Recommendations for Using Multiple Years of NSSE Data

Webinar will begin at 2 pm (Eastern).
Before we begin, please review the Zoom controls below. Leave your audio and video off, unless prompted by a host. You can post any questions in the chat box.

Please leave your audio muted and video off (both indicated by a red slash)

Click to open the Participants box. This will allow you to give nonverbal feedback.

Click to open the Chat box. This will allow you to chat with Hosts and Participants.

Troubleshooting:

• Visit https://kb.iu.edu/d/aods#hear-talk for a comprehensive set of tests and troubleshooting solutions if you have issues with the Zoom software.

• To check your audio connection, click the arrow next to the microphone on the left hand side of the in meeting toolbar.

• Click “Test Computer Audio“ and audio preferences will open.

• You can test the volume and output of your speaker device be selecting “Test Speaker.” If you cannot hear, change the output source by selecting a different speaker device.
Recommendations for Using Multiple Years of NSSE Data

Bob Gonyea and Rick Shoup
Indiana University Center for Postsecondary Research

A NSSE Webinar
March 27, 2018
Agenda

- Identifying multi-year questions
- Recommended comparisons
- NSSE’s Multi-Year Report
- NSSE’s Report Builder
- Analytical approaches
Identifying Multi-Year Questions

Confirming stability and reliability
• How stable was our data from one year to the next?

Measuring change due to campus initiatives
• Given the implementation of a specific campus initiative, how much did engagement change before and after?

Identifying trends over time
• What trends in the data are apparent in given engagement measures over time?
Possible Comparisons

Consider

• Engagement is a process measure
• The educational contexts in the first year and senior year are different
Do Institutions Improve?

Evidence of improvement found at 41% of institutions on at least one measure;

• These institutions represented all types and sizes

• Examples of downward trends were rare

Yes.

Supportive Campus Environment: Seniors

Each line is a real institution’s results.
NSSE’s Multi-Year Report (MYR)

• Did my institution get this report?
  • Distributed in NSSE 2015, 2016 and 2017.
  • At least two NSSE administrations 2013+
  • Available from “Data & Reports” in Institution Interface

• Report Sections
  • Administration Summaries
  • Engagement Results by Theme
  • High-Impact Practices
  • Detailed Statistics
MYR: Administration Summaries

• Overview of Data Quality
  - Response rates (RR), respondents, sampling error (SE)
  - Are there any years that aren’t as precise as others?
  - Is sampling error acceptable?

• How was survey administered?
  - Method, sample type, incentives
  - Differences may in part explain RR and SE

• Other data available for Multi-Year Analysis
  - Additional item sets? (Modules and Consortia)
  - Additional surveys (FSSE & BCSSE)

Response Details by Participation Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Response rate</th>
<th>Sampling error</th>
<th>Total respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>32%</td>
<td>+/- 3.7%</td>
<td>472</td>
</tr>
<tr>
<td>2014</td>
<td>34%</td>
<td>+/- 4.3%</td>
<td>350</td>
</tr>
<tr>
<td>2015</td>
<td>18%</td>
<td>+/- 9.8%</td>
<td>225</td>
</tr>
<tr>
<td>2016</td>
<td>31%</td>
<td>+/- 3.6%</td>
<td>486</td>
</tr>
<tr>
<td>2017</td>
<td>35%</td>
<td>+/- 4.0%</td>
<td>439</td>
</tr>
</tbody>
</table>

Administration Details by Participation Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Recruitment method</th>
<th>Sample type</th>
<th>Incentives offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>Email</td>
<td>Census</td>
<td>Yes</td>
</tr>
<tr>
<td>2014</td>
<td>Email</td>
<td>Census</td>
<td>Yes</td>
</tr>
<tr>
<td>2015</td>
<td>Email</td>
<td>Census</td>
<td>No</td>
</tr>
<tr>
<td>2016</td>
<td>Email</td>
<td>Census</td>
<td>Yes</td>
</tr>
<tr>
<td>2017</td>
<td>Email</td>
<td>Census</td>
<td>Yes</td>
</tr>
</tbody>
</table>
MYR: Engagement Results

• Four Engagement Themes
  • Academic Challenge
    • Plus five additional items
  • Learning with Peers
  • Experiences with Faculty
  • Campus Environment

• Interpreting Results
  • Point Estimates = Average student response
  • Confidence Interval (CI) = Possible estimate error
  • Do CIs overlap?
  • Do patterns illustrate patterns of change or stability?

What can institutions A & B say about their 2017 EI results?
MYR: High-Impact Practices

- Six High-Impact Practices (HIP)
  - Learning Community
  - Service-Learning
  - Research with Faculty
  - Internship (FY = plan to do)
  - Study Abroad (FY = plan to do)
  - Culminating Senior Experience (FY = plan to do)

- Overall FY/Senior HIP participation

- Interpreting Results
  - Point Estimates = Average student participation
  - Confidence Interval (CI) = Possible estimate error
  - Do CIs overlap?
  - Do patterns illustrate patterns of change or stability?

What can institutions A & B say about their 2017 HIP results?
**MYR: Detailed Statistics**

- Detailed information for all MYR results
  - Mean
  - n
  - Standard Deviation
  - Standard Error of Mean
  - CI Upper Bound
  - CI Lower Bound

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Higher-Order Learning</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>39.9</td>
<td>38.4</td>
<td>39.3</td>
<td>41.1</td>
<td>38.6</td>
</tr>
<tr>
<td>n</td>
<td>427</td>
<td>228</td>
<td>249</td>
<td>450</td>
<td>427</td>
</tr>
<tr>
<td>SD</td>
<td>13.4</td>
<td>12.1</td>
<td>12.6</td>
<td>13.8</td>
<td>11.2</td>
</tr>
<tr>
<td>SE</td>
<td>64</td>
<td>.67</td>
<td>.65</td>
<td>.62</td>
<td>.54</td>
</tr>
<tr>
<td>CI upper bound</td>
<td>41.2</td>
<td>39.7</td>
<td>40.6</td>
<td>42.4</td>
<td>39.7</td>
</tr>
<tr>
<td>CI lower bound</td>
<td>38.7</td>
<td>37.1</td>
<td>38.0</td>
<td>39.9</td>
<td>38.6</td>
</tr>
<tr>
<td><strong>Reflective &amp; Integrative Learning</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>36.9</td>
<td>36.2</td>
<td>36.8</td>
<td>38.0</td>
<td>34.5</td>
</tr>
<tr>
<td>n</td>
<td>445</td>
<td>355</td>
<td>376</td>
<td>458</td>
<td>435</td>
</tr>
<tr>
<td>SD</td>
<td>12.7</td>
<td>11.4</td>
<td>12.0</td>
<td>13.1</td>
<td>10.1</td>
</tr>
<tr>
<td>SE</td>
<td>60</td>
<td>.62</td>
<td>.61</td>
<td>.59</td>
<td>.48</td>
</tr>
<tr>
<td>CI upper bound</td>
<td>38.1</td>
<td>37.4</td>
<td>38.0</td>
<td>39.1</td>
<td>35.5</td>
</tr>
<tr>
<td>CI lower bound</td>
<td>35.7</td>
<td>34.9</td>
<td>35.6</td>
<td>36.8</td>
<td>33.6</td>
</tr>
<tr>
<td><strong>Learning Strategies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>41.9</td>
<td>39.2</td>
<td>40.5</td>
<td>45.2</td>
<td>36.7</td>
</tr>
<tr>
<td>n</td>
<td>405</td>
<td>304</td>
<td>342</td>
<td>417</td>
<td>391</td>
</tr>
<tr>
<td>SD</td>
<td>13.6</td>
<td>12.9</td>
<td>13.3</td>
<td>14.1</td>
<td>12.8</td>
</tr>
<tr>
<td>SE</td>
<td>68</td>
<td>.74</td>
<td>.71</td>
<td>.66</td>
<td>.65</td>
</tr>
<tr>
<td>CI upper bound</td>
<td>43.2</td>
<td>40.6</td>
<td>41.9</td>
<td>44.4</td>
<td>37.9</td>
</tr>
<tr>
<td>CI lower bound</td>
<td>40.6</td>
<td>37.7</td>
<td>39.1</td>
<td>41.9</td>
<td>35.4</td>
</tr>
<tr>
<td><strong>Quantitative Reasoning</strong></td>
<td>32.1</td>
<td>30.2</td>
<td>31.2</td>
<td>33.1</td>
<td>25.6</td>
</tr>
<tr>
<td>n</td>
<td>424</td>
<td>328</td>
<td>368</td>
<td>447</td>
<td>425</td>
</tr>
<tr>
<td>SD</td>
<td>16.1</td>
<td>14.6</td>
<td>15.2</td>
<td>16.5</td>
<td>14.0</td>
</tr>
<tr>
<td>SE</td>
<td>77</td>
<td>.80</td>
<td>.79</td>
<td>.75</td>
<td>.68</td>
</tr>
<tr>
<td>CI upper bound</td>
<td>33.7</td>
<td>31.8</td>
<td>32.7</td>
<td>34.6</td>
<td>30.9</td>
</tr>
<tr>
<td>CI lower bound</td>
<td>30.6</td>
<td>28.6</td>
<td>29.6</td>
<td>31.6</td>
<td>26.3</td>
</tr>
</tbody>
</table>
NSSE’s Report Builder

Has student-faculty interaction for first-year, first-generation students improved over the past five years?
Analytical Approaches

• Practical difference
  • Effect Size
  • Percentage Change

• Statistical difference
  • t-tests
  • ANOVA
    • Needs at least three years of data
    • Can use statistical controls
  • Regression
    • Can use statistical controls

• Trend analyses
  • Linear and non-linear estimations
When Should You Use NSSE Weights?

• NSSE weights by gender (male/female) and enrollment status (full-time/part-time) within each class level (first-year/senior).

• When applied to a statistical calculation, weighting adjusts your results so that the proportions of respondents by those characteristics match the proportions in the full population in that year.

• Because NSSE weights are created based on the full population, they should not be used when analyzing only a subset of the population.

Bottom line: Use weights when running statistics on full respondents sets from each year, but do not use weights when analyzing only a subset of respondents.
Has participation in undergraduate research (HIP) for senior women improved since 2014?

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percentage “done”</th>
<th>Statistical Difference?</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>59</td>
<td>31%</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>76</td>
<td>32%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>70</td>
<td>25%</td>
<td>YES***</td>
<td>.15 (small)</td>
</tr>
<tr>
<td>2017</td>
<td>91</td>
<td>31%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Multi-Year Results

Percentage of Seniors Doing Research with Faculty by Gender

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>25%</td>
<td>31%</td>
</tr>
<tr>
<td>2017</td>
<td>25%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Percentage of Seniors Doing Research with Faculty by Gender

- No research
- Male
- Female

2014
- 44% Male
- 56% Female
- 31% No research

2017
- 37% Male
- 63% Female
- 32% No research
Multi-Year Results

Seniors: About how many courses included a community-based project (service-learning)?

- Most/All
- Some
- None

Year Results:
- 2013: Some (75%), None (25%)
- 2014: Some (75%), None (25%)
- 2015: Some (75%), None (25%)
- 2016: Some (75%), None (25%)
- 2017: Some (75%), None (25%)
Multi-Year Results

Estimated Number of Written Pages

Number of Pages Written

First-year
Senior
Multi-Year Results

Estimate Hours/Week in Academic Preparation

Hours per week

- First-year
- Senior
Multi-Year Results

Percentage of excellent ratings of the quality of academic advising by major category

- Arts and Humanities
- Biological Sciences
- Business
- Education
- Engineering
- Physical Science
- Social Science
Have a Multi-Year Story to Tell?

• We are always looking for new institutional stories to feature in NSSE publications such as our Annual Results and Lessons from the Field.

• How do you use NSSE multi-year data? Interesting analyses or visual displays to share?

• What stories of change and improvement have you been able to tell about student engagement on your campus?

Your stories are instructive and inspiring for other colleges and universities to use in their NSSE results to improve undergraduate education.
Thank You

More questions? Contact us for additional information and resources!

Bob Gonyea and Rick Shoup
Center for Postsecondary Research
Indiana University School of Education
nsse@indiana.edu
812-856-5824

Web: nsse.indiana.edu
Twitter: @NSSEsurvey
Facebook: @NSSEsurvey
Blog: NSSEsightings.indiana.edu