Aligning Multiple Surveys to Maximize Assessment: Cross-Sectional Analyses of Learning Outcomes

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OVERVIEW

Universities utilize surveys to assess student experiences inside and outside the classroom (Kuh et al., 2014). Many of these surveys target only one or two subsets of students: freshmen, seniors, or alumni; most often, alumni are excluded from these assessments (NSSE, SSI, CS & YFCY Surveys, etc.). Alumni provide industry perspective in evaluation, linking the workforce to academia (Bosshart et al., 2009; Puerzer & Rooney, 2002). These surveys utilize longitudinal testing to assess changes with some having the ability to do cross-sectional analyses across two groups (NSSE). Though longitudinal data is considered the “gold standard” (Seifert et al., 2010), demands to see changes having quick effects, cross-sectional testing allows for assessment within a snapshot of time (Lovett & Johnson, 2012; Regan & Schmidt, 1999; Schneider & Niederjohn, 1995).

UNLV, a large urban research university, implemented a redevelopment of the general education curriculum in 2012, including new University Undergraduate Learning Outcomes (UULOs) and first year Seminar courses. The learning outcomes highlighted in this study include:

- Critical thinking
- Written communication skills
- Oral communication skills
- Multicultural knowledge & awareness
- Understanding of ethics

Since implementation is relatively new, the university decided to utilize cross-sectional testing to assess students’ opinions of their coursework contributing to their learning outcomes, assessing freshmen, seniors, and alumni.

Objectives:
1. Identify target populations to distribute student-centered surveys
2. Develop outcome items that can be tracked longitudinally
3. Analyze survey results within a single target group and among the target populations
4. Assess differences and similarities within and between groups
5. Formulate a plan to utilize results to improve student learning

METHODS

- Three surveys administered to first year students, graduating students, and alumni in Fall 2017
- Undergraduate learning outcome items were utilized for cross-sectional analyses
- The three populations were compared using ANOVA analyses with Tukey follow-up tests

RESULTS

Mean ratings for individual target groups

For 4 of the items, the trend of mean scores increases as student progress through their academic careers, with alumni having the highest mean score (Figure 1)

Multicultural knowledge and awareness show seniors have the highest mean score (Figure 1)

Comparison among the three target populations

- For all the items, there were statistically significant differences among the three populations: first year, senior, and alumni
- From the post hoc tests, the upward trend is statistically significant with seniors having higher mean ratings over first year students for all 5 items and alumni having higher ratings over first year students in 4 items (Table 2)
- This suggests that the students perceive their coursework has helped improve their learning outcome skills and has retained that perception after entering into the workforce

Table 2. Follow-up test results

<table>
<thead>
<tr>
<th>Item wording</th>
<th>Seniors &gt; First Year</th>
<th>Alumni &gt; First Year</th>
<th>Seniors &gt; Alumni</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inquiry and critical thinking skills; Written communication skills; Oral communication skills</td>
<td>Seniors &gt; First Year</td>
<td>Alumni &gt; First Year</td>
<td>Seniors &gt; Alumni</td>
</tr>
<tr>
<td>Multicultural knowledge and awareness</td>
<td>Seniors &gt; First Year</td>
<td>Alumni &gt; First Year</td>
<td>Alumni &gt; Seniors</td>
</tr>
<tr>
<td>Understanding of ethics</td>
<td>Seniors &gt; First Year</td>
<td>Alumni &gt; First Year</td>
<td>Alumni &gt; Seniors</td>
</tr>
</tbody>
</table>

Figure 1. Mean ratings for Undergraduate Learning Outcomes

Figure 2. Feedback loop

IMPLICATIONS

- Using the first year survey as a baseline, we are able to assess how well the institution introduces undergraduate learning outcomes
- Comparing the differences between the first year survey and the graduating senior exit survey, we are able to assess how well the institution helps students achieve the learning outcomes across the curriculum
- Finally, comparing the differences of the surveys to the alumni survey, we are able to assess how well the institution prepared graduates in retaining the learning outcomes after graduation
- Together, the three surveys create a feedback loop that helps to identify the level in which we can improve the general education curriculum

LIMITATIONS

- All surveys are self-reported – Factors, such as satisfaction, could impact student/alumni perceptions
- Item wording – Slight wording differences among the surveys could impact how students/alumni respond to the items
- Representativeness of the samples – In particular, the Alumni Survey has a lower percentage of minority respondents, which does not reflect the student and alumni populations

REFERENCES


FOOTNOTES