

Abstract Submitted
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An exploration of the relationship between physics “fluency” and physics “competency” in higher education through the lens of intercultural competence KAREN ANDEEN, Marquette University — In the field of intercultural education, linguistic fluency is considered a prerequisite to intercultural competency. Similarly, is physics fluency a prerequisite for physics competency? To explore the relationship between fluency and competency in physics higher education, a fluency survey was developed and issued to 300 Marquette University students following the 2019 spring semester of introductory physics. In addition to biographical questions, this survey asked students to define a series of lexically ambiguous terms that are critical to physics understanding (i.e. words with meanings in physics different to daily parlance, e.g. “field” and “charge”). Rubrics to assess the responses to each word were developed and validated. Physics competency was evaluated using the Brief Electricity and Magnetism Assessment (BEMA). The relationships between fluency and competency have been explored both in aggregate and for each word individually. Analyses also explore fluency and competency relationships between student cultural subgroups. Results of this study and future plans will be presented.

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