Does the NSSE survey produce similar results when administered to different cohorts of students at the same institutions over time?

Purpose
Based on the NSSE Psychometric Reliability Framework, one way to estimate reliability, specifically the temporal stability, of NSSE results is by an institution-level correlation analysis. Assuming no major shifts in an institution’s policies, we would expect an institution to have relatively similar benchmark scores from one year to the next. It is possible that results for a given institution may vary substantially from one administration to another—this is more likely to occur for schools that have a small number of respondents.

Data
In 2009, benchmark scores for 283 institutions that participated in both the 2008 and 2009 NSSE survey administrations were analyzed. One limitation of these data is that institutions were not randomly selected for participating in both years of the survey. Using 2005 Carnegie classifications, 44 (16%) of these institutions were doctoral-level, 120 (42%) were master’s level, 100 (35%) were baccalaureate, and 19 (7%) were of other classifications. One hundred and two (36%) of these institutions were classified as publicly controlled and 181 (64%) as privately controlled.

Methods
Correlations, quantified using Pearson’s r, were conducted using the five NSSE benchmarks, comparing the institution’s benchmark scores in 2008 to their benchmark scores in 2009. Pearson’s product-moment correlation coefficients, or Pearson’s r, range in value between negative and positive one. Values closer to one indicate a stronger relationship between institutions’ first and second benchmark score; values closer to zero indicate a weaker relationship between the two benchmark scores. Additional analyses were performed on subgroups of these institutions defined by their Carnegie and control classification. Tabled results of these analyses can be found at the end of this document.

Results
Values of the Pearson’s r correlation results for the overall analyses can be found in Table 1. Correlations range between .741 for first-year Student-Faculty Interaction and .939 for senior Enriching Educational Experiences. Litwin (2003) suggests that correlations that are at least .70 are reasonable indicators that survey responses are consistent from one point in time to another. Although

This report is part of NSSE’s Psychometric Portfolio, a framework for presenting our studies of the validity, reliability, and other indicators of quality of NSSE data, available online at nsse.iub.edu/links/psychometric_portfolio.
correlations tend to be slightly higher for senior students than first-year students, all correlations are above .70. This suggests that institution-level NSSE data are relatively stable from year to year.

<table>
<thead>
<tr>
<th></th>
<th>Level of Academic Challenge</th>
<th>Active and Collaborative Learning</th>
<th>Student-Faculty Interaction</th>
<th>Enriching Educational Experiences</th>
<th>Supportive Campus Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-Years</td>
<td>.870</td>
<td>.802</td>
<td>.741</td>
<td>.833</td>
<td>.788</td>
</tr>
<tr>
<td>Seniors</td>
<td>.864</td>
<td>.869</td>
<td>.885</td>
<td>.939</td>
<td>.806</td>
</tr>
</tbody>
</table>

In the additional Tables 2-5 at the end of this document, correlations are presented by Carnegie Classification and by private/public control. Generally, benchmark scores are most reliable for Doctoral granting institutions and least reliable for Baccalaureate granting institutions. This mostly likely reflects the ability of Baccalaureate granting institutions to make more changes from year to year than Doctoral granting institutions. When analyzing correlations divided by Carnegie classification, the only correlations below .70 occur for Baccalaureate institutions: Active and Collaborative Learning and Student-Faculty Interaction for first-year students and Supportive Campus Environment for seniors.

With regard to private/public control, correlations range between .668 and .854 for first-year students and between .719 and .927 for seniors. The only correlation below .70 is for first-year Student-Faculty Interaction at privately controlled institutions. Although benchmark scores for both privately and publically controlled institutions are relatively stable from year to year, students at publicly controlled institutions have more stable Active and Collaborative Learning and Student-Faculty Interaction scores whereas students at privately controlled institutions have more stable Enriching Educational Experiences scores.

Overall, correlations tend to be highest for Enriching Educational Experiences than for the other benchmarks, particularly for seniors. Examples of activities in the Enriching benchmark include study abroad, culminating senior experiences, and learning communities. These high correlations are likely due to institutions offering the same enriching experiences year-to-year. The lowest correlations tend to be for Supportive Campus Environment and Student-Faculty Interaction. As most of the items in these two benchmarks involve interactions with others, particularly faculty members, the lower correlations may be due to the changing population of staff and faculty year-to-year.

---

1 All correlations are significant at the p < .01 level.
References

NSSE Psychometric Portfolio. (2009). Bloomington, IN: Center for Postsecondary Research, Indiana University, School of Education. [www.nsse.iub.edu](http://www.nsse.iub.edu)

NSSE Psychometric Reliability Framework. (2009). Bloomington, IN: Center for Postsecondary Research, Indiana University, School of Education. [www.nsse.iub.edu](http://www.nsse.iub.edu)
Additional Tables

Table 2  First-Year 2008-2009 Benchmark Correlations by Carnegie Classification

<table>
<thead>
<tr>
<th>Level of Academic Challenge</th>
<th>Active and Collaborative Learning</th>
<th>Student-Faculty Interaction</th>
<th>Enriching Educational Experiences</th>
<th>Supportive Campus Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral</td>
<td>.912</td>
<td>.851</td>
<td>.814</td>
<td>.891</td>
</tr>
<tr>
<td>Master’s</td>
<td>.841</td>
<td>.825</td>
<td>.730</td>
<td>.762</td>
</tr>
<tr>
<td>Baccalaureate</td>
<td>.869</td>
<td>.648</td>
<td>.572</td>
<td>.831</td>
</tr>
<tr>
<td>Other</td>
<td>.846</td>
<td>.900</td>
<td>.803</td>
<td>.904</td>
</tr>
</tbody>
</table>

Table 3  Senior 2008-2009 Benchmark Correlations by Carnegie Classification

<table>
<thead>
<tr>
<th>Level of Academic Challenge</th>
<th>Active and Collaborative Learning</th>
<th>Student-Faculty Interaction</th>
<th>Enriching Educational Experiences</th>
<th>Supportive Campus Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral</td>
<td>.900</td>
<td>.900</td>
<td>.850</td>
<td>.946</td>
</tr>
<tr>
<td>Master’s</td>
<td>.867</td>
<td>.890</td>
<td>.858</td>
<td>.911</td>
</tr>
<tr>
<td>Baccalaureate</td>
<td>.853</td>
<td>.799</td>
<td>.787</td>
<td>.924</td>
</tr>
<tr>
<td>Other</td>
<td>.764</td>
<td>.857</td>
<td>.908</td>
<td>.949</td>
</tr>
</tbody>
</table>

Table 4  First-Year 2008-2009 Benchmark Correlations by Control

<table>
<thead>
<tr>
<th>Level of Academic Challenge</th>
<th>Active and Collaborative Learning</th>
<th>Student-Faculty Interaction</th>
<th>Enriching Educational Experiences</th>
<th>Supportive Campus Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>.772</td>
<td>.807</td>
<td>.799</td>
<td>.760</td>
</tr>
<tr>
<td>Private</td>
<td>.854</td>
<td>.747</td>
<td>.668</td>
<td>.819</td>
</tr>
</tbody>
</table>

Table 5  Senior 2008-2009 Benchmark Correlations by Control

<table>
<thead>
<tr>
<th>Level of Academic Challenge</th>
<th>Active and Collaborative Learning</th>
<th>Student-Faculty Interaction</th>
<th>Enriching Educational Experiences</th>
<th>Supportive Campus Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>.841</td>
<td>.878</td>
<td>.905</td>
<td>.894</td>
</tr>
<tr>
<td>Private</td>
<td>.835</td>
<td>.847</td>
<td>.846</td>
<td>.927</td>
</tr>
</tbody>
</table>

2 All correlations are significant at the p < .01 level.