Intercultural Interactions in a Virtual Global Learning Environment

Ruth V. Akumbu, Kristina Lux, Dante Schulz, Danielle Espino, Eric Hamilton
ruthakumbu@gmail.com, kristinalux77@gmail.com, danteschulz12@gmail.com,
danielle.espino@pepperdine.edu, eric.hamilton@pepperdine.edu
Pepperdine University

Abstract: This paper examines intercultural interactions of learners from 5 countries. Guided by intergroup contact and the transfer and adoption of universal principles theories, and using epistemic network analysis, findings indicate learners' experienced cultural sensitivity and understanding, language, heritage, values, and practices as they shared STEM-related projects.

Introduction

Increasing intercultural interactions can enhance a learner's ability to process interactions, predict misunderstandings, and then adapt their own behavior in intercultural situations (Bennett & Bennett, 2004; Herrington, 2010). These interactions can spark a desire at a young age to understand a culture outside one's own to create intercultural experiences and curiosity—formulating appreciation, empathy, and respect for another culture. The International Community for Collaborative Content Creation (IC4) studies how students' learning is impacted when teams teach their peers from diverse backgrounds STEM content in a virtual learning community. This paper studies how intercultural interactions are impacted when teams teach their peers STEM content.

Theory

Allport's (1954) intergroup contact theory holds that interaction between members of diverse groups enhances outcomes when guided by situational equality, mutual goals, intergroup cooperation, leadership support, and friendship (Pettigrew, 1998). A desire to understand a culture outside one's own can create better intercultural experiences, curiosity, appreciation, empathy, and respect (Bennett & Bennett, 2004; Perry & Southwell, 2011).

The TAUP model focuses on students with colonial, Indigenous, or multicultural backgrounds. It encourages a symbiotic relationship between a learner and their local cultural context, where learners learn through the lens of local culture and context (Akumbu, 2022). The theory was developed following ethnographic research in the Kisii tribe of Kenya with sixty participants ages 12–70. The study indicated nine elements of culture for Kisii K–12 schools: (a) rite of passage, (b) language, (c) heritage, (d) oral traditions, (e) beliefs, (f) values, (g) reward and punishment, (h) local STEM, and (i) practice over theory (Akumbu, 2022).

Methods

This paper examines the intercultural interactions of learners in the IC4 program using data from 2017 with six students, ages 12-17, from Kenya, Namibia, and the United States and from 2020 with seven students, ages 12–17, from Brazil, Cameroon, Kenya, and the United States via online video conferencing software, students presented STEM-related solutions to issues in their local communities. Recordings were transcribed and analyzed using epistemic network analysis software to model connections between the codes, Table 1 (Shaffer, 2017). Two raters prepared the data for analysis by independently coding each transcript, followed by social moderation for reliability. Table 1 presents of eight constructs organized around two categories: (a) soft skills transferred or adopted and (b) hard skills transferred or adopted.

Table 1
*Codebook of Constructs Included in the Analysis*

Category	Code	Description
Soft Skills Transferred or Adopted	Beliefs	Beliefs connected spirituality, religion, life after death, and taboos
	Values	Respect, hard work, discipline, morality, unity, love, courage, trust
	Practices	Practices are norms and customs, ways of being
	Heritage	Food, cooking, location, names, clothing styles, history
	Oral traditions	Songs, proverbs, stories, music, dance
	Language	Intercultural communication, speaking in a language other than English
	Cultural Sensitivity	Awareness, knowledge, respect, understanding
Hard Skills Transferred or Adopted	Local STEM	Local ways of thinking about STEM or local resources and material

The codebook was adapted from the nine elements of culture for K–12 schools (Akumbu, 2022). It includes cultural sensitivity, belief, respect, and trust—universal principles across cultures (Bennett & Bennett, 2004; Foronda, 2008).

Results

The June 2017 meetup, Figure 1a, shows strong connections between the codes of heritage and local STEM, suggesting that learners expressed STEM concepts and ideas through the lens of their personal cultural experiences. A Kenyan learner said regarding soil enrichment: "I just have that passion about making a video about this, so that's all that I considered." Next, triangulation among the codes of local STEM, heritage, and cultural sensitivity suggests that learners were aware of the diversity among them as they interacted (e.g., "I'm from Kenya," "I'm from USA," and "I'm schooling at [Namibia]). Triangulation among local STEM, cultural sensitivity, and practices were expressed by learners in talking about their local cultures and practices. Connections of beliefs, oral traditions, language, and values are nonexistent, and participants made no references to these codes in the discourse. Coded utterances of values and language surfaced in 2020, implying a deeper cultural experience as learners' experience with others' cultures increased and the program matured.

The August 2020 meetup, Figure 1b, shows a connection between language and local STEM, suggesting that as the program matured, non-English speaking learners were confident contributing to conversations by having their presentations translated into English for peers to understand. A Cameroon learner informed the translator: "Those who are Portuguese, we have the translation." Translator: "[They] really loved you guys' presentation, and appreciate you translated into Portuguese." A strong connection between local STEM and cultural sensitivity was evident, indicating that participants were sensitive to other cultures, making the impact of cultural interactions more prominent in the 2020 meetup. For example, as the pandemic raged, learners in Kenya used their STEM knowledge to make free soap for the most vulnerable in their community.

Figure 1
ENA Models of the IC4 Meet-Up (a) June 2017 (b) August 2020

(a)   (b)
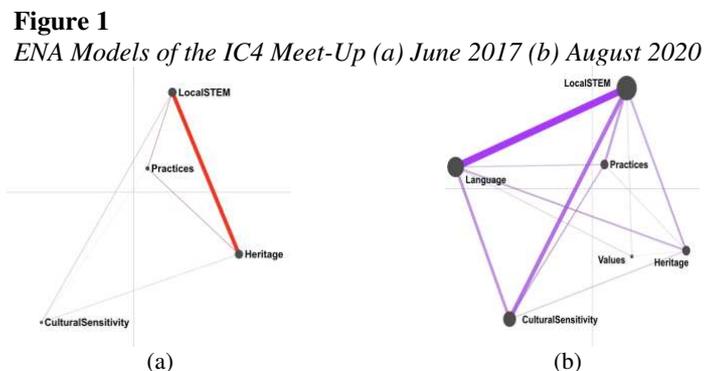
Conclusion

This paper examined the intercultural interactions of participants and the effect that the IC4 program had on global learners and their cultural sensitivity. Learners gained cultural knowledge and confidence interacting with other cultures and became more culturally sensitive over time. Further research is necessary to determine whether cultural knowledge leads to cultural capacity, knowledge application outside the learning environment, and the long-term impact on the participant and community.

References

Akumbu, R. V. (2022). *Culturally relevant elements for K–12 education in Kisii*. (Order No. 29323485) [Doctoral dissertation, Pepperdine University]. ProQuest Dissertations Publishing.

Bennett, J., & Bennett, M. (2004). Developing intercultural sensitivity: An integrative approach to global and domestic diversity. In D. Landis, J. M. Bennett, & M. J. Bennett (Eds.), *Handbook of intercultural training* (pp. 147–165). SAGE Publications. https://dx.doi.org/10.4135/9781452231129.n6

Foronda, C. L. (2008). A concept analysis of cultural sensitivity. *Journal of Transcultural Nursing, 19*(3), 207–212. https://doi.org/10.1177/1043659608317093

Herrington, T. K. (2010). Crossing global boundaries: Beyond intercultural communication. *Journal of Business and Technical Communication, 24*(4), 516–539. https://doi.org/10.1177/1050651910371303

Perry, L. B., & Southwell, L. (2011). Developing intercultural understanding and skills: Models and approaches. *Intercultural Education, 22*(6), 453–466. https://doi.org/10.1080/14675986.2011.644948

Shaffer, D. W. (2017). *Quantitative ethnography*. Cathcart.

Acknowledgments