Pilot surveys, cognitive interviews, and focus groups – Oh my!

A mixed-methods approach toward designing a longitudinal survey

Darnell Cole, Joseph Kitchen, Adrianna Kezar & Matt Soldner
Session Overview

- Introduction
- Research Project Overview
- Eight-Step Mixed Methods Process
  1. Review of psycho-social measures/Qual. data
  2. Baseline psychometric pilot
  3. Baseline questionnaire administration
  4. Focus group discussions
  5. Qualitative case study research
  6. Follow-up psychometric pilot
  7. Cognitive Interviews
  8. Follow-up questionnaire administration
- Conclusions and lessons learned
- Q & A
Research Project Overview
Comprehensive College Transition Program

● Overview
  ○ Since 1960s, foundation provided scholarships for low income students
  ○ Five years of funding
  ○ Three campuses in university system
  ○ Small learning community courses, mentoring, residential component, first year experience course, programming from staff
  ○ Two year program

● Purpose for project
  ○ How the comprehensive college transition program facilitates engagement, the development of academic self-efficacy, mattering/sense of belonging, persistence and other outcomes.
Methods

• Concurrent mixed-methods design
  – 2 Cohorts (2015, 2016)
  – Embedded sequential exploratory/explanatory
  – Six year study

• Two important tenets of mixed-methods design:
  – Methodological eclecticism
  – Paradigm pluralism
Initial qualitative data
Baseline Pilot
Baseline Survey
Focus Group Interviews
Case Study Research
Follow Up Pilot
Cognitive Interviews
Follow Up Survey

Longitudinal Survey Development
Step One: Qualitative Data & Review of Psycho-Social Measures
Qualitative Data & Review of Psycho-social Measures

- Site visits with programs
- Interviews with program staff and key administrations
- Program document collection
- Focus groups
  - Program faculty
  - 50 students on each campus
  - 12-20 campus stakeholders (e.g., counseling, TRIO, student affairs)
- Literature review conducted after site visits
  - Identify measures to test in psychometric pilot
Qualitative Data & Review of psychosocial measures:

**Major Takeaways**

- Identified several additional constructs to measure in survey questionnaire

- Used literature review to identify other measures that may be relevant given the characteristics of the program and participants

- Biannual process and half-day retreats to continue literature review

- Quant. team consistently works with qual. team to inform survey and get feedback
Step Two: Baseline Psychometric Pilot Survey
Psychometric Pilot Survey

• Conducted in July 2015

• Purposes
  – Test and validate more than a dozen outcome variables, including intermediate outcomes
  – Evaluate operational protocols

• Sample included 972 scholars from the 2012 and 2013 cohort

• 350 respondents, about 36 percent.
Key Baseline Constructs

- Peer Interactions
- Faculty Interactions
- Time Use
- Social self-efficacy
- Academic self-efficacy
- Career decision-making self-efficacy
- Sense of belonging
- Perceived academic control
- Resiliency
- Expectations about mattering
- Financial Stress
- Malleability of ability
- Interpretation of difficulty
• Psychometric properties of adapted measures are often in the ball-park of published results, but using Confirmatory Factor Analysis to verify can add confidence in your choices.

• We used graded response IRT models as an additional check following CFA, particularly when we were considering scale reduction.
Step Three: Baseline Survey Administration
Baseline Survey

• Primary purpose – To obtain an early (expected) measure of key outcome variables (and intermediate outcome variables)

• Secondary purpose – evaluate improved operational protocols

• Baseline Survey administered in August 2015

• Sample was 1335 program participants from the 2015 cohort (first year students only)
Key Baseline Constructs

- High school sense of belonging
- High school interactions with peers
- High school interactions with faculty
- High school time use
- Expectations about social self-efficacy
- Expectations about academic self-efficacy
- Expectations about mattering
- Expectations about belonging
- Expectations about likelihood of graduation
• Our baseline administration uncovered at least one phenomenon that was not detected in the pilot, given its population and the timing of administration: higher than anticipated baseline scores on self-efficacy measures.

• What is the temporal nature of your phenomena? If they are time-variant, how best to measure?
Step Four: Focus Group Discussions
Focus Group Discussions

- Exploring a set of phenomena with the intent of determining appropriateness of survey item development (i.e., exploratory)

- Semi-structured, open-ended protocol with 7 guiding questions
  - Student experiences, perceptions, and opinions of first contact with program, summer experience, and transition into the program
Focus Group Discussions:

Major Takeaways

Key findings

- Advising
- Scheduling conflicts
- Power of small class size
- High expectations within the program

- Considered adding items to further discriminate key constructs around high expectations
- Considered differences between program and non-program classroom experiences
Step Five: Case Study Research
Case Study Research

• Better understanding of program elements on each campus, student bodies, major stakeholders and broader campus environment

• Document the ways that the program operates to shape student experiences

• Case study elements included program observations, interviews with staff and stakeholders, and social media/document analysis
Case Study Research:

Major Takeaways

Key findings

• Helped identify the important program elements to study

• Helped with developing appropriate survey phrasing and wording

• Shaped survey instrument design
  • Identified important role of staff members; added questions related to this

  • Items added to address staff-student relationships, engagement, and support

  • Added in mid-semester grade check

  • Digital diary information resulted in addition of time-use questions

  • Observations led to addition of faculty-student questions
Step Six: Follow-up Psychometric Pilot
Follow-Up Pilot Survey

• Administered in January 2016

• Purpose was to test and validate measurement of 10 key engagement constructs

• Sample included 1652 scholars from the 2013 and 2014 cohorts

• 352 respondents, about a 21% response rate
Follow-Up Pilot Survey:  

Major Takeaways

Key findings

• Once again, results demonstrated the importance of pilot testing even those items you think students should have reasonable knowledge of!

• Expanded response options to seven points

• Time anchor in the question stem may help the performance of constructs

• Do we continue to include mediocre performing constructs for the sake of the longitudinal analysis

• Minor tweaks to items within the constructs are still needed to improve performance
Step Seven: Cognitive Interviews
Cognitive Interviews

• Conducted to revise survey items related to student engagement with specific program elements
• Eleven interviews were conducted in Feb. 2016
• Two components: (a) think aloud method; and (b) question probing
• Contributed to survey refinement and helped ensure quality, valid instrument
Cognitive Interviews:

Major Takeaways

Key findings

• Many survey items sufficiently strong

• Changes to survey resulting from cognitive interviews:
  • Using a gate question to determine event participation prior to asking about engagement
  • Use of grid instead of repeated sections about each event across different types of engagement
  • Including a “not sure” option
Step Eight: Follow-up Survey Administration
Follow-up Survey Sample

- Sample was 1297 program participants, COS, and Control from the 2015 cohort (first year students only)

- 951 Respondents (73.3% response rate)
Key Follow-up Constructs

- “Actual” academic self-efficacy
- “Actual” social self-efficacy
- Experience of mattering
- Experience of belonging
- Engagement with peers and faculty
- Engagement with program features
- Financial stress
- Revised graduation expectations
Follow-up Survey:

Major Takeaways

• We’re still in the preliminary phases of the substantive analysis.

• However, we did some analyses immediately that were designed to feed back into the questionnaire design phase for the next cohort.

• We also conducted analyses to evaluate the effect of methodological experiments designed to improve response, and tweak them for the Cohort 2 Baseline.
Conclusions and Lessons Learned
Initial qualitative data
Baseline Pilot
Baseline Survey
Focus Group Interviews
Case Study Research
Follow Up Pilot
Cognitive Interviews
Follow Up Survey

Longitudinal Survey Development
<table>
<thead>
<tr>
<th>Challenges</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Planning of qualitative and quantitative sequence</td>
<td>• Established valid, reliable measures</td>
</tr>
<tr>
<td>• Time intensive strategy</td>
<td>• Strengthened and contextualized measures via cognitive interviews, psychometrics</td>
</tr>
<tr>
<td>• Gaining buy-in and securing collaborative relationships</td>
<td>• Moved beyond reliance on literature alone</td>
</tr>
<tr>
<td>• Decision-making about what to do next when established measures don’t work</td>
<td>• Tested items with students drawn from our population of interest</td>
</tr>
<tr>
<td>• Deciding how to edit or add new items for survey based on qual. findings</td>
<td>• New items added as a result of qualitative findings</td>
</tr>
<tr>
<td>• Bringing together (sometimes conflicting) qual. and quant. findings to make a cohesive argument</td>
<td>• Triangulation of data and clarification of findings from quant. or qual.</td>
</tr>
<tr>
<td>• Striking the right methodological balance</td>
<td>• Qual. work provides guidance in developing survey items and identifying relevant measures</td>
</tr>
</tbody>
</table>
Questions and comments

We welcome your feedback and ideas!
Pullias Center for Higher Education
Rossier School of Education
University of Southern California

3470 Trousdale Parkway
Waite Phillips Hall 701
Los Angeles, CA 90089

Website: pullias.usc.edu