College of Health & Human Performance UNIVERSITY of FLORIDA

Background

The internationalization of science, technology, engineering, and math (STEM) courses entails curriculum development to develop students' intercultural critical thinking and communication skills¹. This may be a valuable approach to enrich STEM education, offering opportunities for collaboration and cross-cultural learning². As most previous work focuses on courses in the liberal arts and language, there is lacking evidence in the context of STEM courses.

Research Question and Hypotheses

How effective is the internationalization of STEM courses such as APK 3200 Motor Learning in a fully online versus study abroad class format?

Objective 1: To evaluate impact on intercultural skill development within and between class formats. **Hypothesis 1**: Intercultural skill development will improve for both class formats but more for the study abroad compared to the online class.

Objective 2: To evaluate the improvement of content comprehension within and between class formats.

Hypothesis 2: Content comprehension will improve for both class formats but more for the online compared to the study abroad class format.

Subject N (Based on pre-survey completion/term): SU 23 (29), FA 23 (32), SP 24 (76), SU 24 (25)

Curriculum Internationalization on Intercultural Skills and Content Comprehension in APK 3200 Motor Learning in the Classroom: Online vs. Study Abroad Diba Mani, Ph.D., Rachael Major, B.S.; Department of Applied Physiology & Kinesiology

Methods

Anonymous, self-reported voluntary pre- and postsurveys applied each term, with questions on: Demographic and cultural background • Degree program and academic standing Course content/comprehension • International Critical Thinking (IntCRIT) and International Communication (IntCOMM)³ on global, international, and intercultural

- competencies

Analysis within and between terms:

- Conversion to 5-point Likert values⁴
- ANOVA: two-factor with replication; paired 2sample t-tests

Results (Representative Data)



Table 1 (below). Prevs. post-content between class (a.u.) Online Study Abroad 0.111 0.143 Mean Mean 0.023 0.020 Variance 29 29 Pooled var. 0.022 Mean diff p<0.005

Figure 1 (left). IntCRIT #6 (CT6): Difference in Likert value means.

Figure 2 (below). IntCOMM #18 (C18): Difference in Likert value means.

ABROAD ONLINE



These results indicate a greater improvement in intercultural skill development in the study abroad course format than in the online course format while demonstrating that curriculum internationalization in online STEM courses does **not** negatively impact students' ability to comprehend course content and may be developed further. The incorporation of internationalization is vital for developing well-rounded STEM students in preparation for a globalized workforce.

Limitations: Sub-100% completion of surveys; nonproctored course content questions. Future Directions: Compare study abroad in English-speaking countries versus non, longer-term programs, and residential (domestic) class formats.

This study confirms that STEM courses conducted in study abroad formats can enhance intercultural skill development alongside content comprehension comparable to online course formats; internationalization does **not** negatively impact content comprehension in online course formats.

¹Leask B, 2015. *Routledge*. ²Msomphora MR, 2025. *Intl J Educ Res*. ³Wilson TJ, 2014. Univ Florida. ⁴De Winter JCF and Dodou D, 2010. *Res Eval*.



Discussion

Conclusion

References