A Process for Validating a Professional Engagement Instrument Using Both Qualitative and Quantitative Input

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Background

- Engagement is linked to positive outcomes
  - Student engagement related to academic performance
  - Employee engagement related to performance, productivity, job satisfaction, health, and wellbeing
- A preliminary instrument has been created to measure professional engagement in student pharmacists, but has yet to be vetted by expert review

Objectives

- To demonstrate and enhance the content validity of an instrument using both qualitative and quantitative input from experts

Methods

Expert Review

- Five subject matter experts were recruited based upon their experience working with professionally engaged students and expertise in assessment
- They provided quantitative and qualitative input on the 34 survey items
- Experts also gave the following conceptual definition: an emerging state of mind towards one’s profession characterized by high energy, involvement with a sense of significance, enthusiasm, inspiration, pride, and being happily engaged in one’s profession

Quantitative Input

- During an electronic survey, experts rated the conceptual relevance of each item (not relevant, somewhat relevant, quite relevant, and highly relevant)
- These ratings were used to calculate an item level Content Validity Index (CVI), an indicator of content validity
- Item CVI scores were calculated by dividing the number of “quite relevant” and “highly relevant” responses by the total number of experts

Qualitative Input

- Experts provided qualitative input during the electronic survey about the instrument as a whole, clarity of individual items, and potential changes to items
- They also provided feedback during a one hour telephone focus group

Analysis

- Qualitative and quantitative input was used in tandem to refine the instrument

Results

- Experts as a group had 85 years of pharmacy experience, 61 years of experience profession as engaged students and expertise in assessment
- Overall instrument feedback
  - Ensure the assessment focused on state of mind (vs. resources or activities)
  - More effectively cognitively prime students

- Qualitative feedback was provided for 23 of the 34 items
  - Concerns over interpretation of certain words, state of mind focus, relevance to professional engagement, and ordering of questions
  - Fifteen items had CVI scores below 0.78, and 19 had CVI at or above 0.78

Ongoing Instrument Development Process

- A modified Delphi process with highly engaged students defined professional engagement, based engaging activities, and characteristics of those activities
  - Twenty-nine items developed in 2012 based upon the engaging characteristics

- Survey administered to 82 first-year pharmacy students April, 2013
  - Exploratory factor analysis revealed a 5 factor solution after removal of 2 items
  - One factor contained only 2 items

- Question bank expanded to 40 items based upon content analysis of qualitative data from Delphi study, and from review of other measures and definitions of employee and student engagement to ensure complete conceptual coverage

- Survey administered to 150 first-year pharmacy students January, 2014
  - Exploratory factor analysis yielded 6 factor solution
  - Based upon results 6 items were removed, and 6 items were cut resulting in a bank of 34 items

- Fire subject matter experts participated in review of the instrument
  - Qualitative and quantitative input used to refine the instrument, resulting in 27 items

- Cognitive interviews with 4 third year students and 4 fourth year students, resulting in 3 deletions and 5 wording changes, resulting in 24 items

- Survey administered to 164 first-year pharmacy students May, 2015

Discussion

Interpretation of Findings

- Using qualitative or quantitative feedback alone would have yielded different results
- The feedback yielded complementary information in some instances, where:
  - Quantitative review identified problematic items
  - Qualitative review explored the reasons for problems and possible solutions
  - Other instances of divergent information helped identify problematic items that were not identified by quantitative ratings alone
  - 12 of the 19 items with adequate CVI ratings resulted in action based upon qualitative inputs

Implications

- Using both forms of expert review enhanced the content validity of this instrument
- This work provides a framework for using multiple forms of input in instrument validation by subject matter experts