

Iowa State University
Dean of Students Office
Supplemental Instruction-Academic Success Center

Supplemental Instruction: Outcomes Assessment 2003-2004

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Abstract

Each semester five assessment activities including a pre-semester survey, end of semester survey, summary reports, faculty survey, and SI Leader reflection are conducted using a variety of quantitative and qualitative methodologies to determine the impact of the Supplemental Instruction (SI) program at Iowa State University. The results continue to demonstrate that SI participants earn statistically significant higher mean final course grades than non-participants despite having lower pre-entry characteristics. SI participants are satisfied with the quality of the SI leaders and would overwhelmingly recommend SI to a friend. Non-participants would like additional sessions offered at a variety of times and locations to better meet their needs. Faculty report SI positively contributes to their course outcomes. SI Leaders report that the position has enhanced their knowledge of the subject matter and personal development.

Program Description

Supplemental Instruction (SI) is an academic support program developed by Deanna Martin, Ph.D. at the University of Missouri at Kansas City in 1973 that utilizes peer assisted study sessions to enhance student performance and retention. The foundation and theoretical framework for SI is based on student development theory, cognitive development theory, learning collaboration methods and retention research. In 1992, Iowa State University established a Supplemental Instruction program to assist students with traditionally difficult 100-200 level courses—those with a high percentage of D or F grades and withdrawal rates.

The Supplemental Instruction model is a unique academic support program that targets difficult courses rather than high-risk students. This voluntary program is not viewed as remedial as it is open to all students enrolled in the targeted course. A peer student leader called an SI Leader is hired and trained to facilitate regularly scheduled study sessions to assist students with course content and study skills. This student attends lecture regularly and plans two 90-minute study sessions per week. The SI Leader does not re-lecture to the students but rather utilizes collaborative learning strategies to assist students.

SI directly supports Iowa State University's mission by collaborating with academic departments to provide an *exceptional learner-centered enrichment opportunity*, enhancing and improving the overall learning experience for students. SI has been proven nationally and at ISU to improve student retention and student success. Because the program is voluntary and open to all enrolled students, it fosters a climate promoting intellectual diversity, and inclusivity.

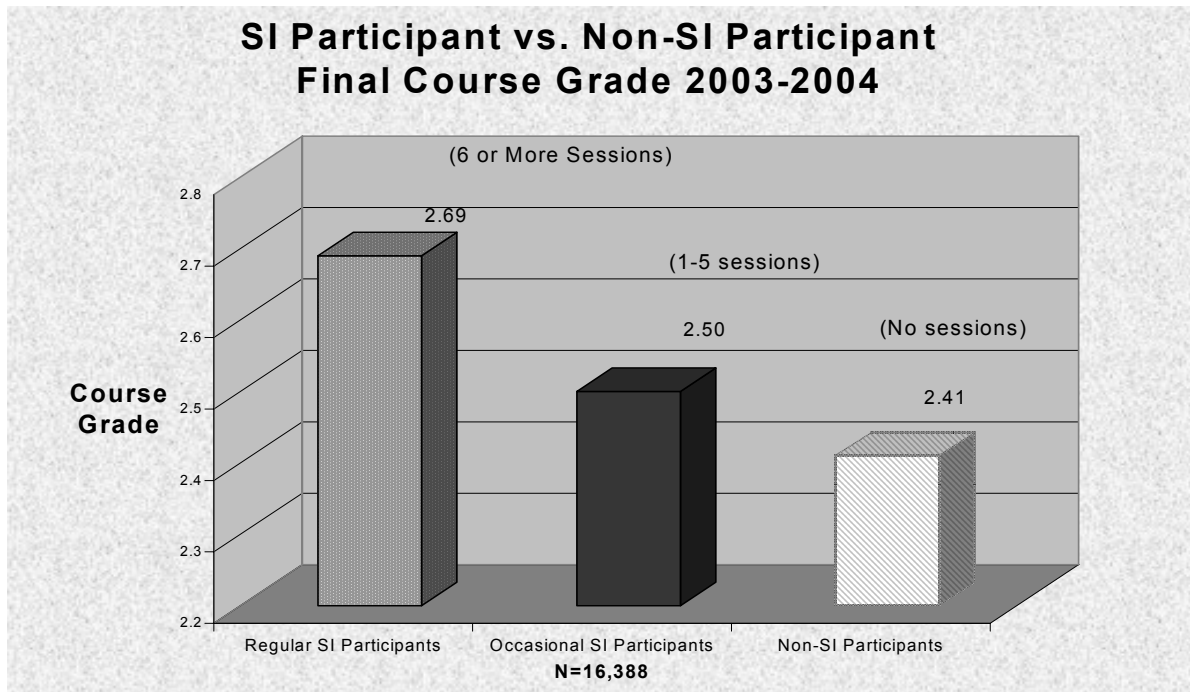
Contact Kari Hensen khensen@iastate.edu to view complete assessment reports summarized in this report.

SI Participation Data 1993-2004

Year	Course Enrollment	SI Participant Status	# SI Leaders	SI Final Course Grade	Non-SI Final Course Grade	Sig.
1993-1994	1,977	SI 574 (29%) Non 1,403 (71%)	16	2.26	2.01	*
Spring 1995**	1,122	SI 248 (22%) Non 874 (78%)	9	2.27	2.16	*
1995-1996	3,988	SI 875 (22%) Non 3,113 (78%)	21	2.50	2.11	*
1996-1997	6,596	SI 1,325 (20%) Non 5,271 (80%)	33	2.55	2.31	*
1997-1998	7,432	SI 1,615 (22%) Non 5,817 (78%)	36	2.39	2.23	*
1998-1999	11,964	SI 2,132 (18%) Non 9,832 (82%)	37	2.57	2.26	*
1999-2000	8,768	SI 2,909 (33%) Non 5,859 (67%)	54	2.55	2.11	*
2000-2001	11,786	SI 3,718 (32%) Non 8,070 (68%)	60	2.50	2.29	*
2001-2002	16,832	SI 4,318 (26%) Non 12,514 (74%)	62	2.63	2.39	*
2002-2003	18,147	SI 5,046 (28%) Non 13,101 (72%)	66	2.61	2.31	*
2003-2004	16,388	SI 5,020 (31%) Non 11,368 (69%)	65	2.69	2.41	*

*Significant difference of means (F-test) at $p < 0.05$

** Fall 1994 data not available



SI Pre-Semester Survey

Purpose

Survey students enrolled in courses offering SI at the beginning of each semester to assess:

- Students' interest in attending SI
- Number of students repeating course
- Number of students who have participated in SI previously
- Best time to schedule the SI Sessions

Methodology

A three-question, confidential, quantitative, survey with a blank calendar for students to indicate their availability to attend SI is distributed to students enrolled in courses offering SI on the first day of class each semester. SI Leaders provide a 5-minute presentation describing what SI is and how it can assist students with course content and study skills. Following brief instructions, SI Leaders administer and collect the surveys. All surveys are immediately returned to the SI Coordinator and used to schedule the SI session times for the semester. The results are shared with SI Leaders and used to develop strategies for recruiting SI participants based on the findings.

Findings

Fall 2003

- 4,650 students completed surveys out of 7,342 enrolled in courses offering SI (63%)
- 91% indicated a strong to moderate interest in attending SI
- 7.4% had been previously enrolled in course
- 33.1% had attended SI sessions previously

Spring 2004

- 3,632 students completed surveys out of 5,442 enrolled in courses offering SI (67%)
- 88% indicated strong to moderate interest in attending SI
- 8.9% had been previously enrolled in course
- 48.2% had attended SI sessions previously

Discussion & Recommendations

The pre-semester survey provides useful information for scheduling the SI sessions and understanding the needs of students enrolled in courses offering SI. Based on the number of students who complete surveys, additional inquiry is needed to answer the following questions. First, are only 60% of enrolled students attending class on the first day or do are many students not participating in the survey? Additional inquiry is needed to determine if more students would participate in the survey if it were administered later in the week, rather than on the first day. Second, if only interested students are completing the surveys, this may account for the high percentage of students indicating a strong to moderate interest in the program.

Consider asking students to provide their Student Identification Number on their survey so their interest level in SI could be added to the database to compare pre-interest with actual SI participation rates. At what level do those who show the most interest in participating, actually actively participate in SI? Explore the possibility of linking institutional CIRP data to SI database to account for additional pre-entry characteristics.

SI End of Semester Survey

Purpose

Survey students enrolled in courses offering SI to:

- Assess students' satisfaction with SI
- Identify strategies to strengthen program
- Determine students' perception of impact of participating in program
- Provide feedback to SI Leaders
- Determine reasons why students do not participate in SI
- Identify ways to make additional students participate

Methodology

The End-of-Semester Survey, consisting of twelve quantitative questions and one open-ended question, is administered to students in conjunction with departmental course evaluations at the end of each semester. SI Leader's distribute the survey and ask each student to complete one side of the survey only. One side of the survey is for SI participants and one side is for non-SI participants. Surveys are collected and taken to Testing and Evaluation services for processing. Reports including transcriptions of the qualitative questions are produced for each individual SI Leader and a composite report is created for the semester.

Findings

Fall 2003

- 2,790 students completed surveys- 1,265 SI participants & 1,525 non-SI participants (30%)
- 86% SI participants rate SI Leader's knowledge of subject matter, communication style, patience, reliability, and approachability as good or excellent.
- 72% agree or strongly agree SI improved academic skills
- 88% would recommend SI to a friend.
- 48% of non-SI participants did not attend due to schedule conflicts & would attend if there were more sessions offered
- Qualitative comments: Praise of SI Leader, time & location changes needed, and suggestions for session strategies and SI Leaders.

Spring 2004

- 2,867 students completed surveys-1,130 SI participants & 1,737 non-SI participants (32%)
- 87% SI participants rate SI Leader's knowledge of subject matter, communication style, patience, reliability, and approachability as good or excellent.
- 76% agree or strongly agree SI improved academic skills
- 92% would recommend SI to a friend
- 43% of non-SI participants did not attend due to schedule conflicts & would attend if there were more sessions offered
- Qualitative comments: Praise of SI and SI Leader, suggestions for time and location changes, and comments and suggestions about SI Leader and/or leader.

Discussion & Recommendations

This survey and the findings it provides are important tools for SI Leaders and the coordinator to assess the benefits of SI and recommend changes to improve the SI Program. Specifically, the findings are used to develop programmatic goals and new training modules to assist the SI Leaders with strategies to assist students with course content and study skills.

Summary Reports using SI Database

Purpose

- Establish reporting mechanism for information collected in SI database
- Disseminate findings to faculty, students, SI Leaders, Academic and Student Affairs Administrators
- Create reports for interested departments such as Learning Communities, Student Support Services Program, and the Department of Residence.
- Report descriptive statistics of SI participants and non-SI participants

Methodology

To continually assess the benefits of SI participation at Iowa State University, course rosters are obtained 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 the student's first and last name, student ID number, course name and section number, college, year in school, birth date, academic major, entry term, admission type, gender, ethnicity code, citizenship code, ACT score, high school rank, e-mail address, learning community team and number, and social security number. This information is entered into a database created using statistical software (SPSS). SI leaders distribute attendance sheets at each SI session to track the names and number of SI participants at each section. This information is regularly entered into the database and used to evaluate the progress of the SI sessions.

At the end of each semester, final course grades are entered into the database to compare participants and non-participant course outcomes. Individual student's names are not reported in outcome data and all information is kept confidential. Finally, additional coding is created to enable and simplify reporting. Comprehensive reports including descriptive statistics of SI participants and non-SI 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, final course grade according to number of SI sessions attended, learning community participation reports, and Student Support Services Program Reports, and Department of Residence Reports are completed each semester.

Findings (Sample from Fall 2003—Data Collected Each Semester)

- SI Participants earn higher mean final course grades than non-SI participants when controlling for pre-entry characteristics (ACT composite score & HS rank)

	SI Participants		Non-SI Participants		Class Average	
Combined A, B, & C	2,362**	81%	4,444**	70%	6,806**	73%
Combined C-,D, F, & W	537**	19%	1,948**	30%	2,485**	27%
Mean Final Course Grade	2.75*		2.54*		2.61	

*Significant difference of means at $p < 0.05$ **chi square $p < 0.05$

There is a relationship between the number of SI sessions students attend and the final grade earned.

Mean Final Course Grade of students attending 1 SI session	2.58
Mean Final Course Grade of students attending 2-5 SI sessions	2.68
Mean Final Course Grade of students attending 6-9 SI sessions	2.81
Mean Final Course Grade of students attending over 10 SI sessions	2.99

- 31% of students enrolled in courses offering SI, participated in SI
- SI participants spent **26,131.5** contact hours at SI--2003-2004
- Mean size of sessions-15.9 students
- 18% SI participants attend 6 or more SI sessions for any one course
- Learning Community participants who attend SI earn significantly higher course grades than class average and non-SI participant learning community participants

Mean Final Course Grade LC participants who attended SI	2.87
Mean Final Course Grade SI participants	2.68
Mean Final Course Grade LC participants who do not attend SI	2.51
Mean Final Course Grade of all students enrolled in courses offering SI	2.61

- 44% (837) of the 1,904 LC participants enrolled in courses offering SI partially funded by learning communities, participated in SI fall 2003 (10% higher participation than general class enrollment)
- LC members represented 39% of the 2,120 total SI Participants and 31% of the total number of students enrolled in courses offering SI funded by the LC allocation.
- LC participants spent 5,076 contact hours at SI sessions accounting for 46% of the contact hours for courses funded by the learning community SI allocation.
- An additional 555 contact hours for SI were attributed to LC participants for courses not funded by the LC allocation. (Overall total contact hours at SI by LC participants=5,631)

- SI sessions held at residence hall locations had considerably less attendance than classroom locations (represented 8.4% of total SI contact hours—Fall 2003)
- SI participants are 48% First-year students, 30% sophomore students, 16% junior
- 58% Male, 42% Female SI Participants
- SI participants from every college at ISU-Agriculture 16%, Engineering 28%, Business 26%, and LAS 20%
- 96% US Citizen Status
- 10.6% Minority students enrolled in courses offering SI (3.6% SI Participants)

Discussion & Recommendations

Continue data collection and dissemination. Focus on increasing number of SI participants who attend 6 or more sessions because these students receive greatest impact of program. Increase number of minority students and SSSP students who participate in SI by working closely with program directors and conducting programs promoting SI to these students. Increase diversity of SI Leader staff to ensure inclusive and supportive environment for all students.

SI Faculty Survey

Purpose

- Assess faculty satisfaction with SI program
- Determine faculty's perception of impact of SI on their students and their teaching strategies
- Receive feedback faculty's perception about SI Leaders performance
- Provide forum for faculty to share students' comments about SI and provide suggestions for program improvement

Methodology

A six-question web survey designed using surveymonkey.com was emailed to faculty teaching courses offering SI at the conclusion of the spring semester.

Findings

Twenty-three surveys were e-mailed and nine were returned via email or campus mail (39% response rate compared to 49% response rate for paper survey administered previously).

- Faculty rated their overall satisfaction with SI 4.4 Mean Score (1-5 likert scale)
- Not all faculty were clear how many students were participating or what impact it had on them. Many faculty reported SI was impactful for those who did attend.
"Those who attend say they benefit from the extra help and the discussion."
- Few faculty reported their teaching strategies changed as a result of offering SI.
*"No, but I pushed attendance at the SI sessions a great deal."
"Not really, I just didn't have to do the homework help sessions like I normally do."*
- Faculty overwhelmingly reported that SI Leaders' were competent and able to assist students
"They loved (SI Leader), thought he was great and lots of help. Overall, it was very helpful to them."

Discussion & Recommendations

Continue to administer the faculty survey, but administer it following fall semester to see if response rates will improve over spring semester administration. Coordinator will attempt to meet with faculty (especially new faculty) early in the semester to reinforce benefits of SI and encourage faculty to interact regularly with SI Leaders. Remind SI Leaders of the importance of meeting regularly with faculty and providing feedback about the number of participants and feedback received.

Continue to encourage faculty to send test grades to SI coordinator so grade analysis can be produced for distribution to class. This will provide immediate feedback to instructors and encourage them to actively promote SI to their students.

SI Leader Reflection

Purpose

- Assess SI Leader's experience and impact it had on their personal & professional development
- Identify ways to strengthen and improve training program
- Illicit feedback about SI Coordinator's role
- Provide opportunity for SI Leaders to provide suggestions for future SI Leaders

Methodology

Each SI Leader completes an SI Leader End of Semester Debrief, consisting of 10 qualitative questions and 8 quantitative questions on a likert scale of 1-5 regarding their personal experiences as a leader and recommendations for improving the program. The surveys are anonymous to ensure the answers are candid and leaders feel comfortable providing suggestions. The SI coordinator utilizes the information gathered to improve the leaders' experience and make changes in the program. Quotes from the survey are included in the new SI Leaders' training manual. This survey is administered each semester.

Findings

- SI Leaders identified the opportunity to assist students and see their grades improve as the most rewarding aspect of their job.
"It was really rewarding to see the same faces over and over again because it meant I was helping the students achieve their goals. Some students would tell me the sessions were helpful and positive feedback is always welcomed. I also enhanced my knowledge in my field."
- Student apathy or inconsistent attendance at sessions is the least rewarding aspect of their job.
"The nights when students wanted me to just do the problem so they could get the answer and be done."
- Leader's said the training session at the beginning of the semester prepared them for their job. Sessions were provided for enhancing the effectiveness.
"Absolutely-It not only helped me become familiar with the procedure, tactics, strategies, etc., but it helped me become familiar with the supervisors and the other new leaders."
- SI Leaders feel positive about the amount of supervision and feedback they receive from SI supervisor.
"Great! It is nice to be independent, but regular meetings provide sufficient supervision and support."
- Suggestions for changes in SI program included strengthening relationships with faculty, changing SI session times, and adding additional SI Leaders.
"I would try to work more closely with instructors in coordination of class-SI sessions."
- Suggestions for future SI Leaders included session strategies, preparation techniques, get-to-know the students, and have fun.
"Do not be intimidated by the position. Have fun running sessions and know that you are there to help, but not expected to know everything."
- SI Leader experience increased communication, leadership, study skills, and organization strategies.
"I feel more confident in my ability to lead/explain concepts. SI has made me consider teaching as a career choice."

Discussion & Recommendations

Continue administering survey each semester and demonstrating how feedback is used regularly. Incorporate SI Leader feedback in training manual for new leaders. Add suggestions to training curriculum.