Practical Measurement in Action: Continuously Improving a Practical Measure of Community College Student Motivation and Engagement

The goal of this presentation is to explain the development, testing, implementation and use of a practical measure of community college students’ engagement and motivation.

In developing the survey items, we faced an initial challenge in effectively translating long, arduous, and (too often) ambiguous surveys into clear and efficiently-administered measures that resonate with practitioners. Survey development began with a driver diagram of key problems facing students that cause a negative recursive cycle that ends in either course withdrawal or failure. All potential drivers were based on interviews with faculty, students, and other community college practitioners in addition to an extensive review of the theoretical literature. Then, we located measures of the drivers from the literature and through interviews with community college faculty. Hence, the development was informed by both clinical experience and a scientific theory that grew out of the research literature and interviews with students and faculty.

Next, we re-wrote items to be construct-specific instead of using agree/disagree options, which have well-known, but often ignored methodological flaws (e.g., Saris, Revilla, Krosnick & Shaeffer, 2010). The survey items next went through a process of customization to the perspectives of community college practitioners and students. Based on the cognitive pre-testing, the survey items were re-written to match community college students’ construals of the phenomena. We initially took 20-50 item scales and reduced them to 1, 2, 3 or 4 item scales by privileging that were theoretically essential and empirically rigorous.

After this initial piloting, we used our practical measure to assess whether changes implemented in the classroom were, in fact, improvements—at least in terms of the drivers outlined in our practical theory of improvement. The brief set of measures was embedded in an online instructional system and students were directed by faculty to complete the items as part of enrollment and then again during the fourth week of class. In this way, drivers of students’ motivation and engagement were assessed efficiently and practically before and after experiencing the relevant interventions embedded in the first month of the course.

Evidence on the efficacy of the Productive Persistence starter package was encouraging. The results, measured as standardized effect sizes, show positive changes in six measured student attitudes after the first three weeks of exposure. As instruction began, students’ interest in math, confidence of future success in course, and understanding of the relevance of mathematics increased. Students’ beliefs about fixed mindsets and their inability to learn math decreased, math anxiety decreased, as did their sense of stereotype threat (these are all positive outcomes). However, these effects did not occur in every college and for every sub-group of students; thus informing subsequent improvement priority setting. This
presentation will offer greater detail on the development, validation and use of these practical measures of student social-psychological factors affecting engagement and learning.