

Pre-service Teacher's Perceptions on Global Citizenship and Online Education in a Virtual Exchange Context

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Abstract

As part of a virtual exchange program, this mixed-method research investigated the pre-service teachers' initial attitudes and perceptions towards global citizenship and online education. In our initial findings, participants demonstrated a cautiously optimistic attitude that they believed online teaching could be effective, but more training is needed for pre-service teachers. Moreover, the participants who had Virtual Exchange (VE) experience before had a more critical attitude toward online teaching and learning. In addition, most pre-service teachers showed limited familiarity with the concept of global citizenship education. Though they appreciate the importance of global citizenship education, they expressed concerns about cultural and language barriers to implementing it in their classrooms. These results provided a baseline of pre-service teachers and shed light on future design and implementation of VE in initial teacher education.

Keywords: Virtual exchange, global citizenship, pre-service teachers, digital skills

The COVID pandemic has driven a significant shift towards online learning and teaching. Even in the post-pandemic era, there is a continued need for online learning, communication, and collaboration, particularly in remote/rural areas and on the international level (Ergin & Morche, 2018). To address this need, virtual exchange (VE) serves as a digital platform that provides opportunities for “internationalization at home” (De Wit, 2016; Wild et. al., 2023) as well as connects classes, students, and teachers worldwide (Lin, 2021, p. 24). VE creates a virtual network that links individuals and educational institutions, allowing them to collaborate and study together despite being physically separated by using technology. Moreover, VE involves digital

interaction/education between students from different countries and cultures led by educators or facilitators (Helm, 2018). By offering an affordable global learning environment, VE enables students to interact, communicate, collaborate, and engage in projects with peers using the Internet and electronic devices (Lanham & Voskuil, 2022).

VE has also become a platform for future teachers to practice teaching and develop multiple competencies. As Lawrence and Spector-Cohen (2018) point out, there are many potential benefits stemming from the integration of virtual exchange into initial teacher education. Pre-service teachers can develop global citizenship, intercultural awareness, and intercultural competence (Godwin-Jones, 2019; O'Dowd, 2018), gain 21st-century digital skills (Dooly & Sadler, 2013; Flogie et al., 2021), and gain teacher and learner autonomy (Kramsch, A'Ness, & Lam, 2000).

The purpose of the whole study was to investigate the impact of participation in a virtual exchange project on pre-service teachers' perceptions toward global citizenship education and digital teaching. The project is a virtual after-school club at the US College that provides free materials and learning opportunities to students worldwide. In one-hour synchronous lessons, pre-service teachers educate middle school students around the world about the UN Sustainable Development Goals, fostering global competencies, cross-national skills, and collaborations (Witt et al., 2023).

This article focused solely on the findings related to pre-service teachers' perceptions toward online teaching and learning and global citizenship before they started participation in the VE project. For our research, preliminary findings proved invaluable in delving into potential barriers or challenges in data collection. They aid in identifying questions for subsequent questionnaires, focus group discussions, and individual interviews, facilitating the acquisition of insights from the target population and enabling a comparative analysis of their experiences. Publishing our preliminary findings can benefit other researchers planning similar studies, as it can provide insights into the feasibility, challenges, and lessons learned during the survey design and initial data collection process.

This study aimed to address the following research question:

What were the initial perceptions of pre-service teachers toward online teaching and learning and global citizenship education before their participation in a virtual exchange program?

Understanding pre-service teachers' perceptions towards global citizenship and online teaching was crucial as it directly impacts their future teaching methods and practices. By assessing their perceptions during their university preparation, we can identify potential challenges and barriers to promoting global citizenship education and integrating online education. This knowledge allows teacher educators to implement strategic planning and adjustments to the teacher training program, equipping future teachers with the necessary knowledge and skills to foster global citizenship and navigate online teaching effectively. Ultimately, this will ensure students are effectively prepared for a globally interconnected and technologically advanced world.

Literature Review

The rise of educational technologies, including VE, has revolutionized teaching methods. VE employs various tools like discussion boards, videoconferencing, and virtual environments to facilitate learning (Nicolaou, 2021). Recent studies have highlighted the positive impact of VE on the digital skills of pre-service teachers (Hauck, 2019; Kopish & Marques, 2020; Nicolaou, 2021). However, scholars emphasized the importance of critical digital literacy and reflective tasks to contextualize the use of technology (Hauck, 2019). Despite the advantages of VE, it was not included in the official curriculum and is not common educational practice in educational institutions (Lin, 2021, p. 24). Although there were potential benefits of incorporating technology-enabled curriculum design assignments to enhance pre-service teachers' confidence in utilizing technology effectively (Kopish & Marques, 2020), the reasons for not including it in the initial teacher education curriculum remained unknown and require additional research.

Furthermore, virtual exchange programs provide cross-cultural experiences that can develop pre-service teachers' global citizenship. VE can integrate authentic intercultural learning scenarios into various subject areas

and can be very effective in developing aspects of intercultural competence (O'Dowd & Lewis, 2016). For example, the Evaluating and Upscaling Telecollaborative Teacher Education (EVALUATE) project in Europe provided solid evidence of its outcomes. Pre-service teachers tended to question their own identities more and reflect more on differences, which indicates their improvement in intercultural understanding (The EVALUATE Group, 2019). Another VE project in initial teacher education between North America and Italy in 2018 also noted the promotion of participants' global citizenship. The results demonstrated that after this project, pre-service teachers actively reflect on their role in a democratic society as intercultural and global citizens (Trapè, 2020).

Though researchers have investigated pre-service teachers' attitudes toward global citizenship and technology (McGaha & Linder, 2014; Akturk et al., 2015), there was limited understanding of pre-service teachers' attitudes in a virtual exchange context, which can be critical to preparing and implementing a more effective VE program.

Theoretical Framework

The theoretical frameworks for this paper united critical concepts and theories in digital learning and global citizenship education and encompass Technological Pedagogical Content Knowledge (TPACK) (Koehler & Mishra, 2009) and Social Constructivism (SC) (Kalina & Powell, 2009) to gauge readiness for technology integration, explores the influence of VE on global citizenship attitudes and intercultural competencies, recognizes the enhancement of digital literacy and skills, acknowledges the role of virtual communities of practice, considers reflective teaching practices and examines curriculum design and integration. Together, these elements provided a comprehensive understanding of how VE shaped pre-service teachers' attitudes and competencies, emphasizing the interplay between technology, intercultural skills, reflective teaching, and curriculum design in shaping future educators' perceptions and practices.

Methodology

This study employed a mixed-methods approach (Creswell & Clark, 2017), utilizing quantitative and qualitative data to comprehensively understand the topic. For this part, to gather preliminary quantitative data, the questionnaire about online teaching and learning was utilized. The qualitative data was collected by eight open-ended questions about global citizenship education (GCE). The questions included their definitions of global citizenship, their belief in GCE's importance, their understanding of different cultures in the teaching context, and their teaching strategies regarding GCE.

Participants

The participants in this study were pre-service teachers participating in the VE project who were recruited from undergraduate students at the US university, with the majority from the College of Education. There were students from various academic levels, including freshmen, seniors, sophomores, juniors, and graduate students. The sample predominantly comprised female students. Furthermore, a significant proportion of the participants (43.8% in questionnaires and 59.3% in interviews) were pursuing a degree in Elementary Education. In total, a purposive group of 54 undergraduate students (pre-service teachers) in VE project were all invited to join our research. Creswell (2018) believed that a purposeful group could help highlight different perspectives on a problem. 48 undergraduate students agreed to participate and filled out two questionnaires.

Data collection instrument

The self-administered questionnaires with open-ended and scaled questions were used to collect data for this study. A total of three questionnaires were employed in the whole study: the first administered before the project's initiation, the second after the culmination of the first semester, and the final one upon the project's conclusion. However, in this article, our focus was directed towards the questionnaires administered before the project's initiation. This survey consisted of questions related to pre-service teachers' attitudes toward online teaching and learning and global citizenship education. The first part was about online teaching and learning, including Likert-scale questions (N=14), close-ended questions (N=5), and two open-ended questions to assess

pre-service teachers' perceptions of online learning and teaching. The second part about global citizenship education included open-ended questions (N=8) about pre-service teachers' understanding of global citizenship education and related teaching strategies in the VE project. In addition, six demographic questions were asked to gather information about participants' backgrounds and educational experiences.

Data Collection

Data was collected through Google Forms, allowing participants to complete the survey at their convenience. Participants were provided with unique survey links before their participation in the project, and they were informed about the voluntary nature of their participation and the confidentiality of their responses.

Data analysis

Quantitative data from the Information and Communication Technology (ICT) questionnaire were analyzed using descriptive statistics, ANOVA, and independent t-test. The SPSS program was used for quantitative data analysis. Qualitative data from open-ended questions were analyzed using thematic analysis in NVivo to identify common themes, patterns, and insights related to pre-service teachers' thoughts and perceptions.

Ethical Considerations

This study obtained ethical approval from the University Institutional Review Board (IRB), demonstrating that it adheres to the ethical guidelines for research involving human subjects. All researchers involved in the study completed the CITI training for research with human participants, ensuring their familiarity with ethical protocols.

Prior to data collection, participants were informed about the strict confidentiality measures in place. Their responses were treated with utmost confidentiality, and all participants were assigned pseudonyms to protect their identities throughout the study. After data collection, the information gathered is securely stored in a designated folder, ensuring that only the authorized research group can access it. Access to this data was protected by a unique and secure passport, adding an extra layer of security to safeguard participants' privacy and confidentiality.

Results

The preliminary findings of this study shed light on pre-service teachers' attitudes toward online teaching and learning and global citizenship before VE experience.

VE and Online Education: quantitative results

The pre-survey conducted before the project focused on understanding pre-service teachers' attitudes toward online teaching and learning based on their education experiences during and after the pandemic and, in some cases, participation in the project before. Overall, the surveyed students were cautiously optimistic about online teaching and learning, as the table below summarized (Table 1). Even though many of them agreed that online teaching could be effective and efficient, their attitude toward the outcomes of online teaching and learning was neutral. However, most (75.4%) agreed or strongly agreed that pre-service teachers need training opportunities to integrate ICT into their future teaching. In addition, we found some differences between groups within our participants. First, students were divided into three groups based on their answers to their willingness to teach ICT, which were "I will teach online in the future," "I may teach online in the future," and "I won't teach online in the future." So initially, these three groups demonstrated a significant difference in V7-V10 (V7: $F(2,45)=4.13, p=0.02$; V8: $F(2,45)=7.02, p<0.00$; V9: $F(2,45)=4.39, p=0.02$; V10: $F(2,45)=9.48, p=0.02$). The group that was more willing to teach online in the future tended to be more positive about ICT's effectiveness and believed it could save time for teachers.

Table 1 Descriptive analysis summary

Items	N	Minimum	Maximum	Mean	Std. Deviation
V1 Online classes...more flexibility...	48	2	5	4.13	0.84
V2 Learning online... confidence in technology	48	2	5	3.85	0.85
V3 I prefer...more online learning	48	1	5	2.50	1.07
V4 I have chosen...online classes...	48	1	5	2.77	1.21
V5 The use of ICT...distract the students...	48	1	5	3.00	0.97
V6 ICT improves...teacher-student communication	48	1	5	3.27	0.84
V7 Pre-service teachers...integration of ICT...	48	3	5	4.25	0.70
V8 Due to ICT...my students...more motivated...	48	2	5	3.48	0.74
V9 I think...important for effective teaching...	48	2	5	4.08	0.82
V10 ICT may become a distraction when teachers...greater focus on technology...	48	2	5	3.08	0.87
V 11 ICT can save time...	48	2	5	3.83	0.60
V12 I think...can be achieved online	48	1	5	3.83	1.04
V13 Online learning...more positive attitude...	48	1	5	3.23	1.13
V14 I am more willing to intergrade ICT...studied online...	48	1	5	3.63	1.08

Another significant difference in students' attitudes toward online teaching and learning was found between the students with VE experience and those without experience. The group of students who have participated in VE before scored significantly lower than the students who never joined this project before in V4, V8-V10 (V4: $t(46)=-3.35$, $p<0.00$; V8: $t(46)=-2.20$, $p=0.03$; V9: $t(46)=-3.32$, $p<0.00$; V10: $t(46)=-3.11$, $p<0.00$). These findings suggested the presence of potential disparity for individuals who participated in the VE program. The findings indicated that the students who have participated in the project longer (more than one semester) might have a more critical attitude towards online teaching and learning than the other group. In the meantime, there was no disparity identified between different majors, ethnicities, and years of school.

VE and Global Citizenship: qualitative results

The pre-survey used for global citizenship contained eight open-ended questions about pre-service teachers' understanding and attitudes toward global citizenship. Before the project, most pre-service teachers had limited familiarity with the concept of global citizenship education and only three of them mentioned they heard this term before. To most of them, global citizenship meant respecting different cultures. Few of them understood it as having citizens in multiple nations. With this superficial understanding, all of these 48 participants still demonstrated affirmation regarding the importance of integrating global citizenship education into their future classrooms because they believed in appreciating diverse cultures. For example:

I'm not too familiar with the term global citizenship, but I think it means being able to be open-minded about different cultures and other global components.

I think it's important to teach kids how to be inclusive when it comes to being educators, learners, etc. Teaching them this will help them be more inclusive in the real world.

Though they were excited about learning about other cultures and working with culturally diverse students, many of them were concerned about implementing global citizenship education in their virtual exchange classroom because of language and cultural barriers. In terms of engaging students in a virtual classroom, pre-service teachers emphasized the importance of promoting a positive and collaborative environment that makes students comfortable. They also provided many ideas for potential engaging students through interactive activities and technology, including proper use of breakout rooms and chat functions in online classrooms, promoting more discussion instead of lectures, valuing students' cultural expression, etc. For example:

The biggest challenge for me to teach in a multicultural/multinational virtual classroom is how I don't really know their culture and who they are yet, so there might be a possibility that I may do something rude, which in my perspective is not but it may be through their perspective.

I feel like having the chat open at all times and encouraging students to communicate within the chat in whatever language they prefer or know best. I also feel like this will be important for students to use their preferred language verbally too with other classmates.

Discussion

This study used the virtual exchange program as a case study to analyze pre-service teachers' attitudes toward online teaching and learning and global citizenship before they started participating in this project. These preliminary quantitative and qualitative findings showed that pre-service teachers are cautiously optimistic about online teaching, emphasizing the need for further investigation into COVID-19's influence. The findings also highlighted the importance of providing training opportunities to help future teachers integrate ICT effectively into their teaching (Sime & Priestley, 2005). Moreover, differences were observed between pre-service teachers willing to teach online and those who were not. Prior VE experience and practical exposure affected their attitudes toward online education. These results suggest that VE exposure may impact their perceptions of online education, emphasizing the role of practical experience in shaping teacher attitudes (O'Dowd, 2021).

In terms of qualitative findings, the majority of pre-service teachers exhibited limited familiarity with the concept of global citizenship prior to their engagement in VE. They mainly associated it with respecting

different cultures, and showing enthusiasm for its integration into teaching. These findings revealed that while pre-service teachers may have limited exposure to the concept of global citizenship, they are enthusiastic about integrating it into their teaching practices (Kopish & Marques, 2020). Concerns about language and cultural barriers in VE classrooms were expressed, emphasizing the importance of addressing these challenges. This highlights the importance of addressing these challenges and developing strategies to create inclusive and culturally sensitive virtual learning environments, as Alalshaikh (2015) noted.

Implications and Conclusion

This paper underscores various preliminary insights for shaping the future design and implementation of VE in initial teacher education. It also establishes a foundational understanding of pre-service teachers' attitudes toward online teaching and global citizenship from the outset. While the preliminary results have offered valuable information regarding VE and future teachers' attitudes toward online education and global citizenship, it may not be conclusive to assert definitively that these findings demonstrate the necessity for VE.

In our research, the initial discoveries have been of great value in exploring possible obstacles or difficulties encountered during data collection. They helped formulate questions for follow-up surveys, focus group sessions, and one-on-one interviews, thus aiding in gathering insights from the target demographic and allowing for a comparative examination of their experiences. Sharing our preliminary findings can be advantageous to fellow researchers undertaking comparable studies, as it can offer insights into the viability, hurdles, and knowledge gained during the initial phases of survey design and data collection.

Current results have indicated pre-service teachers' initial understanding of digital teaching and learning and global citizenship education, the following survey findings from this study will provide valuable insights into how pre-service teachers' attitudes towards online teaching and global citizenship education evolve after their participation in the VE program. Future findings will also shed light on the implications for their professional development in the field of education and the future implementation of VE as a tool for teacher training.

Understanding pre-service teachers' views on global citizenship and online teaching is vital for shaping their future teaching methods. Assessing these attitudes during their university preparation helps identify potential challenges and barriers, enabling strategic adjustments to the teacher training program. This equips future teachers with the necessary skills to foster global citizenship and navigate online teaching, ensuring students are well-prepared for a globally connected, tech-savvy world.

References

- Akturk, A. O., Izci, K., Caliskan, G., & Sahin, I. (2015). Analyzing preservice teachers' attitudes towards technology. *Online Submission*, 9(12), 3960-3966.
- Alalshaikh, S. (2015). Cultural impacts on distance learning, online learning styles, and design. *Quarterly Review of Distance Education*, 16(3), 67. <https://eric.ed.gov/?id=EJ1143825>
- Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Sage Publications.
- De Wit, H. (2016). Internationalisation and the role of online intercultural exchange. In O'Dowd, R. & Lewis, T. (Eds.), *Online intercultural exchange: Policy, pedagogy, practice*, 69-82. Routledge
- Dooly, M., & Sadler, R. (2013). Filling in the gaps: Linking theory and practice through telecollaboration in teacher education. *ReCALL*, 25(1), 4–29. <https://doi.org/10.1017/S0958344012000237>
- Ergin, H., & Morche, B. (2018). Internationalisation of HE through distance learning. *Higher Education Teaching and Learning*, 505, 1-4.
- Flogie, A., Gutierrez, B. F., Martinc, U., Nicolaou, A., O'Dowd, R., Sauro, S., & Zemljak, D. (2021). Developing virtual innovation and support networks for in-service and pre-service teachers. *UMBC Faculty Collection*.
- Godwin-Jones, R. (2019). Telecollaboration as an approach to developing intercultural communication competence. *Language Learning & Technology*, 23(3), 8-28. <http://hdl.handle.net/10125/44691>
- Hauck, M., & Müller-Hartmann, A. (Eds.). (2020). *Virtual exchange and 21st century teacher education: short papers from the 2019 EVALUATE conference*. Research-publishing.net. <https://files.eric.ed.gov/fulltext/ED609298.pdf>
- Helm, F. (2018). *Emerging identities in virtual exchange*. Research-publishing.net.
- Kalina, C., & Powell, K. C. (2009). Cognitive and social constructivism: Developing tools for an effective classroom. *Education*, 130(2), 241-250. <https://docdrop.org/static/drop-pdf/Powell-and-Kalina-U6g4p.pdf>

- Koehler, M., & Mishra, P. (2009). What is technological pedagogical content knowledge (TPACK)? *Contemporary issues in technology and teacher education*, 9(1), 60-70.
- Kopish, M., & Marques, W. (2020). Leveraging technology to promote global citizenship in teacher education in the United States and Brazil. *Research in Social Sciences and Technology*, 5(1), 45-69.
- Kramersch, C., A'Ness, F., & Lam, W. S. E. (2000). Authenticity and authorship in the computer-mediated acquisition of L2 literacy. *Language Learning & Technology*, 4(2), 72-95.
- Lanham, C. C., & Voskuil, C. (2022). Virtual exchange: Expanding access to global learning. In *Academic voices* (pp. 3-14). Chandos Publishing. <https://doi.org/10.1016/B978-0-323-91185-6.00013-6>
- Lawrence, G., & Spector-Cohen, E. (2018). Examining international telecollaboration in language teacher education. In *Cross-cultural perspectives on technology-enhanced language learning* (pp. 322-345). IGI Global. 10.4018/978-1-5225-5463-9.ch018
- Lin, C. C. (2021). Using virtual exchange to foster global competence and collaborative leadership in teacher education. *Dual Language Research and Practice Journal*, 4(1). <https://doi.org/10.21423/dlrpj-v4.a18>
- McGaha, J. M., & Linder, S. M. (2014). Determining teacher candidates' attitudes toward global-mindedness. *Action in Teacher Education*, 36(4), 305–321. <https://doi.org/10.1080/01626620.2014.948225>
- Nicolaou, A. (2021). Technological mediation in a global competence virtual exchange project: a critical digital literacies perspective. *Tertiary education language learning: a collection of research*, 111.
- O'Dowd, R., & Lewis, T. (Eds.). (2016). *Online intercultural exchange: Policy, pedagogy, practice*. Routledge.
- O'Dowd, R. (2018). From telecollaboration to virtual exchange: State-of-the-art and the role of UNICollaboration in moving forward. *Research-publishing.net*, 1, 1-23. <https://doi.org/10.14705/rpnet.2018.jve.1>
- O'Dowd, R. (2021). Virtual exchange: Moving forward into the next decade. *Computer Assisted Language Learning*, 34(3), 209-224. <https://doi.org/10.1080/09588221.2021.1902201>
- Sauro, S., Flogie, A., Gutierrez, B.F., Martinc, U., Nicolaou, A., O'Dowd, R. & Zemljak, D. (2021). Developing virtual innovation and support networks for in-service and pre-service teachers. *Virtual and Innovation Support Network*. <https://valiantproject.eu/research-publications/>
- Sime, D., & Priestley, M. (2005). Student teachers' first reflections on information and communications technology and classroom learning: implications for initial teacher education. *Journal of Computer Assisted Learning*, 21(2), 130-142. <https://doi.org/10.1111/j.1365-2729.2005.00120.x>
- The EVALUATE Group. (2019). *Evaluating the impact of virtual exchange on initial teacher education: a European policy experiment*. Research-publishing.net. <https://doi.org/10.14705/rpnet.2019.29.9782490057337>
- Trapè, R. (2020). Developing global citizenship through real-world tasks – a virtual exchange between North American university students and Italian upper-secondary school students. In M. Hauck & A. Müller-Hartmann (Eds.), *Virtual exchange and 21st century teacher education: Short papers from the 2019 EVALUATE conference (1st ed.)*, pp. 147–155. Research-publishing.net. <https://doi.org/10.14705/rpnet.2020.46.1140>
- Wild, K., Nierste, W., Kaiser, K., & Dasouqi, N. (2023) Virtual internationalization in teacher education: Experiences from four projects conducted at German higher institutions. In *Academic Mobility through the Lens of Language and Identity, Global Pandemics, and Distance Internationalization* (pp. 256-270). Routledge.
- Witt, A., Solberg J., Cabrera A., Souefi N., Hou Y., Lunardon M., Mazid S., Merkle C., Rakisheva A., Rizki T., Xu A., & Xu L. (2023). Section II: International and Global Online Teaching Discoveries. In C. Mason (Eds), *Teaching global citizenship in a global pandemic: Learning in a virtual world*. IAP– Information Age Publishing. [https://urldefense.com/v3/https://www.infoagepub.com/products/Breakthrough_!DZ3fjg!8t7hV9X27Ot30M2_1zHGgzs_a9OPfvFPqoji0Mw-NZeErtf3Lc9EGSAb2AsWQkw_DZfZxDkEp4MfBT1lc4p0\\$](https://urldefense.com/v3/https://www.infoagepub.com/products/Breakthrough_!DZ3fjg!8t7hV9X27Ot30M2_1zHGgzs_a9OPfvFPqoji0Mw-NZeErtf3Lc9EGSAb2AsWQkw_DZfZxDkEp4MfBT1lc4p0$)

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