

## **The Supplemental Instruction Program University of South Carolina**

### **The Institution and Its Students**

Chartered in 1801, the University of South Carolina is located in the state capital of Columbia and offers a comprehensive range of undergraduate and graduate programs through the doctoral level. A major teaching and research institution, USC Columbia is a four-year, public university enrolling more than 18,500 undergraduate students, of whom approximately 3,700 were classified as first-year students in fall 2007. While 33% of undergraduate students are residential, approximately 95% of first-year students live in campus housing. Approximately 18% of undergraduate students represent minorities, with 12% African American, 3% Asian American, and 2% Hispanic. Women represent 55% of the undergraduate students, with men representing 45% of this population. While 90% of the overall undergraduate student population is from South Carolina, approximately 43% of first-year students are from out of state. Five percent of the undergraduate population are over the age of 25.

### **Description of the Initiative**

Supplemental Instruction (SI) is a learning enhancement program developed by Deanna C. Martin at the University of Missouri-Kansas City in 1973. It is designed to help students succeed in high-risk courses in which a significant percentage of students have earned below a C or withdrawn. SI is a peer-facilitated program that uses collaborative learning and active problem-solving techniques in helping students develop a mastery of course content and a repertoire of effective study strategies in a small-group setting. The primary goals of SI are to help students (a) succeed in historically difficult courses (thus reducing the percentage of students who earn below a C or withdraw from these courses), (b) develop effective study habits and learning strategies, and (c) persist to graduation. A secondary goal relates to the leadership development of the peer leaders who facilitate the SI sessions.

The University of South Carolina implemented Supplemental Instruction in fall 2005 after identifying those undergraduate courses with the highest DFW rates (percentage of students who earn below a C or withdraw from the course). These include intro-level biology, chemistry, mathematics, philosophy, psychology, accounting, economics, engineering, and history courses. These historically difficult courses tend to enroll significant numbers of first-year students and also tend to serve as gatekeeper courses into a major. Institutional data indicate that a student's first-year academic progress is the best indicator of whether he or she will persist to graduation; thus the University implemented SI as an intervention to enhance first-year students' grades and hours earned. SI has expanded significantly at USC Columbia during the past two years, with 31 SI leaders serving in seven courses in fall 2005 and 59 SI leaders serving in 21 courses in fall 2008.

SI leaders are undergraduate students who have earned an A in the course for which they are leading sessions and have been recommended by a faculty member. In order to apply for SI leader positions, students complete an online application on which

they indicate overall grade point average, major, related course experience, their personal definition of academic success, advice they would give first-year students, and their responses to scenarios based on situations that have occurred in sessions. Following the application process, students take part in a one-on-one interview with the SI coordinator and/or graduate students working with the SI program. During this interview, staff members are assessing students' level of enthusiasm, approachability, and interpersonal skills in order to identify students who will be able to create an environment in which students feel welcome and comfortable asking questions.

Supplemental Instruction leaders facilitate three out-of-class study sessions a week based on recent lecture material for students currently enrolled in the course. SI leaders also attend each class session with students to stay up-to-date on course material and develop an understanding of the professor's teaching style. SI leaders work closely with the professors teaching their assigned courses in order to review session lesson plans and discuss issues the students are experiencing in the class. In addition to facilitating SI sessions and communicating with professors, the SI leaders serve as model students by taking notes in class and incorporating effective study skills into their SI sessions.

The assistant director for Academic Success Initiatives (who coordinates the SI program), with the help of one 20-hour graduate student and three 10-hour graduate students, supervises and trains SI leaders. SI leaders attend a day-and-a-half training at the beginning of the semester, as well as in-service trainings throughout the semester, that focus on understanding the SI model, building effective partnerships with professors, and using facilitation techniques to encourage students' active involvement in sessions. SI staff members conduct observations of SI sessions throughout the semester to provide additional support and feedback to SI leaders and to ensure that leaders are adhering to the SI model.

## Research Design

An extensive array of quantitative and qualitative assessment methods have been employed to (a) gain a rich understanding of the impact of the SI program, (b) determine whether it is meeting its stated goals, (c) make improvements in program delivery, and (d) justify requests for additional resources. These forms of assessment include the following:

- *Beginning of Semester/End of Semester Surveys.* Distributed to students during the first week of class, the beginning of semester survey asks for students' anticipated SI attendance, frequency of visits, class study time, grade, level of difficulty, confidence, and achievement. This survey is used to encourage students to attend SI sessions, as well as gain student perceptions of class difficulty and likely grade. The end of semester survey asks students for actual SI participation and hours studied for the course to gauge the relationship between students' expectations and outcomes.
- *SI Attendance/Frequency of Visits.* This data is used to compare final grades between SI participants and nonparticipants, as well as to assess the impact of session frequency on final grades. Additionally, it is used throughout the semester

- to identify SI leaders and sections with lower than average attendance in order to provide additional guidance in promoting SI to students.
- *SI Participant Surveys and Focus Groups.* Students participating in two or more SI sessions complete surveys and attend focus groups to gather their opinions about the value of the SI program and their feedback on ways the program can be improved.
  - *SI Leader Surveys and Focus Groups.* SI Leaders complete surveys and attend focus groups to gather their opinions about the benefits they and their students have gained from the SI experience, as well as their feedback on ways their training and supervision can be improved.

## Findings

Data collected through the program assessments demonstrate that the SI program successfully addresses several issues related to students' successful college experience.

### *Improving Student Course Grades*

Significant numbers of students attend SI sessions throughout the semester (Table 1). Five semesters of SI data have shown that students attending at least one SI session earn a higher course grade than students not attending SI sessions. This grade difference is even greater for students attending seven or more SI sessions throughout the semester (Figure 1).

Table 1  
*SI Session Attendance for Fall 2005 Through Fall 2007*

	Students Enrolled in Courses With SI	
	<i>N</i>	%
Fall 2005	963	38.0
Spring 2006	1,217	37.2
Fall 2006	2,060	30.5
Spring 2007	1,527	32.4
Fall 2007	2,079	43.3

*Note.* During fall 2006 and spring 2007, SI was expanded to additional courses.

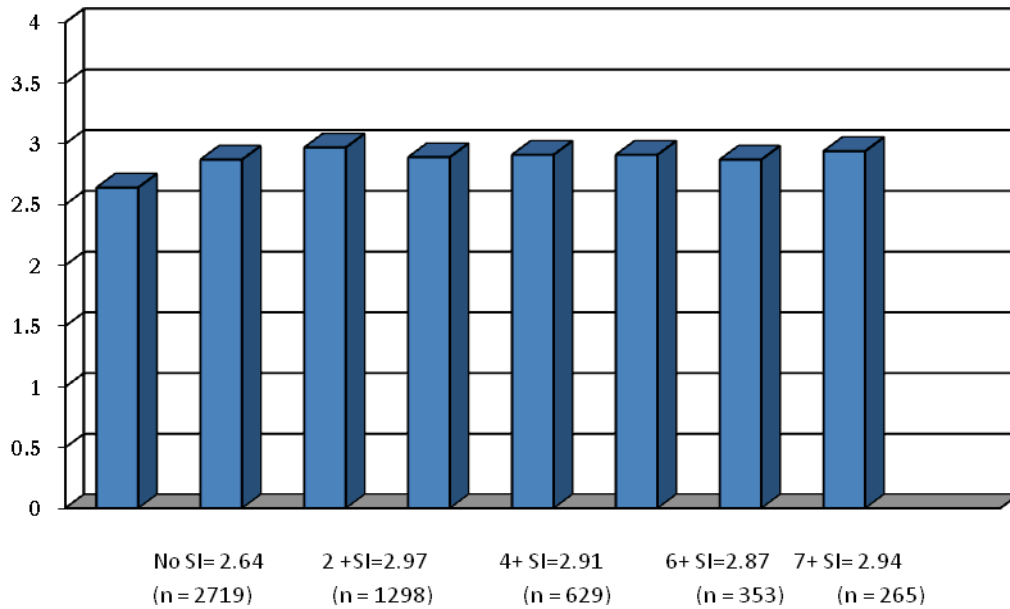


Figure 1. Student attendance for SI sessions, fall 2007

#### *Enhancing Study Skills*

The majority of students (89.7%) who attended SI sessions stated that they agreed or strongly agreed that attending SI helped them develop learning and study strategies. When describing the benefits of attending SI, one student stated, “I understood the course material and was able to understand how to study more effectively for the tests.” Another student stated that “attending SI taught me better ways to study and take notes in class.”

#### *Enhancing Understanding of Course Material*

Students attending SI sessions have opportunities to practice and discuss material they are learning in class, which provides students with an enhanced understanding of the material. For example, one student indicated that “SI gave me a good foundation in introductory biology and chemistry by helping me understand the concepts completely. Now I am benefiting from the sessions in my second semester biology and chemistry classes.” Ninety-six percent of students attending SI in spring 2008 indicated that they strongly agreed or agreed that attending SI helped them gain a better understanding of the course content.

#### *Student Satisfaction With Program*

Of those students attending SI sessions, 98.4% indicated that they would recommend SI sessions to a friend. One student explained SI as a “learning environment that was more personal than what I got in a large class.”

#### *Student Satisfaction With SI Leaders*

One student said, “My SI instructors were great. They put a lot of time and effort into helping me understand the course material better. My grades are definitely higher

because of SI.” Students also describe SI leaders as “knowledgeable on the subject matter.”

#### *Development of SI Leaders*

SI leaders indicate overall that this experience enhances their leadership and public speaking skills. According to one SI leader, leading SI sessions and working with a diverse student population allowed him “to gain multiple perspectives and therefore grow as a person and professional.” Another indicated that she “learned how to work better with others and how to deal with adversities.”

#### *SI Leader Perception of SI Impact on Students*

SI leaders perceive that SI has a positive influence on students’ grades and study skills, sense of academic achievement, and level of self confidence. One leader noted that “the SI program has helped raise the grades of many students and also gave them the feeling like they worked and did all they could do to achieve their good grade.” Another stated, “One student had previously failed/dropped out three times and really had no confidence in the subject at first. He ended up making a B! SI gave him back his confidence in his ability to do math and made a huge difference for him.”

SI leaders perceive that SI is especially useful in helping first-year students successfully make the transition from high school to college-level courses through developing the skills and discipline needed to succeed in a new academically rigorous environment. One noted that SI “helps students learn how to study in a college setting.” Another explained that while “SI helped with grades,” her students saw her as a mentor who could answer questions they had about other issues they were experiencing as first-year students.

#### *SI Leader Perceived Level of Support Received*

When asked about the support they received, one SI leader stated, “I had a great deal of support from our supervisors and from the professor for the class.” According to another SI leader, staff members were also “very helpful in suggesting ways to increase attendance at sessions.”

### **Conclusions**

The data have been used to document the areas in which SI has been effective and to make changes and improvements in the program. For instance, after monitoring two semesters of low attendance patterns in college algebra, the decision was made to offer SI in a business calculus course instead. Additionally, training sessions have been modified based on SI leader feedback to enhance the quality of resources shared with leaders. Staff members also share common challenges from past semesters and facilitation techniques to address those challenges. Data have also been used to expand the program. Grade and DFW rate data, as well as student and faculty feedback, have been instrumental in demonstrating the impact of the SI program, building a sense of credibility within academic departments, and justifying requests for funds to hire additional SI leaders.

The following considerations are recommended to institutions considering the implementation of SI:

1. Identify historically high-risk courses using DFW rate data (percentage of students earning below a C or withdrawing from the course).
2. Gain approval and support from academic departments offering these courses, as faculty support of SI is essential for the program's effectiveness. National SI data from the University of Missouri Kansas City can be used to provide faculty with an overview of the program's effectiveness.
3. Encourage faculty to recommend students for the SI leader positions. Ideally, SI leaders are paired with instructors who have recommended that they apply for these positions.
4. Ensure that your SI leaders receive quality training by basing training and supervision on the University of Missouri Kansas City's SI model and SI leader manual.

In *How College Affects Students* (2005), Pascarella and Terenzini note that “the most influential peer interactions appear to be those that reinforce the ethos of the formal academic program and extend it into nonclassroom settings” (p. 121). Supplemental instruction has had a positive impact on student learning at the University of South Carolina, in part, because of the powerful influence of peers engaging academically with peers outside of class.

## References

Pascarella, E., & Terenzini, P. (2005). *How college affects students (vol. 2): A third decade of research*. San Francisco, CA: Jossey-Bass.

## Primary Contributor

Chrissy Coley  
Business Intelligence Strategic Consultant  
SunGard Higher Education

## Additional Contributor

Julie Holliday  
Assistant Director, Academic Success Initiatives  
University of South Carolina  
Student Success Center  
Thomas Cooper Library  
Columbia, SC 29208  
Phone: 803-777-4169  
E-mail: holliday@sc.edu