Student Readiness CREW: Evaluation of Students’ Proficiency and Comfort Level with Technology and their Impact on Student Performance

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Rationale and Design

Assessment of technological skills and designing learning interventions to increase the readiness to learn are essential to preparing students to accomplish national educational goals. Three domains within the Universal Design for Learning that must be assessed are the ability to use technology skills as “a means to representing information, the means for the expression of knowledge, and the means of engagement in learning”. In fact, The National Education Technology Plan (NETP) has the following long-range recommendation for assessment:

Our education system at all levels will leverage the power of technology to measure what matters and use assessment data for continuous improvement.

This study was designed to meet that recommendation to assess the capacity of the learner to use technology to learn and to use technology as a means to universal design of learning. A technology survey was administered to students enrolled in IHRE 2000. The survey is comprised of 22 items between two constructs, technology proficiency and attitude toward technology. The proficiency scale is modeled after a scale developed by Savery (2002), with items specific to technologies necessary for the course. The attitude scale is modeled after items in “The Computer Attitude Scale” by Nickell and Pinto (1986).

The survey instrument is comprised on 22 items between two constructs and nine demographic questions. Figure 1 (top left) shows the survey instrument. The survey was administered through Qualtrics to students during the first two weeks of the semester. Figures 2 (top right) and 3 (bottom right) show the distribution of scores among those students who participated in the survey.

Reliability and Factor Analysis

Analysis of the two primary constructs demonstrates that it is possible to reduce the number of items in the attitude scale without loss of reliability. Figure 4 shows the reliability analysis for the proficiency and attitude scales, as well as the primary factor analysis for the attitude scale.

Continuing Work

We will perform further analysis to determine if there are ways to make the survey more robust and to reduce the number of items. In future semesters we will administer the survey to students with the goal of identifying those students most at risk for course difficulties as a result of their technology proficiency.

References


Savery, J. (2002). Faculty and Student Perceptions of Technology Integration in Teaching. The Journal of Interactive Online Learning, 1(2), 1-16.