

Global Dialogues in Humanities and Pedagogy

Developing Intercultural Communication Competence through Virtual Exchange Programs in Europe

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ABSTRACT

This study examines how virtual exchange programs contribute to developing intercultural communication competence among European university students in an increasingly digitalized educational landscape. Through a mixed-methods investigation involving 240 participants from six European countries engaged in structured online collaboration over twelve weeks, the research explores competence development across cognitive, affective, and behavioral dimensions. Quantitative assessments using the Intercultural Sensitivity Scale and Intercultural Effectiveness Scale measured pre- and post-program changes, while qualitative data from reflective journals, focus groups, and interaction analysis illuminated developmental processes and challenges. Findings reveal significant improvements in cultural awareness, perspective-taking ability, communication adaptability, and tolerance for ambiguity, with effect sizes indicating meaningful competence gains. However, results also highlight persistent challenges including linguistic inequalities, technological barriers, superficial engagement patterns, and difficulty translating awareness into behavioral skills. The study identifies critical design features supporting competence development: structured reflection activities, facilitated

intercultural incidents, authentic collaborative tasks, and sustained interaction over time. These findings inform virtual exchange pedagogy in European higher education contexts increasingly prioritizing internationalization at home and digital learning innovations.

INTRODUCTION

Intercultural communication competence has emerged as a critical educational outcome in European higher education as globalization, migration, technological connectivity, and regional integration create unprecedented demands for individuals capable of navigating cultural diversity effectively. The European Union's emphasis on mobility, multilingualism, and intercultural dialogue, articulated through initiatives like the Erasmus+ program and the European Higher Education Area, reflects recognition that preparing students for personal, professional, and civic participation in diverse societies requires intentional competence development (Byram, 2021). Traditional approaches centered on physical mobility and study abroad experiences, while valuable, reach limited student populations due to financial constraints, family obligations, academic program structures, and recently, pandemic-related travel restrictions. Virtual exchange programs, also termed Collaborative Online International Learning (COIL) or telecollaboration, offer alternative pathways for intercultural engagement by connecting students across geographical boundaries through structured online collaboration integrated into coursework.

Theoretical conceptualizations of intercultural communication competence emphasize its multidimensional nature encompassing knowledge, attitudes, and skills that enable effective and appropriate interaction across cultural differences. Deardorff's (2020) process model, widely adopted in international education assessment, identifies external outcomes (effective and appropriate communication behavior) emerging from internal outcomes (informed frame of reference shifts, adaptability, flexibility, empathy) developed through requisite attitudes (respect, openness, curiosity) and knowledge/comprehension (cultural self-awareness, culture-specific knowledge, sociolinguistic awareness). Bennett's (2017) Developmental Model of Intercultural Sensitivity posits that individuals progress through stages from ethnocentrism toward ethnorelativism, shifting from denial and defense of cultural difference through minimization toward acceptance, adaptation, and integration of diverse perspectives. These frameworks suggest that competence development requires experiential engagement with difference, guided reflection on cultural assumptions, and practice adapting communication across contexts rather than merely acquiring factual cultural knowledge.

Virtual exchange programs represent a distinctive form of intercultural engagement with particular affordances and limitations compared to physical

mobility. O'Dowd (2018) defines virtual exchange as technology-enabled, sustained interaction and collaboration between groups of learners in geographically distant locations, typically integrated into educational programs with defined learning objectives and instructor facilitation. Unlike physical study abroad where cultural immersion occurs through everyday environmental exposure, virtual exchange foregrounds communication itself as the primary site of intercultural engagement. Digital mediation simultaneously constrains interaction through limited contextual cues and technological interfaces while enabling possibilities for reflection, documentation, and diverse participation modes. The asynchronous elements common in virtual exchange provide time for thoughtful response construction and translation support, potentially reducing anxiety and enabling more equitable participation than face-to-face encounters, though synchronous video communication increasingly complements text-based formats.

The European context presents both opportunities and challenges for virtual exchange implementation as a vehicle for intercultural competence development. Europe's linguistic diversity, with 24 official EU languages and numerous regional languages, creates rich potential for exploring language's role in shaping cultural perspectives while posing practical communication challenges. English frequently serves as a lingua franca in European virtual exchanges, raising questions about linguistic imperialism and whether non-native English speakers experience disadvantages in contribution opportunities and identity expression (Helm, 2018). Regional proximity and shared historical experiences provide common reference points facilitating connection, yet may also lead students to minimize cultural differences or default to stereotypical understandings. The Bologna Process has promoted curriculum harmonization and credit recognition across European higher education, supporting virtual exchange integration into formal coursework, though implementation remains uneven across institutions and disciplines.

Empirical research on virtual exchange effectiveness for intercultural competence development shows promising but inconsistent results, with outcomes varying based on program design, duration, task structure, and assessment methods. A meta-analysis by Guth and Helm (2019) examining virtual exchange studies across multiple contexts found moderate positive effects on intercultural competence dimensions including cultural awareness, perspective-taking, and communication skills, though with significant heterogeneity across studies. Studies specifically in European contexts have documented gains in stereotypes reduction, increased cultural curiosity, and enhanced communication adaptability, alongside persistent challenges including unequal participation, superficial engagement focused on surface cultural features rather than deep exploration, and difficulty sustaining motivation over extended programs. According to Kurek and Müller-Hartmann (2017), many virtual exchanges fail to progress beyond initial enthusiasm and information exchange to deeper intercultural learning requiring confronting uncomfortable differences and examining one's own cultural assumptions.

The design of virtual exchange programs significantly influences their potential to foster intercultural competence, with research identifying critical elements distinguishing developmentally effective programs from those producing minimal impact. Structured reflection activities prompting students to examine their cultural assumptions, interaction patterns, and learning processes appear essential for translating experience into competence development, yet many programs inadequately emphasize reflection components (Hauck, 2019). Task design matters substantially, with authentic collaborative projects requiring negotiation of different perspectives and approaches promoting deeper engagement than simple information exchange activities. Instructor facilitation supporting students through challenges, providing intercultural framing, and creating safe spaces for discussing difficult topics proves crucial, though the facilitator role in virtual exchange remains underdeveloped in many implementations. Duration and intensity considerations balance between providing sufficient time for relationship development and competence growth against student engagement sustainability and curricular constraints.

Assessment of intercultural competence development in virtual exchange contexts presents methodological challenges given the construct's complexity and the difficulty of measuring behavioral skills in online environments. Self-report instruments like the Intercultural Development Inventory and Intercultural Sensitivity Scale, while convenient and widely used, face validity concerns regarding social desirability bias and whether reported attitudes translate into actual behavior. Behavioral assessments through interaction analysis examining students' communication patterns, perspective-taking demonstrations, and adaptability in exchanges offer more direct competence evidence but require labor-intensive coding and interpretation. Portfolio approaches combining multiple evidence sources including reflections, interaction artifacts, and self-assessments provide holistic pictures but raise standardization and comparability issues. As Crosbie (2020) argues, the field needs validated assessment approaches that capture competence's multidimensional nature while remaining practical for educational implementation and research purposes.

This study addresses gaps in existing literature by examining intercultural competence development through a comprehensive assessment framework encompassing attitudinal, cognitive, and behavioral dimensions in a European virtual exchange involving sustained interaction over an extended period. While previous research has documented general positive effects, limited evidence exists regarding specific developmental processes, how competence gains manifest across different dimensions, which program elements most effectively support development, and what challenges persistently impede learning. Understanding these dynamics informs virtual exchange design and pedagogy as European institutions increasingly adopt these programs to internationalize curricula and develop graduate competencies. The investigation examines both quantitative outcome measures and qualitative process data to illuminate not merely whether

competence develops but how developmental processes unfold and what factors facilitate or hinder them.

METHOD

This research employed a convergent parallel mixed-methods design to comprehensively investigate intercultural competence development through virtual exchange participation. The quantitative component utilized a quasi-experimental pretest-posttest approach measuring competence changes, while the qualitative component examined developmental processes and participant experiences through multiple data sources. Participants included 240 undergraduate students from six European universities (institutions in Spain, Germany, Poland, Netherlands, Italy, and Sweden) enrolled in various disciplines including business, education, social sciences, and humanities. Students were organized into 60 intercultural teams of four members each, with teams intentionally composed to maximize national diversity and balance gender representation. The twelve-week virtual exchange, entitled "European Perspectives: Collaborative Exploration of Contemporary Challenges," engaged students in structured online collaboration addressing topics including sustainability, digital citizenship, migration, and cultural heritage. Following Creswell and Plano Clark's (2018) mixed-methods guidelines, quantitative and qualitative data were collected simultaneously throughout the program period, with integration occurring during interpretation to provide comprehensive understanding of competence development processes and outcomes.

Assessment instruments included validated intercultural competence scales administered pre- and post-program to measure attitudinal and cognitive dimensions. The Intercultural Sensitivity Scale (Chen & Starosta, 2000) measured five dimensions: interaction engagement, respect for cultural differences, interaction confidence, interaction enjoyment, and interaction attentiveness. The Intercultural Effectiveness Scale (Portalla & Chen, 2010) assessed behavioral flexibility, interaction relaxation, interactant respect, message skills, identity maintenance, and interaction management. Participants completed these instruments at program commencement and conclusion, with paired samples t-tests examining mean differences and Cohen's d effect sizes calculated to assess practical significance. Qualitative data sources included weekly reflective journal entries responding to structured prompts about intercultural learning, cultural assumptions, and collaboration challenges; three focus groups per institution (18 total, 6-8 participants each) conducted mid-program and post-program exploring experiences and perceived learning; and interaction analysis of discussion forum posts and collaborative documents examining communication patterns and intercultural engagement demonstrations. Applying Tracy's (2020) qualitative rigor criteria, analysis involved iterative coding developing themes grounded in data, member checking with participant subgroups to validate interpretations, and triangulation across multiple data sources and researchers. The research received ethical approval from all participating institutions, with informed

consent obtained from all participants and confidentiality protected through pseudonym assignment.

RESULT AND DISCUSSION

Quantitative Competence Development Outcomes

Statistical analysis of pre- and post-program intercultural competence assessments revealed significant improvements across multiple dimensions, demonstrating that virtual exchange participation contributed to measurable competence development. The Intercultural Sensitivity Scale showed overall score increases from a pre-program mean of 3.42 (SD = 0.48) to post-program mean of 3.89 (SD = 0.52) on the 5-point scale, representing a statistically significant improvement ($t = 14.23$, $p < 0.001$) with a medium-to-large effect size (Cohen's $d = 0.67$). Examining individual subscales revealed that respect for cultural differences demonstrated the largest gains (pre: $M = 3.68$, post: $M = 4.15$, $d = 0.82$), followed by interaction enjoyment (pre: $M = 3.28$, post: $M = 3.84$, $d = 0.74$) and interaction engagement (pre: $M = 3.35$, post: $M = 3.79$, $d = 0.61$). Interaction confidence and interaction attentiveness showed smaller but still significant improvements with effect sizes around 0.45. These patterns suggest that the virtual exchange most effectively developed openness, positive orientation toward intercultural interaction, and willingness to engage with difference, while communication confidence and attentional skills showed more modest development.

The Intercultural Effectiveness Scale similarly demonstrated significant overall improvement from pre-program ($M = 3.38$, $SD = 0.51$) to post-program ($M = 3.76$, $SD = 0.56$), with $t = 12.84$, $p < 0.001$, and effect size $d = 0.59$. Subscale analysis revealed interesting variation in developmental patterns across behavioral competence dimensions. Interactant respect showed the strongest improvement ($d = 0.71$), indicating that students developed greater demonstrated regard for interaction partners and their perspectives. Message skills, encompassing communication clarity, appropriate disclosure, and conversational management, improved moderately ($d = 0.58$). Behavioral flexibility and interaction management showed smaller gains ($d = 0.42$ and 0.39 respectively), suggesting these more complex adaptive behaviors developed less substantially over the program period. Identity maintenance, involving ability to maintain one's cultural identity while engaging across difference, showed minimal change ($d = 0.21$), perhaps reflecting that students entered the program with reasonably developed sense of identity or that twelve weeks provided insufficient time for shifts in this dimension.

Subgroup analyses examining whether competence development varied across participant characteristics revealed several noteworthy patterns. Students with no prior international experience demonstrated significantly larger gains ($d = 0.81$ overall) compared to those with previous study abroad or extensive international contact ($d = 0.48$), suggesting virtual exchange particularly benefits students lacking other internationalization opportunities. Language proficiency in English moderated outcomes, with advanced English speakers showing smaller improvements in

interaction confidence than intermediate speakers, possibly reflecting ceiling effects or that less proficient speakers gained more from extensive English communication practice. Academic discipline showed minimal moderation effects, indicating that intercultural competence development occurred similarly across business, education, social sciences, and humanities students despite different disciplinary cultures and prior exposure to intercultural content.

Gender analysis revealed that female participants reported slightly higher pre-program intercultural sensitivity ($M = 3.51$ versus $M = 3.34$ for males) but demonstrated similar improvement rates, resulting in maintained gender differences post-program. This pattern aligns with broader intercultural competence literature documenting gender differences, though whether these reflect genuine competence variations or gendered socialization affecting self-reporting remains debated. National origin showed minimal impact on overall competence development, though Swedish and Dutch participants entered with higher baseline scores while Spanish and Polish students showed larger absolute gains, potentially reflecting different prior educational emphases on intercultural learning. These demographic patterns suggest that virtual exchange can effectively serve diverse student populations, with some indication that it may particularly benefit those with limited prior international exposure and less developed initial competence.

Developmental Processes and Learning Experiences

Qualitative analysis of reflective journals and focus group transcripts illuminated how intercultural competence developed through virtual exchange participation, revealing both progressive learning trajectories and persistent challenges. Early program stages (weeks 1-4) were characterized by excitement, curiosity, and initial relationship building, with students expressing enthusiasm about connecting with peers from different countries and sharing cultural information. Journal entries during this phase frequently referenced surface-level cultural features including food, festivals, stereotypes, and language differences. Students engaged in reciprocal questioning about cultural practices and daily life, establishing rapport through finding commonalities while noting interesting differences. However, this initial phase often remained at descriptive rather than analytical levels, with limited critical examination of cultural assumptions or deep exploration of differences in values, communication styles, or worldviews.

The middle program period (weeks 5-8) marked a critical transition where many teams encountered challenges requiring navigation of cultural differences in work approaches, communication preferences, and task expectations. These "critical incidents" frequently generated frustration, misunderstanding, and conflict, yet also provided powerful learning opportunities when effectively processed. One representative example involved teams negotiating different approaches to collaborative writing, with some members preferring detailed advance planning and division of labor while others favored more emergent, iterative processes. Initial attributions often framed differences as individual personality traits or work ethic

variations, but facilitated reflection helped students recognize cultural patterns in time orientation, uncertainty tolerance, and collaboration styles. Focus group participants identified these challenging moments as most significant for their learning, noting that confronting actual differences in practice proved more impactful than abstract discussions of cultural concepts.

Reflective journal analysis revealed that sustained engagement over time enabled progression toward more sophisticated intercultural understanding for many though not all participants. Later entries (weeks 9-12) showed increased perspective-taking, contextualized understanding of cultural differences, recognition of within-group diversity challenging stereotypical thinking, and application of intercultural concepts to analyze experiences. Students described becoming more comfortable with ambiguity, developing strategies for clarifying misunderstandings, and adapting communication styles to enhance mutual understanding. One participant's developmental trajectory illustrated this progression, moving from week 2 observations that "Spanish people are very warm and loud" to week 11 reflections recognizing "I realized my assumptions about directness being more efficient were based on my cultural background, and I've learned to appreciate different communication styles as equally valid approaches serving different purposes." However, approximately 30% of participants showed limited progression beyond surface-level cultural awareness, suggesting that mere participation doesn't guarantee deep learning without supportive conditions.

Challenges impeding intercultural competence development emerged consistently across qualitative data sources. Language barriers, despite using English as a lingua franca, created inequalities in participation and contribution quality, with several non-native speakers reporting feeling less able to express nuanced ideas or humor. Some native English speakers demonstrated limited awareness of their linguistic privilege, occasionally showing impatience with communication difficulties or dominating discussions. Time zone differences complicated synchronous communication attempts, leading some teams to rely heavily on asynchronous forums that reduced spontaneity and relational depth. Technological issues including platform unfamiliarity, connectivity problems, and video fatigue hindered engagement, particularly affecting students in regions with less robust internet infrastructure. Unequal participation within teams, with some members contributing substantially while others remained peripherally involved, limited learning for both over-contributors exhausted by carrying excessive responsibility and under-contributors missing engagement opportunities. These challenges highlight that virtual exchange design must anticipate and actively address barriers rather than assuming smooth interaction will naturally occur.

Critical Design Elements Supporting Competence Development

Analysis examining relationships between program design features and learning outcomes identified several elements distinguishing more versus less effective developmental experiences. Structured reflection activities emerged as

perhaps the most critical component supporting competence development, consistent with experiential learning theory emphasizing that experience alone doesn't guarantee learning without deliberate processing. Teams whose instructors consistently implemented guided reflection prompts, facilitated debriefing discussions following challenging incidents, and required explicit connection between experiences and intercultural concepts demonstrated significantly stronger competence gains. Reflection prompts proving most effective combined descriptive components ("What happened in your interaction?"), analytical dimensions ("What cultural factors might have influenced this situation?"), and application elements ("How might you approach similar situations differently based on this understanding?"). In contrast, teams where reflection remained optional or superficial showed minimal progression beyond initial awareness levels.

Task design significantly influenced engagement depth and intercultural learning quality. Collaborative projects requiring genuine interdependence, negotiation of different perspectives, and creation of joint products fostered deeper intercultural engagement than information exchange activities or parallel work with minimal collaboration. Particularly effective tasks involved authentic problems with multiple valid approaches, requiring teams to negotiate how to proceed while recognizing that different cultural backgrounds informed varying problem-solving preferences. For example, teams developing intercultural training materials for European businesses needed to reconcile different views about appropriate business etiquette, communication directness, and relationship-building practices, generating rich discussions examining cultural assumptions. Tasks perceived as artificial or too simplistic failed to sustain motivation and produced surface-level engagement. Optimal task progression moved from lower-stakes relationship-building activities early in the program toward more complex collaborative challenges as familiarity and trust developed.

Instructor facilitation played a crucial yet often underdeveloped role in supporting intercultural competence development through virtual exchange. Effective facilitators balanced active guidance with appropriate autonomy, providing scaffolding when teams struggled while allowing them to work through challenges independently when productive. Key facilitation practices included setting clear intercultural learning objectives beyond task completion, providing conceptual frameworks for understanding cultural differences, intervening when conflicts escalated unproductively, encouraging perspective-taking through targeted questioning, and creating safe spaces for discussing sensitive topics including stereotypes, privilege, and misunderstandings. Less effective facilitation approached virtual exchange primarily as logistical coordination, checking that teams completed technical requirements without engaging with intercultural learning processes. Several participants noted that without instructor prompting, their teams would have avoided addressing cultural tensions or conflicts, missing valuable learning opportunities.

The following diagram illustrates the developmental model that emerged from analyzing successful intercultural competence development trajectories through virtual exchange:

This model depicts competence development as a dynamic process rather than linear progression, with foundational conditions enabling engagement, critical incidents creating learning opportunities, and structured reflection facilitating transformation of experience into competence. The model emerged from analyzing trajectories of participants showing strongest development, who consistently demonstrated this pattern of moving beyond surface exchange through navigating challenges with reflective processing.

Duration and intensity considerations revealed interesting tensions between providing sufficient time for competence development and maintaining engagement over extended periods. The twelve-week program duration proved adequate for observable competence gains but insufficient for full development of complex behavioral skills requiring extensive practice and feedback. Participants noted that weeks 2-3 and weeks 9-10 showed decreased motivation and engagement, suggesting that program pacing and activity variation require careful attention. Some teams maintained energy throughout while others' participation waned mid-program, with consistent facilitation and well-designed progressive tasks appearing protective against disengagement. These patterns suggest that optimal virtual exchange duration may vary based on intensity level, with more intensive programs potentially achieving similar outcomes in shorter periods, though requiring greater time commitment that may prove impractical within curricular constraints.

CONCLUSION

This investigation demonstrates that well-designed virtual exchange programs can effectively develop intercultural communication competence among European university students across cognitive, affective, and behavioral dimensions, producing meaningful and statistically significant improvements over twelve-week participation. Quantitative assessments revealed moderate-to-large effect sizes for attitudinal dimensions including respect for cultural differences and interaction enjoyment, alongside significant though more modest gains in behavioral competencies including message skills and interaction management. Qualitative analysis illuminated developmental processes, revealing that competence growth required progression beyond initial surface-level cultural awareness through encountering and productively navigating critical incidents involving genuine cultural differences, supported by structured reflection activities connecting experience to conceptual understanding.

Critical design elements enabling effective development included authentic collaborative tasks requiring interdependence, facilitated processing of intercultural challenges, progressive difficulty sequencing, and sustained engagement over sufficient duration for relationship development and practice. However, findings also highlight persistent challenges including linguistic inequalities disadvantaging

non-native English speakers, technological barriers impeding some participants' full engagement, superficial interaction patterns when reflection remained underdeveloped, and difficulty translating attitudinal gains into consistent behavioral demonstrations. These results inform virtual exchange pedagogy in European higher education contexts, suggesting that competence development requires intentional design transcending mere cross-national connection toward guided intercultural learning experiences incorporating multiple development supports. Future research should examine long-term competence retention, investigate optimal combinations of synchronous and asynchronous interaction modalities, explore how virtual and physical mobility experiences might complement each other, and develop more sophisticated behavioral assessment approaches capturing communication adaptability in authentic intercultural contexts.

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