that physical study abroad, while transformative, is not accessible to all students. VSM is therefore positioned as a mechanism to ensure that international experiences become a right rather than a privilege, widening participation across socio-economic and geographic contexts. Reports highlight the scalability of VSM and its potential to complement Erasmus's long-standing emphasis on mobility, intercultural understanding, and employability skills [3]. In Japan, although there has not been a comparable nationwide policy framework directly promoting VSM, research funding schemes and institutional initiatives have increasingly supported universities in experimenting with new forms of digital international education. These efforts reflect a growing recognition that international opportunities need to be broadened beyond traditional physical study abroad and that virtual models can play an important complementary role.

2.3 AI-Enhanced Learning Tools and Pedagogical Support

The rapid development of artificial intelligence (AI) technologies has revolutionised the design and experience of online learning environments. In higher education, the integration of AI-supported functions such as automatic speech recognition, multilingual captioning, real-time translation, and automated summarisation has been shown to enhance accessibility, reduce cognitive load, and promote learner autonomy [4][5]. These tools provide additional scaffolding for learners navigating courses taught in a second language, thereby reducing participation barriers in international and intercultural settings. A growing body of research highlights how AI-generated captions and translations improve comprehension for students with varying levels of language proficiency, as well as for those with hearing difficulties or diverse learning needs [6]. Additionally, automated summaries and transcripts extend the learning process beyond the live classroom, enabling students to revisit complex materials at their own pace. This not only strengthens retention but also supports more flexible forms of engagement, allowing students to shift from "real-time survival" listening to a deeper understanding of the content.

Scholars have also emphasised the role of AI in fostering learner agency and self-regulated learning. By providing tools for note-taking, review, and personalised pacing, AI functions allow learners to take greater ownership of their study strategies [7]. In international collaborative contexts, such as VSM, these affordances become particularly valuable, as they create a more inclusive environment in which students with diverse linguistic and cultural backgrounds can contribute more equitably to academic discussions. However, despite these promising developments, the use of AI-enhanced platforms in formal international education programmes remains underexplored. Most research to date has focused either on language learning applications or on accessibility in general online education. There is still limited empirical evidence on how AI-enhanced tools can support credit-bearing, content-based global courses, such as those offered through VSM. This paper addresses that gap by examining how the intentional design of an AI-enhanced Zoom environment supported Japanese and American



undergraduates in a virtual mobility programme, and how students perceived its impact on engagement, confidence, and intercultural communication.

3. Research Design

3.1 Context and Participants

This study was conducted within a VSM programme jointly organised by Meiji Gakuin University (MGU, Japan) and the University of Hawai'i at Mānoa (UHM, U.S.). The programme was implemented across Spring 2023 and Fall 2023, as well as Spring 2024 and Fall 2024, covering a total of five courses. Japanese undergraduate students participated remotely in UHM courses taught in English on themes such as ethnic studies, migration, and cultural diversity. These were not language courses, but they provided opportunities for incidental English use and intercultural engagement through sustained participation. Across the five courses, a total of 99 students enrolled, and 76 valid survey responses were collected (78% response rate).

3.2 Research Focus and Questions

The broader evaluation project investigated the extent to which the joint courses between MGU and UHM could function as an effective VSM experience for Japanese undergraduates. Building on this foundation, the present paper focuses specifically on the role of AI-enhanced Zoom within that programme.

Accordingly, the study addresses the following guiding questions:

1. *How can AI-supported Zoom features be strategically integrated into a VSM course design to enhance accessibility and learner autonomy?*
2. *What impact do these features have on student engagement, confidence, and intercultural communication in global learning contexts?*

3.3 Digital Environment and AI-Enhanced Features

The central learning platform was Zoom, intentionally configured not only as a meeting tool but as a learning environment enriched with AI-supported functions:

- Multilingual live captions (Japanese and/or English)
- Real-time translation to aid comprehension (Japanese – English)
- Automated summaries and transcripts for flexible review and reduced note-taking burden
- Cloud-based recordings enabling repeated access to lectures

These tools were introduced to reduce linguistic barriers, support comprehension, and foster autonomy, thereby allowing students to concentrate more fully on content and intercultural interaction.

Table 1. Survey Domains and Response Rate

Item	Description
Period	Spring/Fall 2023 & Spring/Fall 2024 (5 courses)
Participants	99 students (MGU)
Responses	76 (78% response rate)
Method	End-of-semester online survey
Format	Likert-scale (1–5) + open-ended responses
Domains	1. Course content & difficulty 2. Joint sessions with UHM 3. Learning outcomes 4. Online learning environment 5. Interaction with UHM faculty & students 6. Virtual study abroad experience

3.4 Data Collection

Data were collected through end-of-semester online surveys administered to all participating students. The survey design included:

- **Likert-scale questions** (1 = strongly disagree to 5 = strongly agree) across six domains:
 1. Course content and difficulty
 2. Joint sessions with UHM
 3. Learning outcomes



4. Online learning environment
 5. Interaction with UHM faculty and students
 6. Virtual study abroad experience
- Open-ended questions asking students to describe the reasons behind their ratings and reflect on their experiences.

3.5 Analytical Approach

Survey responses were analysed in two stages. First, descriptive statistics were used to examine overall patterns across the six domains. Second, a qualitative thematic analysis of the open-ended responses was conducted to identify recurring themes related to accessibility, confidence, learner autonomy, intercultural interaction, and challenges associated with following English-medium academic instruction. This mixed-methods approach provided a comprehensive picture of how students experienced AI-enhanced Zoom within the VSM programme.

4. Findings

Table 2. Survey Highlights (Mean Ratings, 1–5 Scale)

Domain	Mean Rating	Key Insights
Course design & structure	4.5+	High satisfaction with materials, organisation, thematic clarity
UHM instructors	4.5+	Clear explanations, respect, constructive feedback
Interaction with UHM students	~4.0	Meaningful cultural learning, self-awareness through collaboration
Online learning environment	3.8–4.0	Students adapted well with TA and technology support
Virtual study abroad recognition	4.4–5.0	Strong sense of global classroom; motivation for future study abroad

4.1 Overall Satisfaction with Course Design and Structure

Survey results across the five courses indicated consistently high satisfaction with the programme. Ratings for course organisation, thematic clarity, and instructional quality averaged above 4.5 on a 5-point scale. Students valued the academic rigour of the UHM courses and appreciated the clear structure that supported their engagement. Many described the experience as equivalent to studying abroad, underscoring the authenticity of the overseas classroom.

4.2 Interactions with UHM Faculty and Students

Participants reported positive experiences with UHM instructors, highlighting the clarity of explanations, respect, and constructive feedback. Interactions with UHM students were also rated highly. Through joint sessions and group activities, Japanese students gained cultural awareness and new perspectives on diversity. Reflections emphasised that this peer engagement contributed strongly to the sense of being part of a global classroom community.

4.3 Virtual Study Abroad as a Recognised Experience

One of the most highly rated categories was the recognition of the programme as a form of virtual study abroad, with average ratings ranging from 4.4 to 5.0. Students reported feeling motivated to pursue further international experiences and considered the VSM an accessible pathway for global learning. Comments such as *“It truly felt like studying abroad”* illustrate how participants perceived the programme as more than an online class, but rather a meaningful international immersion.

4.4 Challenges and Areas for Growth

Despite overall positive responses, challenges were noted. Students often described the fast pace of English lectures and unfamiliar academic norms as difficult to adjust to. While these challenges were initially discouraging, many students reflected that overcoming them contributed to personal growth, increased confidence, and a stronger willingness to engage in future global learning opportunities.

4.5 The Role of AI-Supported Tools (Interpretive Lens)

Although the surveys did not isolate the impact of each digital function, qualitative reflections suggest that the integration of AI-enhanced Zoom features (e.g., captions, translations, recordings, summaries) played a background role in sustaining engagement. Students frequently mentioned the importance of being able to review lectures flexibly, keep up with content despite language barriers,



and stay focused during sessions. These affordances were not always explicitly labelled as “AI” by the students. Still, they formed part of the supportive environment that allowed participants to adapt and remain confident in an otherwise challenging academic context.

5. Discussion

The findings indicate that students widely recognised the joint courses between MGU and UHM as a meaningful form of VSM. High levels of satisfaction with course design, positive interactions with faculty, and intercultural engagement with UHM peers suggest that the programme successfully provided students with an authentic overseas classroom experience. Students’ reflections show that, despite challenges related to language proficiency and academic norms, many perceived personal growth, increased confidence, and motivation to pursue further international opportunities. A key contribution of this study is the consideration of how AI-enhanced Zoom functioned as part of the learning environment. While the survey instruments did not measure the impact of each AI-supported tool in isolation, students’ open-ended comments and patterns of engagement suggest that features such as multilingual captions, translations, automated summaries, and cloud recordings acted as a scaffolding layer that sustained participation. In this sense, the tools may be understood not as the focus of learning, but as enablers of accessibility and learner autonomy within the VSM context.

These findings align with prior research that has emphasised the value of AI tools in reducing cognitive load, supporting comprehension, and fostering learner agency [4][5]. For Japanese undergraduates, the ability to review lectures flexibly and rely on captions or translations when necessary allowed them to focus less on “survival listening” and more on intercultural interaction and content understanding. This reflects the broader principle that digital inclusion is a prerequisite for meaningful international learning opportunities. At the same time, the results highlight important challenges. Students frequently reported difficulties with fast-paced English lectures and unfamiliar academic styles. These challenges are not fully addressed by technological supports alone and require intentional pedagogical design and human facilitation. Technical assistants and supportive instructors were repeatedly mentioned as crucial for sustaining engagement. This suggests that AI affordances are most effective when combined with strong instructional design and human mediation, ensuring that students can both access and act upon global learning opportunities. Overall, this study demonstrates that AI-enhanced Zoom can serve as more than a meeting tool; it can function as an inclusive and pedagogically meaningful space for VSM. By embedding AI features into the learning design, institutions can lower participation barriers, support incidental language learning, and encourage intercultural exchange. These insights contribute to the growing recognition that VSM, when carefully designed, can complement physical mobility and expand access to international education in sustainable ways.

6. Conclusion

This study examined the implementation of a VSM programme, with particular attention to the role of AI-enhanced Zoom as a learning environment. Survey results from five courses (2023–2024) demonstrated high levels of satisfaction with course design, meaningful interactions with faculty and peers, and strong recognition of the programme as a legitimate form of virtual study abroad. Students highlighted both the challenges of engaging in English-medium academic contexts and the personal growth and motivation that resulted from overcoming these challenges. Although the survey design did not explicitly isolate the contribution of each AI-supported function, reflections indicate that features such as captions, translations, transcripts, and recordings provided an important scaffolding layer. These tools helped sustain participation, supported comprehension, and fostered learner autonomy, thereby creating conditions for incidental language learning and intercultural exchange. The findings suggest that when strategically integrated, AI-enhanced platforms like Zoom can function as inclusive and pedagogically meaningful spaces for international education, extending access to students who face barriers to physical mobility. For institutions, this points to a sustainable model of internationalisation that leverages digital infrastructures. For educators, it highlights the importance of combining technological affordances with intentional design and human support to maximise impact. Future research should examine the specific mechanisms by which AI-supported tools influence learning behaviours in VSM contexts.

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