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Using AI to enable intercultural communication through virtual exchange projects for pre-service teachers

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Collaborative Online International Learning (COIL) is an effective and accessible method of facilitating student communication without spending the large amounts of money that traditional study abroad programs entail. This is of particular benefit for education majors, who are required to complete various periods of practical training in schools, making study abroad unfeasible for most students. Unfortunately, Japanese education majors are often not proficient in English, so communication in COIL can be very challenging. This research project sought to find a way in which pre-service teachers without high levels of English proficiency could collaborate with teachers at international schools using English as a lingua franca with the aid of generative artificial intelligence (AI) to enable virtual exchange to take place smoothly.

Keywords: artificial intelligence, education, machine translation, pre-service teachers, virtual exchange

Introduction

Collaborative Online International Learning (COIL) has been promoted as a supplement or alternative to traditional study abroad programs. COIL can facilitate intercultural communication and language exchange between multilingual learners (Rubin, 2017). COIL projects are typically structured as either small group or whole class exchanges. These projects work well with self-motivated students who can interact in English during synchronous sessions. Unfortunately, very few COIL projects are available for students without strong foreign language skills. The purpose of this project was to allow Japanese pre-service teachers, without high level English language skills, to engage in virtual exchange with teachers at international schools around Japan in order to gain insights into various teaching environments, which has been shown to be an effective way to improve global awareness of pedagogy

without travelling overseas (Huertas-Abril & Palacios-Hidalgo, 2024). The use of artificial intelligence (AI) and machine translation (MT) enabled participants to actively participate in English despite low proficiency levels.

Objectives

Existing research has focused on benefits of virtual exchanges for language and intercultural communication, but this research was an attempt to study the benefits of a virtual learning experience for students studying to become kindergarten or elementary school teachers in Japan, who have a desire to learn about pedagogy and education systems overseas. The study aims to address the following research questions:

1. What are the perceived benefits of virtual exchanges with students with low levels of English?
2. What are the challenges of conducting virtual exchanges when participants do not have a lingua franca, and how can these challenges be overcome with the use of AI?

Context

The virtual exchange project was held once a week over an eight-week period. The exchange took place between 16 Japanese undergraduate students and eight in-service teachers. Each exchange lasted approximately 40 minutes and was part of a credit-bearing class. The project was both student-led and facilitated.

Participants

Data was gathered from 16 university pre-service teachers enrolled in a research seminar class at a university in Japan. Eight pre-service teachers were studying to become kindergarten or day-care centre teachers, and eight pre-service teachers were studying to become elementary or junior high school teachers. Although participation in the class was compulsory, participation in this research was optional. Pre-service teachers had low levels of English proficiency (A1-A2 on the CEFR) and were not highly motivated to communicate in English. On the other hand, they were highly motivated to communicate with practicing teachers and to learn more about their possible future careers.

Interviewees

The in-service teachers all had international teaching experience and spoke fluent English. The teachers were all currently living in Japan, which enabled synchronous meetings. Interviewee current and past teaching experience is shown in Table 1.



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Table 1. Interviewee details

Interviewee	Current teaching position	Previous teaching experience
Teacher 1	International School in Japan	International School in Japan
Teacher 2	International School in Japan	Elementary School USA
Teacher 3	International School in Japan	Elementary School in Japan
Teacher 4	International School in Japan	International School in Japan
Teacher 5	International School in Japan	International School in Brazil
Teacher 6	Special Needs school in Japan	Elementary school UK
Teacher 7	Special Needs school in Japan	Art teacher in international school
Teacher 8	International School in Japan	Elementary school in Hawaii

Project design

Eight virtual interviews were conducted over a period of three months. Each interview was between a practicing teacher in Japan and two pre-service teachers and lasted for 30 to 40 minutes. Two pre-service teachers arranged the date and time of the interview, wrote interview questions, and conducted the interview with the teacher’s support. The other 14 pre-service teachers joined the interview and asked follow-up questions. Interviews were conducted using Zoom video conferencing. All interviews were recorded, transcribed and summarized using Zoom’s built in AI with participants’ consent. Recordings, transcripts and summaries were all shared with all pre-service teachers through the university Learning Management System (LMS) after the interview. During the interviews, the researcher acted as a facilitator helping pre-service teachers to translate follow-up questions into English when necessary.

After each interview all pre-service teachers wrote reflections (approximately 300 words) on the eight virtual exchanges, and a final reflection paper (approximately 1000 words) on the virtual exchange project as a whole. This written data was analysed by the researcher using a process of constructivist grounded theory (Charmaz, 2014). Through this process themes are coded and compared through a systematic, iterative process, until common themes emerge from the data. These themes then become the findings co-constructed by the participants and researchers.

Findings

The findings were divided into four themes: vocational learning, life advice, practical skills, and the perceived value of this project, which emerged from the data.

Vocational learning

The main purpose of this project was for pre-service teachers to gain advice on their future career from a variety of in-service teachers. Pre-service teachers noted a myriad of ways in which this project inspired and helped them envisage their future career. Nine of the pre-service teachers commented on how the teachers encouraged them to be flexible in what they taught and how they taught. In the university, pre-service teachers are encouraged to follow the prescribed curriculum, but the in-service teachers advised using this as a guide but always changing and adapting

the syllabus and curriculum to the needs of individual classes and students. Pre-service teachers said that hearing the teacher's advice on listening to the children first helped them to make lesson plans and teach mock lessons at university:

When I first started making lessons, I had some doubts as there seemed to be some template-like rules for the lessons and not much freedom. [Teacher 3]'s words really resonated with me as I feel that I have been so focused on the template that I have not been able to put children first. I was reminded of my original intention, which was to always put children first in the classroom. (Student 12, personal communication, October 24, 2024)

Pre-service teachers commented on how much the teachers enjoyed their jobs, which was in turn highly motivating for pre-service teachers. Student 11 (personal communication, October 24, 2024) compared her experience when she was working part-time in a school in comparison to the teachers in the Zoom interviews:

When I went to teaching practicum, I felt more hard and tired and I was worried whether I would enjoy it when I became a teacher, but I heard [in the Zoom interviews] that it was a rewarding profession... Although there are many hardships there are also many moments of accomplishment.

Life advice

In addition to vocational learning, pre-service teachers also received life advice. The pre-service teachers were all very worried about their futures. All the interviewed teachers shared examples of their own failures and how they quit jobs and changed careers:

Through these interviews with teachers, I was able to hear about the different ways of doing things...and the solutions that they have found even within the same profession of education...I learnt that it is important not to compromise on what you want to do and to stop doing what you don't find challenging. I was able to broaden my horizons. (Student 2, personal communication, October 29, 2024)

Pre-service teachers noted that it's easy to focus on the negative aspect of being a teacher with long hours and low pay. However, through listening to these teachers they were reminded what a rewarding profession teaching is.

Practical skills

Pre-service teachers gained many skills on using technology to communicate in English. They wrote that at first, they had no idea how to write interview questions in English, but they learned how to use MT and AI effectively. They also needed to communicate in English via email to arrange the date of the interview and to thank the interviewer. Some pre-service teachers said that it had given them confidence to communicate with parents who could not speak Japanese when they start working.



Value of this project

As well as learning personal skills, pre-service teachers also commented on the value of this virtual exchange project. Some students expressed that they had never done a project like this and that in the future they want to pursue ways to entertain and excite children in their own way using technology. They commented that there are issues that you cannot understand unless you are in the field, so this was a good opportunity to hear what various teachers had been through. Student 10 commented on the actual process of arranging the interview and using polite language to superiors, she said that “These are things that you must do when you enter society. Regardless of whether you are a teacher or not, your attitude can affect the credibility of your company.” (personal communication, November 5, 2025). It was difficult to ask questions when they were doing teaching practicums, but in this situation, it was much easier. Zoom’s transcription function supported pre-service teachers in following the conversation in real time and creating questions. Most of the pre-service teachers stated that it was the first time for them to ask a question after a lecture or interview in English or Japanese.

Discussion and conclusion

This project has demonstrated that even students with low levels of English ability can participate in virtual exchanges in English if given time to prepare interview questions using translation software, as well as utilizing the transcribe function within Zoom. Virtual Exchanges should be more than language exchange opportunities. The pre-service teachers gained a great deal of knowledge about pedagogy, teaching as a career as well as life skills and using technology as an aid in English communication.

The effective use of MT and AI was crucial in the successful outcome of this project. In future, interviewing teachers worldwide would broaden the project. As AI and MT become more adept at accurate translation, it is hoped that more students can engage in intercultural exchanges with English as a lingua franca, even when they do not have high level English language skills.

Author declarations

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