Collaborative Online International Learning: A Promising Practice for Developing Intercultural and Global Competencies with Turkish and American Teacher Candidates

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Abstract

This exploratory study examines Collaborative Online International Learning (COIL) efforts of two teacher educators at Turkish and American universities who co-designed teacher education courses intending to develop intercultural and global competencies among students. Drawing from theoretical perspectives of Global Citizenship Education (GCE) (UNESCO, 2015), global competencies (Asia Society, 2008), and intercultural competencies (Barrett, 2018), the instructors virtually linked the two institutions, co-designed course syllabi and assignments, and promoted virtual exchange with teacher candidates. All students collaborated on two course assignments: 1) Comparative Intercultural Exchange - creation and analysis of autobiographical videos communicating personal, social, and cultural identities; and 2) Sustainable Development Goals (SDGs) Critical Inquiry - analysis and presentation of SDG targets at local, national, and global levels. Data analysis revealed five salient themes across American and Turkish students. The findings indicate that students considered the COIL project an affirming experience in developing intercultural and global competencies.

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Abstract in Turkish

Bu keşifsel çalışma, öğrenciler arasında kültürlerarası ve küresel yeterliliklerin geliştirilmesini amaçlayan öğretmen eğitimi derslerini birlikte tasarlayan Türk ve Amerikan üniversitelerindeki iki öğretim üyesinin İşbirlikçi Çevrimiçi Uluslararası Öğrenme (COIL) çabalarını incelemektedir. Küresel Vatandaşlık Eğitimi (KVE) (UNESCO, 2015), küresel yeterlikler (Asya Topluluğu, 2008) ve kültürlerarası yeterlikler (Barrett, 2018) teorik perspektiflerinden yararlanan eğitmenler, iki kurumu sanal olarak birbirine bağladı, ders müfredatlarını ve ödevleri birlikte tasarladı ve öğretmen adaylarıyla sanal değişimi teşvik etti. Tüm öğrenciler bir dersle ilişkili iki ödev üzerinde işbirliği yaptı: 1) Karşılaştırmalı Kültürlerarası Değişim - kişisel, sosyal ve kültürel kimlikleri ileten otobiyografik videoların oluşturulması ve analizi; ve 2) Sürdürülebilir Kalkınma Hedefleri (SKH) Eleştirel Sorgulama - yerel, ulusal ve küresel düzeylerde SKH hedeflerinin analizi ve sunumu. Veri analizi, Amerikalı ve Türk öğrenciler arasında beş belirgin temayı ortaya çıkardı. Bulgular, öğrencilerin COIL projesini kültürlerarası ve küresel yeterliklerin geliştirilmesinde olumlu bir deneyim olarak gördüklerini göstermektedir.

Keywords

Global citizenship education; global competencies; intercultural competencies; teacher education; virtual exchange

1. Introduction

1.1. Imperative to Globalize Teacher Education

Efforts to globalize educational curricula and teacher education programs have a long and contentious history, marked by different emphases, aims, and perspectives (Grossman, 2018). Stakeholders recognize preparing young people for a globalized world is imperative in education (Global Education First Initiative, 2021; UNESCO, 2015). Enshrining this commitment is Goal 4.7 of the United Nations' Sustainable Development Goals, which aims to ensure that by 2030, all learners acquire the knowledge and skills through education to promote sustainable development (United Nations, 2015).

The objective of cultivating a globally competent citizenry drives policy initiatives, with teachers identified as pivotal agents for implementing a globalized approach to citizenship education in classrooms (Goren & Yemini, 2017). Contemporary research underscores the rapid growth and evolution of

global citizenship education (GCE) in teacher preparation programs (Gaudelli, 2016; Goren & Yemini, 2017; Yemini et al., 2019). Despite its recognized significance, there is no consensus on the definition and objectives of GCE (Estellés & Fischman, 2020; Pashby et al., 2020; Yemini et al., 2019). A prevalent definition identifies GCE as a "framing paradigm which encapsulates how education can develop the knowledge, skills, values, and attitudes learners need for securing a world which is more just, peaceful, tolerant, inclusive, secure and sustainable" (UNESCO, 2015, p. 9).

Scholars indicate different catalysts driving GCE in teacher education, including the development of intercultural skills and competencies for living in diverse, globally connected societies (Yemini et al., 2019), education for sustainable development (Bamber, 2020), and preparing teachers to address environmental issues (Yemini et al., 2019). Achieving globally competent citizens requires globally competent teachers with knowledge of global regions, cultures, and issues and the skills and dispositions for responsible global engagement (Longview Foundation, 2008). Policymakers recognize the imperative of globalized learning and integrate global competencies into professional standards for teachers (Council for the Accreditation Educator Preparation (CAEP), 2013; Kirby & Crawford, 2012; Organisation for Economic Co-operation and Development (OECD), 2018).

This exploratory study examines Collaborative Online International Learning (COIL) initiatives of two teacher educators from Turkish and American universities who co-designed teacher education courses to develop intercultural and global competencies. Students collaborated on two (2) course assignments: Comparative Intercultural Exchange, which involved creating and analyzing autobiographical videos communicating identities, and Sustainable Development Goals (SDGs) Critical Inquiry, which involved analyzing SDG targets at local, national, and global levels and presenting videos of findings and actions. Videos were shared and analyzed through a private YouTube channel, with activities fostering intercultural exchange, critical reflection, and self-reflexivity. Employing qualitative methods, the researchers conducted a case study (Yin, 2009) to explore how COIL opportunities facilitate the development of intercultural and global competencies among American and Turkish students.

1.2. Literature Review

Teacher competencies encompass professional and pedagogical knowledge, skills, interpersonal and intercultural abilities, values, attitudes, ethics, and professional development. As policies evolve to promote globally competent teachers, key attributes include (a) building knowledge of local and global contexts and issues, (b) developing an understanding of various global perspectives, (c) engaging with diverse cultures, and (d) taking individual action that demonstrates an awareness of our global interconnectedness (OECD, 2018). Scholars have developed frameworks and assessment models for globally competent teachers, applicable to both in-service teachers (Tichnor-Wagner et al., 2019) and pre-service teachers (Parmigiani et al., 2022). These frameworks draw on diverse discourses to define global competencies and articulate desired outcomes, often categorized into knowledge, skills, and dispositions for preparing globally competent teachers (Asia Society/OECD, 2018; Association of American Colleges and Universities, 2015; OECD, 2018).

1.2.1. Learning Design for Developing Global Competencies

In teacher education programs, preparing globally competent teachers involves viewing pre-service teachers as global educators and learners (Byker & Xu, 2019; Little et al., 2019) and fostering attitudes toward global learning (Bamber et al., 2013). According to Krebs (2020), designing global learning experiences should consider a "global, international, and intercultural triad," which:

> refers to a full range of experiences and learning resulting from intentional pedagogies to prepare students for diversities in their immediate communities and professional environments, the international or global reach of their professions, and their responsibilities as citizens in the world (p. 37).

Scholars advocate for various teaching approaches and learner-centered methodologies to cultivate social change values and develop professional knowledge and skills applicable to global and real-world contexts (Hauerwas et al., 2023; Reynolds et al., 2019; Tarozzi & Mallon, 2019). Teacher educators should integrate opportunities for global inquiry, multiple perspectives, respectful dialogue, and responsible action into everyday classroom life (Boix Mansilla, 2016). Additionally, Kopish and Shahri's (in press) study identifies evidence-based practices for developing globally competent pre-service

teachers including a) critical inquiry through teaching diverse content and multiple perspectives and b) intercultural explorations.

1.2.2. Critical Inquiry Through Teaching Diverse Content and Multiple Perspectives

Critical inquiry through teaching diverse content and multiple perspectives enables pre-service teachers to examine varied and diverse perspectives, voices, viewpoints, and experiences from people around the globe (Boix Mansilla & Chua, 2016; Crawford et al., 2020; Hauerwas & Kerkhoff, 2021; Kopish, 2016; 2017; Kopish et al., 2019;). This approach facilitates connecting global issues to local contexts (Hauerwas et al., 2021), investigates the root causes of global issues and legacies of power in geopolitical contexts (Andreotti et al., 2016; Stein et al., 2016), and promotes the development of perspective consciousness and reflexivity in pre-service teachers (Andreotti, 2006; Hauerwas et al., 2021)

1.2.3. Intercultural Explorations

Intercultural explorations offer opportunities for pre-service teachers to develop global knowledge and skills by interacting with and learning from various cultures and diverse people (Byker & Xu, 2019; Kerkhoff, 2018; Kopish, 2016; 2017; Kopish et al., 2019; Little et al., 2019). These types of experiences help pre-service teachers (re)negotiate and (re)construct their positions and identities within and across groups (Collier, 2003), promote intercultural dialogue and foster cross-cultural awareness and communication skills (Awada & Gutiérrez-Colón, 2019; Kerkhoff, 2018; Owusu-Agyeman, 2022), and enhance interpersonal interactions and social contact to reduce misunderstanding, stereotypes, prejudice (Levrau & Loobuyck, 2013).

The literature consistently recognizes international immersion experiences such as international student teaching and study abroad as the gold standard of praxis in developing globally competent teachers (Byker & Xu, 2019; Hauerwas et al., 2017; Little et al., 2019; Soong et al., 2020). Researchers also showcase engaging preservice teachers in intercultural explorations and local-global immersion experiences (Kopish et al., 2019) and the importance of information and communication technology and virtual exchange for cross-cultural experiential learning in developing globally competent pre-service teachers (Arndt et al., 2021; Kopish & Marques, 2020; Hauerwas et al., 2023; O'Dowd, 2020; Ullom, 2017).

1.2.4. Virtual Exchange

Virtual exchange involves engaging students in online collaborative projects with international partners guided by educators or trained facilitators (O'Dowd & Lewis, 2016). Pedagogically, virtual exchange incorporates student-centered, international, and collaborative learning, facilitating knowledge construction through cross-cultural interactions. Virtual exchange focuses on various learning outcomes in teacher education, including intercultural communication and global citizenship competencies (Arndt et al., 2021; O'Dowd, 2020; Ullom, 2017). Recent studies highlight various virtual exchange collaborations in teacher education. One study involving U.S. and New Zealand students showed gains in intercultural communication skills, ethnocentric perspective recognition, and cross-cultural understanding (Arndt et al., 2021). Another study found that co-designing a website fostered intercultural communication skills for U.S. and South Korean students (Hur et al., 2020). The EVALUATE project with participants from Spain, Israel, and Sweden focused on creating cross-cultural lessons on racism and religion in schools to develop intercultural skills (Baroni et al., 2019). A U.S.-Italy exchange developed global competencies through modeling pedagogies and collaborative lesson design on migrant biographies (Hauerwas et al., 2023).

1.2.5. Collaborative Online International Learning

Collaborative Online International Learning (COIL) is a virtual exchange connecting multiple institutions to foster collaborative learning among professors and students, emphasizing subject knowledge and intercultural competence development (Rubin & Guth, 2022). Instructors implementing COIL collaborate online to design a shared syllabus, incorporating co-created learning objectives, tasks, and a culminating project. COIL courses vary in duration (i.e., four weeks or an entire semester), format (i.e., face-to-face, blended, or online courses), and meeting (i.e., asynchronous, synchronous) based on academic calendars, time differences, and learning objectives. COIL facilitates multicultural collaborations, enabling students to complete assignments, enhancing their course content comprehension, and developing global and intercultural competencies.

2. Theoretical Framework

Sant et al. (2018) offer a comprehensive synthesis of the global citizenship education (GCE) literature, identifying two prevalent discourses:

GCE as qualification and GCE as socialization. Each discourse encompasses specific aims, goals, and practical examples of GCE. This research is grounded in the theoretical perspectives of Global Citizenship Education (UNESCO, 2015), representing a *socialization* discourse that emphasizes cosmopolitan values such as human rights, tolerance, and peace to cultivate "good global citizens" (Sant et al., 2018). This approach is problem-centric (i.e., SDGs) and enables teacher candidates to explore issues like human rights, democracy, cultural diversity, and tolerance. It fosters critical thinking about global issues and the implications of national policies locally and globally. Thus, GCE *as socialization* aids in preparing teachers for diverse, globally connected societies and aligns with the broader democratic and citizenship aims of education (Yemini et al., 2019).

This study adopts UNESCO's (2015) GCE framework as a guiding paradigm for course and curricular design, encompassing cognitive, socio-emotional, and behavioral domains for learning. The cognitive domain promotes knowledge acquisition and critical thinking by examining local, national, and global issues, emphasizing interconnectedness and power dynamics. The socio-emotional domain advances a sense of belonging and shared humanity, addressing identity formation, norm comparison, and fostering positive relationships among diverse groups. The behavioral domain emphasizes ethically responsible engagement through individual and collective actions aiming for a more peaceful and sustainable world. Noticeably absent from the UNESCO (2015) framework is the emphasis on developing language and communication skills for intercultural interactions.

While teacher educators' imprimatur prepares teachers for licensure or professional development, fostering their development for their roles as citizens is equally crucial. Teacher education discourse articulates desired attributes, outcomes, and standardization as competencies in a neoliberal, knowledge-based economy. This aligns with GCE as *qualification,* emphasizing essential global citizenship knowledge, skills, and dispositions (Sant et al., 2018). Defining the attributes of GCE as *qualification,* the researchers employed frameworks of global competencies (Asia Society, 2008; Asia Society/OECD, 2018) and intercultural competencies (Barrett, 2018) to inform student outcomes and curriculum design and establish a coding scheme for data analysis (see Figure 1 on page 37). These frameworks underscore the critical importance of language and communication skills for interacting with diverse audiences, often

overlooked in the UNESCO (2015) framework, highlighting the urgency of these skills in the context of GCE.

2.1. Global Competencies

In the Asia Society's (2008) framework, global competence is defined by the interaction of four domains:

1. Investigate the world, i.e., identify issues, generate questions, analyze, weigh, and synthesize evidence, and develop arguments and defensible conclusions.
2. Recognize perspectives, i.e., express and identify influences on perspectives of self and others, explain the impact of cultural interactions, articulate how differential access affects the quality of life and perspectives.
3. Communicate ideas, i.e., recognize how diverse audiences perceive meaning and its effects on communication, listening and effect communication with diverse people, using technologies and media to communicate, reflect on how communication affects understanding and collaboration.
4. Take action, i.e., create opportunities for personal and collaborative action to improve conditions, assess options and plan actions, act in creative and ethical ways to contribute to improvement, and reflect on one's capacity to advocate.

2.2. Intercultural Competencies

Intercultural competence is the "ability to understand, interact, and establish positive relationships with people perceived to be culturally different" (Barrett, 2018, p. 94). Building on Deardorff's (2006) process model of intercultural competence, Barrett (2018) offers a framework comprising 14 components of intercultural competence organized into categories of values, attitudes, skills, and knowledge. Barrett (2018) argues that psychological orientations and cultural positionings are important conditions for developing intercultural competence. Values, attitudes, skills, knowledge, and understanding are essential for respectful interaction, effective communication, and constructive relationship-building with culturally diverse individuals (Barrett, 2018). Thus, fostering intercultural competencies requires self-reflexive activities exploring personal, social, and cultural identity and intersectionality and critically examining culture's 'surface' and 'deep' attributes. Designing opportunities for teacher candidates to engage critically through cross-cultural experiential learning, participate in intercultural dialogues, and engage in ongoing critical reflection and self-reflexive activities is imperative.

GCE (UNESCO, 2015)	Global Competencies (Asia Society, 2008)	Intercultural Competence (Barrett, 2018)
Cognitive – To acquire knowledge, understanding and critical thinking about global, regional, national and local issues and the interconnectedness and interdependency of different countries and populations (UNESCO, 2015, p. 15).	**Investigate the World** – Students investigate the world beyond their immediate environment.	**Knowledge and critical understanding** ● Knowledge and critical understanding of culture, cultures, and religions **Skills** ● Analytical and critical thinking skills
Socio-emotional – To have a sense of belonging to a common humanity, sharing values and responsibilities, empathy, solidarity and respect for differences and diversity (UNESCO, 2015, p. 15).	**Recognize Perspectives** – Students recognize their own and others' perspectives	**Knowledge** ● Knowledge and critical understanding of the self **Values** ● Valuing human dignity and human rights ● Valuing cultural diversity **Attitudes** ● Openness to cultural otherness and to other beliefs, worldviews, and practices ● Respect for other people and for other beliefs, worldviews, and practices ● Self-efficacy ● Tolerance of ambiguity **Skills** ● Empathy
Not explicitly articulated in UNESCO's (2015) framework	**Communicate Ideas** – Students communicate their ideas effectively with diverse audiences.	**Knowledge** ● Knowledge and critical understanding of language and communication **Skills** ● Skills of listening and observing ● Flexibility and adaptability ● Linguistic, communicative, and plurilingual skills
Behavioral – To act effectively and responsibly at local, national, and global levels for a more peaceful and sustainable world (UNESCO, 2015, p. 15).	**Take Action** – Students translate their ideas into appropriate actions to improve conditions.	*Not explicitly articulated in Barrett's (2018) framework*

FIGURE (1): CROSSWALK OF THEORETICAL FRAMEWORKS

3. Methods

This research employs qualitative methods using data from a case study (Yin, 2009) to describe and explain a phenomenon of interest: To what extent do COIL opportunities facilitate the development of intercultural and global competencies among American and Turkish students? Two primary research questions guide this study:

1. Whether and to what extent did students develop intercultural and global competencies owing to the course content and activities?
2. How did students characterize the opportunities and learning experiences that contributed to developing intercultural and global competencies?

3.1. Participants

This study included 22 third-year undergraduate students from an American public research university in a rural Appalachian setting and 10 graduate students from a Turkish public university in a coastal, urban setting. Demographically, the U.S. participants included 15 males and 7 females, all undergraduates aged 18 and 22. Turkish participants included 4 males and 6 females, all graduate students aged 22-35.

3.2. IRB Statement

IRB approval was obtained for 22 U.S. students, and informed written consent was collected by a colleague to avoid coercion. Participant names were not included to maintain anonymity and confidentiality. Similarly, ethics committee approval and the same procedures were followed for 10 Turkish students from the university in Türkiye.

3.3. Procedures

Professors incorporated COIL as a high-leverage teaching practice in their social studies methods courses (Rubin & Guth, 2015). Using a shared-syllabus approach (O'Dowd, 2018), they linked the two institutions, co-designed syllabi and assignments, and facilitated virtual exchanges during the 2021-2022 spring semester. Over the 15-week semester, students engaged in COIL activities for 8 weeks, collaborating on two assignments: Comparative Intercultural Exchange and Sustainable Development Goals Critical Inquiry. Professors aimed for one-to-one binational partner groups (King Ramírez, 2020), but due to enrollment differences, each Turkish student partnered with two or three U.S. students.

3.3.1. Comparative Intercultural Exchange

For these assignments, students at both institutions start with a self-reflection activity to identify personal identities (intrapersonal and connected to life experiences), social identities (derived from involvement in social groups), and cultural identities (socially constructed ways of being and acting). Next, students participate in small group intercultural dialogue with local classmates to discuss individual identities and gain a deeper understanding of different perspectives and practices. Students then create 10-minute autobiographical videos with vibrant images to communicate their identities and cultural influences. These videos are shared with assigned partners at the other university via a private YouTube channel. Partners then engage in asynchronous virtual exchanges to ask questions and learn more about each other.

3.3.2. Sustainable Development Goals Critical Inquiry

In this assignment, students conduct a guided, independent inquiry by selecting an SDG goal (i.e., 4 - Quality Education) and researching one target (i.e., Target 4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care, and pre-primary education so that they are ready for primary education) at local, national, and global levels. This inquiry involves a five-step process: 1) describe the issue(s)/problems(s) the SDG and target address, 2) identify root causes, affected individuals' stories, and relevant policies and solutions, 3) analyze how power shapes values, perspectives, and solutions, 4) design and communicate recommendations to address the SDG target, and 5) take action steps to influence public opinion, policy, or educate others. Students then create 10-15-minute videos showcasing their SDG projects incorporating narration and rich visuals. These videos are shared with assigned partners at the other university through a private YouTube channel, followed by an asynchronous virtual exchange to discuss and learn more about the SDG project.

3.4. Language

For each video, students provided a transcript written in their home language and a Google Translate version in their partners' home language. This step enhanced communication and minimized cultural miscommunication and potential conflict (O'Dowd & Ritter, 2006), and ensured greater accuracy for

YouTube captions. Students labeled all visual images in their videos and were encouraged to include translated labels in their partners' home language.

3.5. Data Collection and Instruments

The qualitative data collected for this study include the following classroom assignments: critical reflections, comparative intercultural exchange, SDG critical inquiry materials, videos, and transcripts.

3.6. Data Analysis

The first author hosted the second author as a visiting scholar, collaborating in person to code the qualitative data employing Braun and Clarke's (2006) thematic analysis. Initially, all data were translated into English and Turkish, and authors coded the entire data set to generate lists of initial ideas, achieving 100% interrater reliability. Second, the researchers used a semantic approach (Patton, 2015) to create a coding scheme based on the Asia Society's (2008) global competencies and Barrett's (2018) intercultural competencies frameworks (Appendix A). The codes were then sorted into possible themes, adjusted according to relevant data, and examined for relationships. In the fourth step, themes and examples were reviewed across the entire data set. Finally, themes and definitions were refined using precise, descriptive language and illustrative examples (Appendix B).

4. Findings

Presenting SDG and intercultural exchange videos as assignments aims to assess students' global and intercultural competencies. This approach evaluates their critical examination of global issues, recognition of external influences on perspectives, and intercultural communication. Data analysis revealed five salient themes across American and Turkish teacher candidates, each described below.

4.1. Centering on the Self

The theme highlights students' reflection on developing intercultural and global competencies through their identities, experiences, and relationships with the assignments. It aligns with GCE's *socio-emotional* domain (UNESCO, 2015), *recognizing perspectives* (Asia Society, 2008) and *knowledge and critical understanding of the self* (Barrett, 2018). American and Turkish students noted

challenges in articulating identities, the impact of global connections, and self-discovery.

American students stated that they had not thought deeply about themselves and their culture before and were reluctant to share them with others. One teacher candidate talked about the difficulty of reflecting on himself and going deeper into his own consciousness:

> The most challenging part of the intercultural video project was reflecting on myself.... it was difficult to have to look internally ... and analyze some subconscious choices and parts of myself I did not even realize were there. It was therapeutic in a way, but as with all therapy, it was no easy feat.

Another U.S. student stated that he had difficulty completing the project and avoided sharing the characteristics that he thought constituted his personal identity:

> I normally don't talk about my identities in this much detail, especially to strangers, but there was something cathartic about it. Most of the time, I can go under the radar when it comes to discussing some of the realities of my personal life. Being a gay, half-black, orphan isn't something I normally talk about. What I learned about myself was that these things that I always try to avoid should be part of the conversation.

Turkish students, like American students, stated that they realized with this project how foreign they were to their personal identities. For example, one student shared,

> I realized that I had a hard time talking about myself in the video introduction. I learned that I am a stranger to myself. This question helped me learn about my personality and discover myself. I congratulate myself for having the courage to talk about myself and still talking about myself, even though I have difficulty expressing myself.

While his student expressed a sense of accomplishment in overcoming the challenge of investigating and expressing one's identity, they also demonstrated critical aspects of intercultural competence: (re)negotiating and (re)constructing identities (Collier, 2003) and perspective consciousness and reflexivity (Andreotti, 2006; Hauerwas et al., 2021). One Turkish student emphasized the importance of providing insight into their identity,

> I had never thought about the elements that shape my identity in such detail before I joined this project; I thought I knew myself. I questioned my cultural identity for the first time thanks to this study. This has been a very valuable experience for me.

The reflection process increased awareness of the importance of personal beliefs, social practices, and culture in shaping lives. Turkish students, in particular, realized the significant role of religion in their identities. One student said, "I learned that religious categories are important in our lives." In addition, reflective assignments contributed to teacher candidates' personal identities and experiences and created insight into global issues.

4.2. Expanding Perspectives of Identity, Culture, and Global Issues

This theme illustrates how teacher candidates expanded their perspectives on critical inquiry and intercultural communication, challenging to affirming existing beliefs and broadening their understanding of local and global issues (Hauerwas et al., 2021). The theme aligns with GCE's *cognitive* and *socio-emotional* domains (UNESCO, 2015), global competencies of *investigate the world* and *recognize perspectives* (Asia Society, 2008), and *knowledge and critical understanding of the self* (Barrett, 2018). Critical inquiry structured by educators played an important role in broadening students' perspectives, strengthening intercultural communication, and deepening their understanding of global issues. The emphasis on personal reflections, cultural awareness, and the impact of technology was consistent for both Turkish and American students.

Participants compared cultural norms and practices with their partners, noticing similarities and differences (Boix Mansilla & Chua, 2016). Exploring cultural traditions, religious practices, and family structures provided a deeper understanding of each other's backgrounds. For example, an American student shares his thoughts on identity and cultural awareness,

> He and his whole family are Muslim and practice it very seriously, while I grew up as a Christian and don't go to church or anything very often. We both practice religion; it is just in different forms.

A Turkish student reflected, "I realized whether the things we do as daily rituals are cultural or religious," emphasizing the importance of understanding their cultural background and recognizing cultural diversity.

Understanding global issues and the interconnectedness of worldwide issues was highlighted in the context of global citizenship and competencies in students' reflections (OECD, 2018; UNESCO, 2015). A Turkish student expressed this experience as follows:

> Before starting the project, I guessed that my own country was behind in the global rankings, especially in terms of gender equality... I was surprised at how serious the discrimination was on a global scale in all the areas that women experienced because of their gender... Until now, I had never examined reports, news, or scientific publications on a global scale. I realized that I had mostly looked at issues from a national perspective.

The intercultural communication requirements of the assignments encouraged candidates to take a holistic view of environmental problems, going beyond regional biases in environmental studies. To illustrate, an American student stated the following about the broadening of her perspective on coral reef bleaching:

> ... I failed to think about how reefs might be affected differently in other locations... I knew basic information about the [Great Barrier] reef, but all the statistics I learned were astounding and helped me realize just how much knowledge I had been neglecting in my studies. Now I am better suited to look at such situations holistically and not so one-sided.

Interacting with partners also provided insights into cultural nuances and contributed to a deeper understanding of different perspectives, helping to dispel stereotypes (Levrau & Loobuyck, 2013). For example, an American student said:

> My partner discussed in their video that being Turkish was a big portion of their personal identity and was of great importance. I on the other hand do not find that being from the US is a big portion of my personal identity, but rather a very minimal one.

Similarly, a Turkish teacher candidate stated:

> In terms of culture... family does not only consist of parents, grandparents, as it does for them. As far as I can see, their family is the nuclear family, and the rest of their social circle is the social group they call "community" in their emails and videos. So, I can infer that they have community ties instead of our kinship ties.

Students emphasized technology's role in enhancing intercultural communication and understanding. Despite time zone differences between Türkiye and the U.S., technology connected them globally, demonstrating its importance through the COIL opportunity (Kopish & Marques, 2020; Hauerwas et al., 2023; Ullom, 2017). As students engaged in intercultural communication asynchronously via emails and videos, one Turkish student commented, "I learned that language is not actually a problem and that developing technology has eliminated the language problem between people." Similarly, an American student said, "with the use of platforms such as Google Translate, language barriers have been overcome with technological tools," emphasizing the role of technology in global and intercultural communication.

4.3. Increased Awareness of Power

This theme examines how power influences identity formation, cultural attributes, and global issues. It aligns with GCE's *cognitive* domain (UNESCO, 2015), *investigate the world* (Asia Society, 2008), and Barrett's (2018) intercultural competencies of *knowledge and critical understanding of the self* and *analytical and critical thinking skills*. The authors anticipated this power-related theme to emerge from students' reflections. The third phase of the SDG critical inquiry project explored 'power and types of power' to provide a multifaceted perspective on personal, cultural, and global issues, highlighting causes and the roles of various actors (Andreotti et al., 2016; Stein et al., 2016).

Turkish and American students offered reflections, stating that they encountered examining power for the first time and had difficulty at this project stage. An American student said, "I had never been introduced to this subject before, and I found thinking about it and trying to come up with examples harder than I thought." A Turkish student said,

> Defining power was both important and difficult for me. Because I had never thought about or noticed the difference between the power that we internalize so much in our daily lives. I had never actually thought about these types of power.

As difficult as this phase was for them, it was part of increasing awareness about power dynamics and their impact on identity, culture, and global issues.

In the words of a Turkish student, "what power is behind the curtain?" Based on this, they emphasized the level of understanding of the impact of

power in shaping policies and the role of international organizations. A U.S. teacher candidate reflected on the United Nations as an international organization:

> I worry that students might believe that the United Nations as a multi-national organization is anything other than a US-controlled and symbolic but ultimately spineless organization. When we think of food waste, we think of the poor. We do not think of what goes on behind closed doors when politicians hold the fate of those who do not have access to fresh food.

An American student described what lies behind the curtain in the creation of environmental policies by stating,

> I think it helped me understand the view of big business better--as the project went on I began to understand the pragmatism that makes the destruction of the environment and countless people's lives justifiable to some.

A student reflected on the awareness of the need to explore beyond superficial perspectives within the scope of the impact of power on identity, culture, and global issues and the connection between personal experiences and global issues as follows:

> It made me think about which power holders are influential and to what extent policies are created. It made me realize what kind of tools those in power use to create perceptions among citizens. I gained a critical perspective… I now realize that there may be other facts or justifications behind an action that seems good.

4.4. Empathetic Perspective-Taking

This theme underscores students' need for empathy in critical thinking and advocacy and considering how others receive information or are affected by change. The theme aligns with UNESCO's (2015) *socio-emotional* domain of GCE and Asia Society's (2008) global competency of *recognize perspectives*. It also aligns with several intercultural competencies from Barrett's (2018) framework, including *knowledge and critical understanding of the self*, *openness to cultural otherness and to other beliefs*, *worldviews and practices*, *respect for other people and for other beliefs, worldviews, and practices*, and *empathy*. Students highlighted developing empathy in intercultural interactions and

understanding SDG targets. They acknowledged that through COIL, cultural exchange and collaborative videos fostered diverse perspectives.

A Turkish student emphasized that he sees the expansion of empathic perspectives resulting from intercultural interaction as overcoming foreign prejudice and eliminating language barriers, with the following example:

> ... I realized that we are not different from each other. It was a good event in terms of removing prejudices against foreign people. It helped me overcome my language phobia... I gained the courage to communicate with different people in different parts of the world.

An American student reflected that the idea that everyone can communicate in English has changed with this project and the difference in perspective on foreign languages:

> I had never thought about having viewers that did not speak English so doing this... helped me adjust my style so that others can understand more of what I am saying. The project also helped me learn that I can communicate even with a language barrier using tools of technology.

An American student, who reflected on the issue of hunger regarding the importance of gaining an empathetic perspective in personal development and global competence, expressed his reflection strikingly as follows:

> The project made me realize the importance of putting myself in the shoes of different communities and situations to understand that just because I personally do not have an issue with something like hunger, doesn't mean that it isn't a prominent issue in our communities all over the country. Though I was capable of doing this before the project, the project has certainly given me good practice for putting myself in the shoes of others and understanding their perspective.

American and Turkish students reported their critical thinking and empathy toward the target audience in problem-solving during the SDG project action phase would enhance global issue engagement. A student emphasized the necessity of understanding diverse perspectives as a requirement for coexisting in various geographies and highlighted empathy's role in developing effective global citizenship:

> I learned to understand other people's perspectives and empathize with those people. The search for common solutions made me feel like a world citizen. It improved my ability to have global empathy by considering the effects of climate change on all people from a multifaceted perspective.

4.5. Goal Setting for Effective Communication

The theme highlights the importance of students communicating effectively across diverse audiences. It aligns with the global competency of *communicate ideas* (Asia Society, 2008) and the following intercultural competencies: *knowledge and critical understanding of language and communication, skills of listening and observing, flexibility and adaptability, and linguistic, communicative and plurilingual skills* (Barrett, 2018). Instructors provided Turkish and American students opportunities to learn about different cultures and enhance their global knowledge and skills through interaction and learning from diverse individuals. The goal was to promote intercultural dialogue and develop students' intercultural communication skills (Awada & Gutiérrez-Colón, 2019).

Almost all Turkish and American students were worried about communicating in different languages. Still, they considered it successful because translation services like Google Translate enabled intercultural communication through technology. As one student shared:

> My biggest accomplishment is meeting somebody from a different background and effectively communicating with them during a pandemic over the Internet... Things such as translation became easier due to the use of technology like Google Translate.

Students described this intercultural experience as a practice that encourages them to rethink their place and identity within their culture (Collier, 2003), and they mentioned that they felt this situation especially clearly in the intercultural video assignment. One student shared:

> It was a success to be able to objectively explain my identity and the social elements that constitute this identity while introducing myself to someone who does not know me at all and has no knowledge of my culture... the video consisted of elements that I had not thought about before. I constantly asked myself why.

Students who wanted to communicate effectively during the intercultural interaction process and be understood correctly by their partners took care to be selective (i.e., more images and understandable language) in the videos they prepared. As an indication of the value they place on effective communication,

> … it had to be effective with information, but not too wordy that my words got lost in translation. This wasn't a negative however. I think that this taught me an important skill of being open to learning and changing even if it is uncomfortable.

In addition, some students stated that asynchronous interaction via e-mail was effective because "it way less stressful than looking across each other on a screen and asking serious questions." However, students also expressed a desire for social interaction to improve the exchange, "I would consider finding a synchronous part where the students and partners could interact with one another and at least be able to see the face of their partner." These reflected views underline that the desire to develop intercultural and global competence is only possible with goal-oriented effective communication.

5. Concluding Discussion

Consistent with previous research, this study's findings suggest that teacher candidates found the COIL approach to virtual exchange affirming in developing intercultural and global competencies (Arndt et al., 2021; Baroni et al., 2019; Hauerwas et al., 2023; Hur et al., 2020; O'Dowd, 2020; Ullom, 2017). Scholars emphasize the significance of designing virtual exchange to promote purposeful student engagement (O'Dowd & Dooly, 2020) and achieve various intercultural and global competencies (Arndt et al., 2021; O'Dowd, 2020; Ullom, 2017). A robust, evidence-based set of global pedagogies - critical inquiry through teaching diverse content and multiple perspectives and intercultural explorations - supported the course design and assignments, suggesting new research avenues for developing global and intercultural competencies among teacher education students across disciplines.

This study contributes to COIL and GCE in teacher education literature by demonstrating that students broadened their understanding of intercultural and global issues and power dynamics and engaged in critical thinking, comparative analysis, and perspective-taking. It illuminated students' strategic thinking in expressing ideas and maintaining communication across cultural,

geographic, and linguistic differences. Developing cognitive and socio-emotional domains of GCE has significant implications for teaching in diverse, interconnected societies. Future research should explore how these experiences and tools of GCE transfer into teaching practices. Key areas include fostering empathy and linguistic sensitivity, leveraging technologies in plurilingual classrooms, designing intercultural learning experiences, and developing partnerships for real-world contexts GCE learning opportunities.

5.1. Limitations

This research, like all studies, has limitations that merit discussion. First, the study focuses solely on COIL virtual exchange experiences among participants from two universities. Most research in this area consists of small-scale projects conducted over short periods (Dooly & Vinagre, 2022); a larger sample of students or a longitudinal study may yield different results. Second, the data analyzed were sourced from students' shared assignments, including self-report data from critical reflections and other activities. This raises two concerns. First, scholars argue that self-report data on complex concepts (i.e., global and intercultural competencies) may be influenced by social desirability bias (Kopish & Shahri, in press) or as a way to show one's self more favorably and aligned to what the instructors want to hear (Merino & Tileaga, 2011). Second, scholars suggest a mixed methods approach in research to address complex or contested concepts such as global and intercultural competencies and measure potential learning gains (Deardorff, 2006; Dooly & Vinagre, 2022; Godwin-Jones, 2019).

When designing COIL exchange activities options include placing students in teams for collaborative projects and tasks (Arndt et al., 2021; Baroni et al., 2019; Hauerwas et al., 2023; Hur et al., 2020) or matching students in one-to-one collaborations (King Ramirez, 2020). In this study, unequal enrollments led to pairing two (or three) U.S. students with one Turkish student. Researchers adhered to recommendations for asynchronous exchanges to accommodate differences, using pre-recorded videos and text-based communication to ensure inclusivity and address technological disparities (O'Dowd, 2023; Villar-Onrubia & Rajpal, 2016; Wimpenny et al., 2018). Asynchronous communication activities helped address the linguistic gap (Turkish/English), digitalization gap (access to technology and bandwidth), and structural gap (curricular flexibility, access to facilities with videoconference technology; O'Dowd, 2023). However, the lack of

one-to-one pairings revealed challenges such as limited digital competencies, scheduling issues, and workload inequities, which may have affected learners' motivation and expectations (O'Dowd, 2018; O'Dowd & Ritter, 2006). Notwithstanding these limitations, this study provides practical, evidence-based strategies to develop global and intercultural competencies through COIL virtual exchange in teacher education programs.

5.2. Implications and Recommendations for Practice

Developing teacher candidates' intercultural and global competencies for the 21st century is imperative (CAEP, 2013; GEFI, 2021; Kirby & Crawford, 2012; OECD, 2018; UNESCO, 2015). Based on the researchers' experiences, they offer four recommendations to support future endeavors. First, while virtual exchange can foster innovation and intercultural creativity (Arndt et al., 2021), it must not perpetuate Euro-Western intellectual colonization (Madrid Akpovo & Nganga, 2018). Instructors should understand each other's cultural and institutional contexts and collaborate to co-design the exchange. Second, although organizing COIL exchanges is complex and time-consuming (O'Dowd, 2011; 2013), starting early, co-planning, revising often, and responding to feedback are essential. The researchers acknowledge that designing robust intercultural learning experiences is complex and takes significant time but yields high returns in students' development of global and intercultural competencies. Third, instructors must model global and intercultural competencies for teacher candidates (Hauerwas et al., 2023), demonstrating how to work across cultural, linguistic, and geographical differences. Finally, time and space should be created for self-reflexive activities that promote critical reflection (Deardorff, 2009). Thoughtfully designed, research-informed virtual exchanges uniquely enable teacher candidates to develop global and intercultural competencies.

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Appendix A: Semantic Codes Aligned with Theoretical Frameworks

GCE (UNESCO, 2015)	Global Competencies (Asia Society, 2008)	Intercultural Competencies (Barrett, 2018)		Sample Codes
Cognitive	Investigating the World	**Knowledge and critical understanding** Knowledge and critical understanding of culture, cultures, and religions		• Broadening (new) perspectives (about research – how to do it effectively) and (about self – one's relationship with the SDG and its issues) • Assumptions about subject/topic – confirmed or challenged previously held beliefs • Expanded awareness about the issue (identity and influences of culture) • Understanding issues at local/global levels • Thought about self, learning about self, self-awareness • Recognizing identities (one's influences for how they view the issue) • Corroborating evidence (analyze evidence to construct responses)
		Skills Analytical and critical thinking skills		
Socio-Emotional	Recognize Perspectives	**Knowledge and critical understanding** Knowledge and critical understanding of the self		• Awareness of power (how power affects issuers not thought about) • Analysis of power extended to and applied in daily life • Perspective taking for empathy (empathy for critical thinking – how to frame and address the issue) and (empathy for advocacy – how to consider the people who might be affected by change) • Analyze power moved beyond superficial to the root cause – the origins of the problems
		Values Valuing human dignity and human rights Valuing cultural diversity		
		Attitudes Openness to cultural otherness and to other beliefs, worldviews, and practices Respect for other people and for other beliefs, worldviews, and practices Self-efficacy Tolerance of ambiguity		
		Skills Empathy		
Not explicitly articulated in UNESCO's (2015) framework	Communicate Ideas	**Knowledge and critical understanding** Knowledge and critical understanding of language and communication		• Broaden perspectives (how to communicate and frame ideas) • Transform data to communicate effectively (procedural – select and use tech and media to communicate) • Leverage technologies for language – the goal of respectful connections (tone of the communication) • Recognize and express how diverse audiences perceive • Listen to and communicate effectively • Justifies effective communication to foster understanding • Self-reflect on how to communicate effectively
		Skills Skills of listening and observing Flexibility and adaptability Linguistic, communicative, and plurilingual skills		
Behavioral	Take Action	Not explicitly articulated in Barrett's (2018) framework		• Motivation and desire • Engaging in the process inspired ideas for how to take action • Viewing others' work inspired a sense of collective change • Action choice based on the urgency of the issue • Action not for TC but for students in the future

Appendix B: Thematic Coding Table

Theme	Definition	Quote	Alignment to Frameworks	Total Passages
Centering on the self	Represented how candidates reflected on their learning and development of intercultural and global competencies based on their identities, experiences, and relationships with the assignments.	I learned that I am a stranger to myself… I questioned my cultural identity for the first time thanks to this study…	**GCE** Socio-emotional **Global Competencies** Recognize perspectives **Intercultural Competencies** Knowledge and critical understanding of the self	12 American 22 Turkish
Expanding perspectives of identity, culture, and global issues	Demonstrated ways teacher candidates broadened new perspectives about research and intercultural communication, confirmed or challenged previously held beliefs, and expanded awareness of the scope and scale of local and global issues.	These inequality situations, especially those experienced in many countries that we have enlarged in our perception, were surprising to me...	**GCE** Cognitive Socio-emotional **Global Competencies** Investigate the world Recognize perspectives **Intercultural Competencies** Knowledge and critical understanding of the self	34 American 28 Turkish
Increased awareness of powers	How powers affect the formation of identity, the attributes of culture, and the causes and consequences of global issues.	I think it helped me understand the view of big business better--as the project went on I began to understand the pragmatism…	**GCE** Cognitive **Global Competencies** Investigate the world **Intercultural Competencies** Knowledge and critical understanding of the self Analytical and critical thinking skills	8 American 12 Turkish
Empathetic perspective-taking	Expressed the need for empathy in critical thinking and advocacy as one needs to consider how people may receive and interpret information or be affected by change.	I was able to understand other people's perspectives and empathize with those people.	**GCE** Socio-emotional **Global Competencies** Recognize perspectives **Intercultural Competencies** Knowledge and critical understanding of the self Openness to cultural otherness and to other beliefs, worldviews, and practices Respect for other people and for other beliefs, worldviews, and practices Empathy	12 American 15 Turkish
Goal setting for effective communication	Refers to the value students place on ensuring their ideas are communicated effectively across diverse audiences.	I think that this taught me the important skill of being open to learning and changing even if it is uncomfortable…	**Global Competencies** Communicate Ideas **Intercultural Competencies** Knowledge and critical understanding of language and communication Skills of listening and observing Flexibility and adaptability Linguistic, communicative, and plurilingual skills	20 American 14 Turkish

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