

SUNY IITG – Round 1

**Project: Development & Validation of SUNYPrep: Learner Preparedness Survey
December 10, 2013**

Project Goals

Our goal is to create an assessment instrument to predict student success as a means to inform program directors, department chairs, deans and others in a loop of continuing improvement and assessment. Our intention is that the instrument, used appropriately, will provide information to improve instruction and student engagement in learning across disciplines, and the education and workforce pipelines.

The questions we are trying to answer are these: *Does one's learner characteristics and level of information and communication technology engagement predict academic achievement? And more pointedly: what are the predictors for success?*

Phase I goals covered by the 2012 Innovative Instructional Technology Grant were to develop and validate an instrument designed to predict student success based on individual learner characteristics, and the learner's level of engagement with information and communication technology. Phase Two will test the instrument's ability to predict student success.

Project Status

As of December 1, 2013, the instrument has been written and passed through item analysis. Items were altered based on the outcomes of that analysis as described below. Data collection has just been completed and is undergoing analysis. Results on instrument validity, reliability, and short-term prediction will be reported to the IITG administrator when analysis is complete.

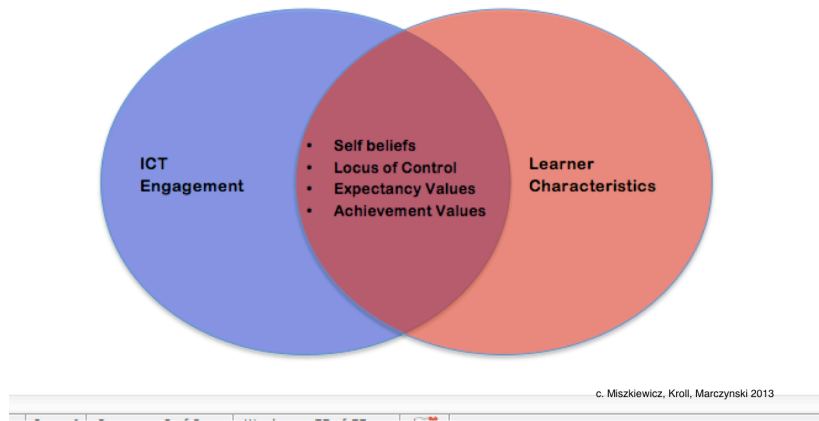
Methods

Construct Development

Constructs were developed after a review of the literature from the fields of education, and communication. The team concluded that four sub-constructs are in play across the larger domains of learner characteristics (LC) and information and communication technology engagement (ICTe). Sub-constructs include self-beliefs, locus of control, achievement values, and expectation values. Defining these sub-constructs gave the research team a frame around which to develop questions.

Item Development

The research team developed items in each of the sub-construct areas for each domain, as shown here:



Items were drawn from existing scales, including Bandura’s Self-Efficacy for Self-Regulation scale (Zimmerman, Bandura, Martinez-Pons, 1999), Stupnisky et al.’s Perceived Control scale (2007), and questions from Dray and Miszkiewicz’ Online Learning Readiness Survey (2010). Additional items were developed by the research team, and the final instrument was comprised of 57 questions.

Item Analysis

Item analysis is conducted to ensure that respondents understand what the researcher is asking. For our purposes, we tested the instrument items with respondents to test whether they would understand the question as intended by the researchers.

During July 2013, the first iteration of the instrument was tested as an online survey with 32 students enrolled in online courses at Empire State College’s Center for Distance Learning. Analysis was completed on 33 questions which were developed by the research team, and previously not validated. The team did not analyze the afore-referenced scales, as they had already undergone validation by the original authors.

The item analysis survey was created by breaking the 33 items to be tested into three 11-question surveys. The 32 students were similarly split into three groups, each of which took one item analysis survey. Questions were presented one at time, each with three follow-up questions to be answered by respondents (see below). (Note that only one group took the entire 57-item survey and then an 11-question item analysis, whereas the other two groups did not take the survey before doing the item analysis. This will allow us to see whether meaning is interpreted differently by those who have actually participated in the survey before thinking about what the questions are asking in a more in-depth manner as compared to those who did not experience taking the survey beforehand.)

The three follow-up questions about the original question were as follows:

1. What did the whole question mean to you?
2. Would you reword the question?
3. Do the responses listed above provide choices that allow you to answer the question accurately?

Questions one (1) and two (2) are from Converse and Presser (1986), and the third was developed by the authors.

Results from the analysis revealed some redundancies, causing certain questions to be thrown out or combined. Minor changes were made to another 15 questions based on respondent feedback. In these cases, the changes helped to clarify the researchers' intent, as in the example below:

Original Question Analyzed by Respondents	Change to Question based on Analysis
How important is it to your friends that they get college degrees?	In general, how important is it to your friends that <i>they</i> get college degrees?
How useful do you believe the knowledge you gain in college will be in life?	How useful do you believe the knowledge you gain in college will be in <i>your</i> life?

In some cases, the question underwent a more extensive revision, as exemplified below.

Original Question Analyzed by Respondents	Change to Question based on Analysis
How well do you review information you find on the Internet before using it in an assignment? (By review, we mean look at who created the information, how old the information is, whether/why the author is credible, etc.)	How well do you review information you find on the Internet (<i>i.e., for validity and integrity</i>) before using it in an assignment? (By review we mean look at who created the information, how old the information is, whether/why the author is credible, etc.))
How well do you work in a group as an active communicator?	<i>How well do you actively communicate when working as part of a group?</i>

In one case, the answer choice set was changed as noted below.

Original Answer Choice Set	New Answer Choice Set
Not at All Somewhat Quite a lot Perfectly	Not at All Somewhat <i>Very</i> Perfectly

The analysis resulted in a new, 54-item instrument.

Instrument Validity, Reliability, and Short-term Prediction Testing

The next stage of testing this instrument required a sample of at least 500 respondents to take the survey. Initially, researchers were planning to complete this testing in early Fall 2013. Due to the unforeseen release of a campus-wide faculty and student survey, our survey was unable to be launched until November 2013. Data have been collected from over 650 students at a four-year college and are just now going to be undergoing review.

Analyses planned include initial frequency distributions to describe the respondents demographically; reliability analyses (Cronbach's alpha) and factor analysis to test the reliability and cohesiveness of the subscales and their respective items; bivariate statistics (e.g., Chi-square tests) to examine basic relationships between chosen demographic variables and scores on each of the subscales; and further analyses as deemed appropriate based on the outcome of the earlier analyses.

Miskiewicz, Marczyński, Kroll, Wieczorek 2013

References

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