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Investigating attitudes toward diversity among engineering and management students

Xiuli Wang, Department of Statistic, Purdue University
Brent K. Jesiek and Qin Zhu, School of Engineering Education, Purdue University

ABSTRACT

As the world becomes increasingly globalized, students and professionals face growing challenges related to working across national and cultural boundaries. A related concern for today's educators and researchers is a lack of effective assessment tools to measure global competency among students in engineering, management, and other professional fields. To begin addressing this gap, two previously validated measures of personal attitudes and perceptions toward diversity were administered to students in multiple professional fields, as it was hypothesized that a positive attitude toward diversity is likely one of the major qualities that makes engineers and other professionals perform more sensitively and effectively in cross-national/cultural work environments. The first such measure is the Miville-Guzman Universality-Diversity Scale-Short form (MGUDS-S), a 15-item survey designed to evaluate a construct called Universal-Diverse Orientation (UDO) across three dimensions (Diversity of Contact, Relativistic Appreciation, and Comfort with Difference). The second measure consists of a 9-item Tolerance subscale taken from a larger Openness to Experience questionnaire. This study focuses on how the MGUDS-S and Tolerance tests are potentially related to one another, as well as to various demographic variables. It addresses these themes by first generating hypotheses based on previously published results for MGUDS-S, Tolerance, and related constructs. It then analyzes MGUDS-S, Tolerance, and demographic data collected from undergraduate students in engineering and management (n=1761) using appropriate statistical techniques (e.g. Spearman correlation analysis, Canonical correlation analysis, one way and two way ANOVA test). Demographic variables analyzed in this study include gender, academic level (first-year vs. sophomore or higher), major (engineering vs. management), and citizenship (U.S. vs. other). The results show that students' scores on MGUDS-S and Tolerance are highly correlated. Additionally, our research shows that the engineering students have significantly higher scores in subscale 3 (Comfort with Differences) of MGUDS-S, and total scores in both tests; first-year students have significantly higher scores in subscale 1 (Diversity in Contact) of MGUDS-S; and international students have significantly higher scores in all 3 subscales of MUGUDS-S, and higher total scores in both tests. Finally, our study indicates that women scored significantly higher on MGUDS-S subscale 1 (Diversity of Contact), subscale 2 (Relativist Appreciation), and total score. This study sets the stage for a number of future studies, including: 1) examining how perceptions of and attitudes toward diversity are potentially related to individual performance on a situational judgment test (SJT) designed to measure global engineering competency, 2) Using factor analysis to create a short form Tolerance test, and 3) identifying relevant literature to help better understand and explain how the four demographic variables are related to MGUDS-S and Tolerance scores (e.g., Jesiek, Shen, & Haller, 2012).

KEYWORDS

Cultural sensitivity; Diversity; Engineering; Global competency; Management; MGUDS-S; Tolerance; Universal-Diverse Orientation (UDO)

REFERENCES

Jesiek, B. K., Shen, Y., & Haller, Y. (2012), Cross-cultural competence: A comparative assessment of engineering students. *International Journal of Engineering Education*, 28(1), 144-155.