Supplemental Instruction Outcomes Assessment Overview
2013-2014

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Abstract
Assessments of the Supplemental Instruction (SI) program determine whether students who attend SI sessions earn higher final course grades than students who do not attend SI sessions. This report provides an overview of SI participation during the 2013-2014 academic year, which continues to demonstrate a positive influence on students’ academic success, and continues to show significant growth in the use of SI.

Program
SI is an academic support program utilizing peer-assisted study sessions to enhance student performance and retention. Deanna Martin, Ph.D., at the University of Missouri at Kansas City, first developed it in 1973. In 1992, Iowa State University established a SI program targeting traditionally difficult entry-level courses that result in a high percentage of D or F grades and withdrawal rates. Since its implementation, students who have attended SI sessions:
- Earned statistically significant higher final course grades,
- Withdrew from courses less frequently than non-participants.

Executive Summary
Purpose
Our general outcomes assessment of SI fulfills the following purposes:
- To continue ongoing reporting of participation data collected by the Supplemental Instruction staff,
- To report statistics comparing participants in SI to non-participants, and
- To disseminate findings to faculty, students, SI Leaders, Academic and Student Affairs Administrators.
This report also provides the general framework for additional data analysis and reporting. Additional reports address other research questions about SI.

Methodology
We obtained course rosters from the Registrar’s Office each semester without the students’ prior consent under the following provision in the Family Education Rights to Privacy Act: 34 CFR Part 99. The rosters contain students’ demographic and academic variables. The data are merged into a database created using the statistical software SPSS. SI Leaders track attendance at each SI section, and participation data are regularly entered into the database. Data entry is a primary responsibility of the Undergraduate Research Assistant.

At the end of each semester, we merged final course grades into the database to compare participants and non-participant course outcomes. We maintain confidentiality of personal information and do not report students’ names. Additional coding enables simplified reporting. Comprehensive reports including descriptive statistics of SI Participants and Non-Participants, summary reports for each class including final course grades, number of SI sessions attended, mean number of sessions attended, mean size of SI sessions, and final course grade according to number of SI sessions attended. We completed additional reports for special programs on campus and to assess specific features of the SI program.

Findings
The findings reported are based on data collected for all courses over the entire 2013-2014 academic year. Highlights for the academic year include:
- We offered SI for 26 courses during the fall semester, and 27 courses in the spring. The final course grade for SI Participants was significantly higher for 16 fall courses and 18 spring courses. For the other courses, there was no statistically significant difference in final grades between SI Participants and Non-Participants.¹

¹ Variations across sections of the same course are the reasons why final grades may be significantly different between participants and non-participants for some sections, but not significant the full course.

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• 78.0% of SI Participants received a final grade of C or higher, compared to 65.9% of Non-Participants.
• Non-Participants (8.0%) were nearly twice as likely to withdraw from a course than SI Participants (4.3%).
• 80.5% of SI Participants believe SI helped them earn at least a ½ letter grade improvement in the course.
• 95.8% of students’ ratings of their SI Leaders’ skills (on six qualities) were “Satisfactory,” “Good,” or “Excellent.”

**TABLE 1: SI Participant and Non-Participant Group Comparison**

<table>
<thead>
<tr>
<th></th>
<th>SI Participants (N=10,307)</th>
<th>SI Non-Participants (N=22,523)</th>
<th>All Students (N=32,830)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Combined A, B, C</td>
<td>89,043</td>
<td>78.0%</td>
<td>14,837</td>
</tr>
<tr>
<td>Combined C-, D, F, Drop</td>
<td>2,264</td>
<td>22.0%</td>
<td>7,686</td>
</tr>
<tr>
<td>Mean Final Course Grade</td>
<td>2.69***</td>
<td></td>
<td>2.41***</td>
</tr>
</tbody>
</table>

*** Significant difference of means at p<0.001

**Note:** Audits, transfer credits, incompletes, and pass/not pass grades are not included in the analyses.

**TABLE 2: Student Success Based on Level of Participation in SI**

<table>
<thead>
<tr>
<th></th>
<th>Mean Final Grade</th>
<th>N</th>
<th>% of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Participants</td>
<td>2.41</td>
<td>20719</td>
<td>--</td>
</tr>
<tr>
<td>Students attending 1 SI Session</td>
<td>2.52</td>
<td>1376</td>
<td>13.95%</td>
</tr>
<tr>
<td>Students attending 2-5 SI Sessions</td>
<td>2.61</td>
<td>5140</td>
<td>52.12%</td>
</tr>
<tr>
<td>Students attending 6-9 SI Sessions</td>
<td>2.79</td>
<td>1703</td>
<td>17.27%</td>
</tr>
<tr>
<td>Students attending 10 or more SI Sessions</td>
<td>2.98</td>
<td>1643</td>
<td>16.66%</td>
</tr>
</tbody>
</table>

*Note that 4.3% of the SI Participants do not appear in Table 2 because they dropped out of the course. Hence, they do not have a quantifiable final grade.

**TABLE 3: Summary of Additional Participation Data**

| Number of SI Sessions Offered During the Academic Year | 3,696 |
| Total Number of Students Attending SI                  | 10,307|
| Total Contact Hours of SI Participants                 | 58,302|
| Mean Number of Sessions Attended by SI Participants    | 5.7   |
| Mean Size of SI Sessions                               | 15.8  |
| Highest Number of SI Sessions Attended by One Student for One Course | 76    |

**Discussion and Recommendations**

Once again, annual contact hours with students in SI sessions has increased over the previous year. Consider the following comparisons:

<table>
<thead>
<tr>
<th></th>
<th>Eight Year Change Since 05-06</th>
<th>One Year Change Since 12-13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in Number of Students with SI Available</td>
<td>115.2%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Increase in Number of SI Participants</td>
<td>139.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Increase in Number of Contact Hours in SI Sessions</td>
<td>222.1%</td>
<td>22.0%</td>
</tr>
</tbody>
</table>

We use these comparisons to tell the story:
• SI is available to far more students,
• More students (by number and rate) are participating in SI, and
• Those who participate use SI more often.

Our decisions of how to use SI Leaders, and quality of Leaders’ facilitation, pushed these statistics higher than the rate of enrollment growth over similar periods.
Amidst the successes demonstrated by frequencies, there are still challenges as follows:

- There are more courses for which SI could (or should) be offered, as shown within the Registrar’s final course grade data.
- For some courses where SI is offered, our support (in count of SI sessions offered) is low. More Leaders, or a change to the Leader position, could increase the number of sessions.
- Our state allocated funding increased by $50,000 in FY14, a long-overdue amount that did not go as far as expected. (We overspent in FY12 and FY13. Refer to additional reports on our financial situation.) In short, any future loss or gain in $1800 increments is the loss or gain of one SI Leader position for one semester.

Based on other reports and experiences with SI, we plan to make the following improvements for fall 2014:

- Integration of StrengthsQuest into staff development activities. We anticipate a Strengths-based approach to skill development to further improve Leaders’ facilitation of SI sessions.
- Implementation of a staff retreat, to occur at a point when SI Leaders have some experience, yet are most open to change. We will target the fourth week of the semester, and use the retreat in place of staff development strategies with lesser value.
- Higher expectations for Mentors, with slight variations in responsibilities, to ensure SI Leaders receive the best support possible.
- Integration of visual mapping into SI Leader observations.
- Revised expectations for SI Leaders, including:
  - Changing staff development commitments to accommodate the Leader retreat.
  - Emphasis on website communication.
  - Emphasis on development of worksheets and handouts.

Finally, Craig attended the 8th International Conference on Supplemental Instruction in May, 2014. While at the conference, it was clear to him that the SI program ISU:

- Regularly serves as a reference/model for other universities, based on the count of people who attended his presentations and count who expressed prior use of our references.
- Has no (not that Craig could find) peer program, based on the:
  - Count of Leaders we support per semester.
  - Number of students served.
  - Number of contact hours students accumulate.
  - Number of course served.
  - Budget.

While Craig could find peer institutions based on 1 or 2 of the above, he did not find a peer on all five. Budget was a key for comparison: We serve more students for far less money than the staff at peer institutions Craig met during the conference. Hence, SI at Iowa State University is very efficient with its use of funds for SI.