

Chapter One: Understanding the Supplemental Instruction Model

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Overview of the Supplemental Instruction Model

Supplemental Instruction (SI) is a student academic assistance program that increases student academic performance and retention. The SI program targets traditionally difficult academic courses--those that have thirty percent or higher rate of D or F final course grades and withdrawals--and provides regularly scheduled, out-of-class, peer facilitated sessions. SI does not identify **high-risk students**, but rather identifies **high risk classes**.

SI thus avoids the remedial stigma often attached to traditional academic assistance programs. SI is open to all students in the targeted course; therefore, pre-screening of students is unnecessary. The program also provides academic assistance during the critical first six week period of class. SI is often attached to traditionally difficult, high-risk courses that serve first and second-year students. However, each institution may develop its own definition of "high-risk courses."

Assistance begins the first week of the term. The SI Leader introduces the program during the first class session and surveys the students to establish a schedule for the SI sessions. The SI sessions are open to all students in the targeted course and attendance is on a voluntary basis. Students of varying abilities participate and no effort is made to segregate students based on academic ability. There is no remedial stigma attached to SI since high risk courses rather than high risk students are identified. Many underprepared students that might otherwise avoid seeking assistance will participate since they see other students participating as well.

SI focuses on both **process** and **content**. Therefore, learning/study strategies (e.g., note-taking, organization, test preparation) are integrated into the course content during the SI sessions. SI sessions provide immediate practice and reinforcement of these acquired skills. SI collaborative sessions capitalize on the use of the "teachable moment" to apply the learning strategies to the course material.

Educational researchers (Dimon, 1988; Keimig, 1983) have concluded that it is difficult to teach transferable study skills in isolation from content material. SI enables students to master course content while they develop and integrate effective learning and study strategies.

SI Addresses Common Factors in Student Attrition

Nationally, high student attrition (fifty percent) among first year college students continues to be a trend (National Center, 1990). Tinto (1987, p. 1) predicted in 1986 that of the nearly 2.8 million students who entered higher education for the first time, over 1.8 million will leave without receiving a degree. Tinto identified four significant factors in student attrition (Spann, 1989; Tinto, 1987): 1) many students feel socially isolated on campus. 2) students have difficulty in adjusting to the new environment. 3) students are not able to link the knowledge received from class lectures to what they already understand and 4) students experience difficulty in the college environment.

SI addresses these four factors. The SI review sessions provide a safe environment for students to discuss and process the course material with others. Students in SI become acquainted with one another as they interact. The SI Leader facilitates the discussion so that students can make adjustments, discuss what they do not understand and discover strategies that unlock the mystery of learning at college. The students experience more academic success in their courses as a result of participating in the SI sessions and learning to use new learning strategies in all their classes.

Integrating Study Skills in SI Review Sessions

It should be evident from the activities already discussed that there are many opportunities to address study skills within the content of the course. Research has shown that teaching study skills in isolation from content has little impact on the students' academic performance (Dimon, 1988; Keimig, 1983). While students can be taught elaborate note-taking and text-reading strategies, these skills are not necessarily put to use in courses that they subsequently take. Also, it is likely that different classes will require different note-taking styles and a science text is certainly used differently than a social science text. As SI Leaders model appropriate questioning and reasoning, students begin to internalize aspects of these strategies that they will carry over into their individual study and into study with other groups.

Processing lecture notes requires students to consider the adequacy of their own note-taking techniques. It quickly becomes evident to many of them that there must be a better method for recording what the professor said than the one they presently use. SI Leader suggestions might include use of summary margin notebook paper (which has a wide left margin), recopying notes that are particularly difficult to decipher, and highlighting notes when appropriate. For many students the usual advice to outline and summarize as they listen to a lecture is both unrealistic and counter productive. If students are completely unfamiliar with the course content, it is virtually impossible for them to listen to the professor, sort out the important points and outline or summarize them.

This is because students often do not have the necessary background to determine what is important. Further, as students attempt to put the lecture into their own words, they omit key vocabulary, terms, or phrases that they need to learn. Instead, students are advised to take down as much information as they can during lecture, bring their notes to the SI and with the help of the SI leader and other students, reorganize and refine their notes. They are then encouraged them to recopy what they have before the next class period.

Organizing and processing information in the SI has far reaching effects for the students. They see that course content is manageable and that with some work and mutual support, they can make sense out of even the most difficult material. Since most students tend to study alone, one of the important insights they will gain from SI is the extent to which discussing the material with other students increases their own understanding of the content. In future courses when SI's are not available, some of these students will form their own study groups.

Additional activities will enhance study skills and can be tied closely to the course content. It is generally not advisable to label these activities as involving study skills improvement but rather to weave the presentation of study skills into the context of material for the course. SI Leaders need to recognize the "teachable moment" and introduce these topics when they can be tied directly to the content review. Often these discussions last only a few minutes at most. Several examples of how this can be accomplished are noted here.

1. After each exam, spend some time going over the questions that were particularly troublesome. This process will reinforce the correct answers on the exam and will give the students a chance to examine how they interpreted the questions; how they derived the answers; and if they made an error, why they made it. The SI leaders should also talk with students about test anxiety and test taking strategies (e.g., marking the easier questions first and returning to harder

questions later, drawing diagrams on the test to help see relationships, outlining essay questions etc.). Reviewing the test will also help students to more thoroughly understand the kinds of questions the professor asks and to predict future test question more accurately.

2. During the first part of the semester, check to see how well students are understanding the text materials. You may identify some serious reading skills deficiencies. A few students may need to be referred to a reading center or to a tutor who can help them increase their reading proficiency.

If the textbook includes graphs, charts, or diagrams, be sure that the students are not omitting these aids from their study of the materials. Students have a tendency to think that graphs, etc are extraneous information, when, in fact, they are usually essential to establishing an understanding of the concept. In some cases, when graphs are used extensively, it is appropriate to review how to read and interpret graphs, as well as review the material they contain.

Straight text reading efficiency can be enhanced through a procedure called "reciprocal questioning." (Manzo, 1969). In brief, a small section of the text is selected for silent reading. Then both the teacher and the students take turns asking and answering questions. When students become active readers, as this procedure requires, they find that the time they must spend in re-reading material is greatly reduced because they comprehend more information during their initial reading.

Examination of text materials in this manner will also help students to discover cues that they can use in deciding what reading rate is correct for specific parts of the text. In some cases, it is acceptable to skim quickly. Other parts of the text will require thorough reading, or re-reading.

3. At times during the semester it will be helpful to direct the students' attention back to the course syllabus. From the syllabus students can anticipate the dates of future tests and the amount of material to be covered between tests. Some discussion can result that will include tips on time management. Students appear to need help in being realistic about how much time is required to prepare for exams and to complete semester long assignments such as term papers. Global statements like "You should be working on your term paper all during the semester." are not helpful; rather, assist students with such matters as deciding approximately how much time they can expect to spend in the library gathering materials, and how much time they should expect to spend in putting the materials together into a paper.

Creating Awareness and Generating Support for SI on Campus

Gaining acceptance for any new student support program has historically been a difficult undertaking, especially in times of limited resources. Additionally, since the impetus for new academic support programs almost always comes from administrators or student affairs staff, there is the risk of a potential opposition among the faculty.

Our experience and reports from other institutions which have adopted SI lead us to the following suggestions for generating on-campus program support.

We strongly recommend a pilot program approach. The best way to generate on-campus support is to have a successful pilot in place. Faculty members who have had positive experiences with SI are the best advocates for the program. At UMKC, we began with one faculty member; by the end of the year, requests for the service exceeded the capacity of existing staff.

Begin a pilot program by eliciting the support of one or two faculty members who are well respected among their peers and who teach entry level courses that are traditionally difficult for students. These faculty should have reputations as excellent instructors who have both rigorous and fair grading standards. They should also be willing to assign a higher than normal distribution of A, B, and C grades if students demonstrate increased levels of performance on examinations.

After conducting the pilot program it is critical to prepare and disseminate final reports. Present the findings to other faculty who may be interested in attaching SI to their courses. We suggest that faculty again be approached individually, in small groups, or in departmental meetings. Invite the instructors who were involved in the pilot to be part of these presentations.

When Supplemental Instruction has been implemented on other campuses without a pilot program to generate initial on-campus support, the service has been less than successful. Feedback from these institutions reveals that faculty raise concerns about (1) cost effectiveness; (2) the appropriateness of an agency other than an academic department offering course specific content assistance; (3) increased faculty workloads; (4) academic freedom; (5) criteria for selecting courses; and (6) extent to which such selection will be viewed as a condemnation of teaching performance. Once such concerns are made public, it is difficult to address them adequately and attempts to do so are often viewed with skepticism. On the other hand, if SI is piloted instead of merely being announced, the program will generate its own support.

One final note - While the UMKC SI Program has not been able to retain all the students with whom we have worked, we have yet to lose a faculty member.

Placement of Administrative Responsibility for SI

Placement of the administrative responsibility for SI varies from institution to institution. In some smaller institutions the program director reports directly to the president or chancellor. Such an arrangement has the clear advantage of immediate contact with the final authority when it come to budgetary support and making decisions about the program. However, gaining access to the chief administrative officer is sometimes problematic. Gaining the kinds of supervisory and professional support the program needs may also be difficult.

Other common practices are to place administrative responsibility within either the division of academic affairs or the division of student affairs. Each arrangement has its advantages and disadvantages.

Placement within academic affairs results in greater line authority when it come to faculty involvement and budge. However, faculty are sometimes more hesitant to allow access to their courses if the SI program director reports to the academic dean. Faculty also may be more reluctant to support program funding if such funding competes with their own departmental requests.

Placing SI within the division of student affairs sometimes leads faculty to view it as ancillary or as a "frill." Moreover, student affairs budgets are proportionally quite low and there is rarely enough flexibility within the available resources to accommodate program expenses once faculty requests for the service escalate. However, even though student affairs budgets are spare, the program can earn a higher funding priority than may be possible within the priorities of academic affairs. Also, faculty may be more willing to invite student affairs personnel than academic affairs administrators into their classrooms.

Funding for SI Programs

Most SI programs have been initiated either directly through external support or by reallocating existing resources; e.g., tutorial funds or resource personnel. Grant requests through Title III, Special Services, Health Careers Opportunity Program, Public Health Service, and the Fund for the Improvement of Post Secondary Education have been among the most productive. Local foundations in some areas have also been willing supporters.

As external resources phase out, ways in which the program can be supported from internal institutional resources include:

1. Work Study Support - As previously mentioned, student SI leaders can be assigned to the program from the work study program. Generally, SI leaders are required to have a high GPA and, most importantly, a strong academic background in the discipline or course for which they are being considered. Students who view themselves as potential teachers or academicians are particularly good candidates.
2. Joint Appointments - As professional staff are selected, it may be possible to arrange a joint appointment between the Learning Center or academic support unit and one of the departments. On this campus, such arrangements exist on a non-tenure track basis and with the stipulation that the professional teach one class a semester for the department. Salary responsibility is shared between the units. Funds from the department are most often allocated through the contingency lecture line.
3. Department Support - Departments who desire continued or additional SI services sometimes agree to pay for the service, particularly if the Learning Center has piloted the service and demonstrated its effectiveness. Another mutually beneficial arrangement is one in which the Learning Center and a department agree to share the cost of conducting an SI. Departments may have contingency funds available or teaching assistant money that is not budgeted. In both arrangements, the Learning Center maintains responsibility for training the SI leader and supervising the SI program.

Cooperative financing will develop over time and will depend upon the way in which academic departments regard the SI support program.

4. Community Projects - The Learning Center staff participates in varied community projects which generate income, e.g., special teaching projects and faculty development in the public schools, summer programs for young people, and providing consulting services to businesses and to private individuals. Money paid to the Learning Center staff is deposited into a revolving account that funds special Learning Center activities. Some of this money augments the regular University funding for the SI's and allows us to add additional SI's if the need is present and University funds are unavailable.
5. Academic Credit - The SI Leaders receive academic credit (e.g., three credit hours) for their work in lieu of receiving a salary. This option gives official recognition of the educational value of the SI experience to the SI Leader instead of only focusing on the value to the participating students. Often the academic credit comes from the School of Education. This experience could be used as an early educational experience for education majors. Students find this option attractive since the credit may be used to fulfill general education requirements. Depending on the

institution's tuition and fees, this option may be more financially attractive to the student than an actual stipend of \$700 or so.

Key SI Program Personnel

There are three key persons involved with SI--the SI Leader, the SI supervisor, and the course instructor. Each of these three persons is important for creating an environment for the SI program to flourish.

The **SI Leader** is a student who has successfully completed the targeted class or a comparable course. It is best if the student took the course under the same instructor that they are now providing SI assistance. The SI Leader is trained in proactive learning and study strategies and operates as a "model student", attending all course lectures, taking notes, and reading all assigned materials. The SI Leader conducts three or more out-of-class SI sessions per week, during which the he/she integrates "how to learn" with "what to learn".

The SI Leaders participate in pre-term training workshops that emphasize the following topics: theoretical bases of learning; teaching methods and forms of learning assistance that are useful in helping students assimilate the course content; strategies for the introduction of study strategies into the course material review; possible problems that might be encountered during SI review sessions; and actual practices sessions using the SI learning strategies with prerecorded lectures of UMKC professors. SI Leaders receive continued training through regular meetings with the SI Supervisor. Informal training occurs through the supervisor's observation of the SI Leader while they conduct SI review sessions. Feedback and specific suggestions for improvement are given to the SI Leader at that time. This observation by the SI Supervisor is more frequent at the beginning of the semester.

The SI Leader is a **facilitator**, not a **mini-professor**. The role of the Leader is to provide structure to the study session, not to re-lecture or introduce new material. The SI Leader is a "model student" who shows how successful students think about and process the course content. Collaborative learning is an important strategy since it helps students to empower themselves rather than remaining dependent as they might in traditional tutoring. Research suggests that tutoring relationships do not promote transfer of needed academic skills (Dimon, 1988; Keimig, 1983; Martin, et.al., 1990, 1983a, 1983b, 1982, 1981).

A central responsibility is to integrate study skills with the course content. As someone who had performed well in the course, the SI Leader has demonstrated competency of the course material. However, it is important for the SI Leader to share their learning strategies with the other students in the SI sessions. Modeling of "good student behavior" is a key for future success of the SI participants. If the students only learn content material, and not the underlying study strategies that the SI Leader has used to master the material, the students have a high probability of having academic difficulty in succeeding courses.

The **SI Supervisor** is an on-site professional staff person, who implements and supervises the SI Leader. The supervisor is responsible for identifying the targeted courses, gaining faculty support, selecting and training Leaders, and monitoring and evaluating the program. The SI Leaders meet as a group or individually with the supervisor nearly every week during the term. Supervisors of most programs have formal meetings with all SI Leaders together at least three times during the term for follow-up and problem-solving.

The SI Supervisor provides the vital organizational link between a number of important program components: the faculty member of the targeted course; department chairperson of the faculty member; college registrar who provides needed data; administrators in academic and student affairs; coordinator of campus facility reservations for SI review session meetings; and other key personnel on campus.

For the first two to three weeks of the semester, SI Leaders are observed by their SI Supervisor during three to four SI review sessions each week. After that, the SI Supervisor will observe the SI Leader approximately every two weeks throughout the rest of the semester.

After initially being used by several SI programs in the field and tested by the UMKC program, the "student assistant SI Supervisor" has been made an official part of the SI model. In the past, we had only used professional staff members as supervisory personnel. Due to the expansion of the number and type of courses covered by SI at UMKC, the decision was made to hire a student who had been a successful SI Leader for several semesters to serve in a supervisory role.

The student assistant replaced the need to hire an additional professional staff member. This idea was first successfully piloted at the University of Louisville when the SI program grew beyond the supervisory time available from the professional staff. Some of the critical qualities needed in the student assistant is a successful record of several semesters as an SI Leader themselves and their maturity to objectively observe, supervise and manage other SI Leaders.

SI Supervisors attend a three and one-half day training workshop that covers the areas of implementation and management, training, supervision, evaluation, and study strategies. Four workshops are hosted at UMKC each year. Upon request, additional workshops are conducted in the field throughout the year by the UMKC staff and its Certified Trainers.

Follow-up technical assistance is provided through a variety of means. This might include telephone or occasional requested site visits. The UMKC staff follow up all SI adopters with telephone calls and a newsletter. Continued professional development is available through professional development seminars hosted by UMKC and through special interest groups dedicated to SI that are offered at several national educational conferences and at UMKC each year.

The third key person is the **faculty member** who teaches the course where SI is offered. SI is only attached to courses in which the instructor invites and supports SI. The instructor screens SI Leaders for content competency and approves selections.

An essential ingredient of the SI model is faculty cooperation. For this reason, the SI service is only used in the classes of professors who understand and support the concept. The SI Program should be careful not to intrude into classes where the instructor would be an unwilling participant. This policy holds true even if department chairs and deans request that SI be attached to certain classes.

However, if the model is presented clearly and in its entirety, professors generally agree that the addition of Supplemental Instruction to their classes can result in several benefits to them. First, they have a mechanism for referring students for additional help. Class sizes and skill levels of students being what they are, the professor is usually unable to devote as much individual help to students as he/she would like. Therefore, s/he is pleased to know that the SI leader is available to assist students who need additional support.

Second, professors are generally quick to admit that they feel less than competent to help students whose problems are skill-based rather than content-centered.

Third, if they wish, professors can receive feedback from the SI leaders about questions that students bring to the SI sessions. In some cases, professors elect to revise their presentations or to go back over a particular concept. Additionally, many have commented that the feedback has been useful in helping them to determine better ways to present material.

Finally, faculty frequently receive higher student ratings on class evaluations when Supplemental Instruction is attached. This phenomenon occurs because students attribute the benefits of the service to the professor. They feel less anxiety and frustration in their efforts to master the material and appreciate the opportunity to receive assistance that is both convenient and effective and therefore are grateful to the professor for providing them with an avenue to achieve at a higher level than might otherwise have been possible.

Cooperation With Academic Advising

While Supplementary Instruction is used by a full-range of students, it is particularly important to increase the likelihood that newly admitted, high-risk students will participate. At UMKC academic advising and the SI Program work in concert to accomplish this objective.

The advisors receive a list of high-risk students from the registrar. (At UMKC, students designated as high-risk are those who score below the 33rd percentile on standardized entrance exams and rank in the lower one-third of their high school class.) One hour of SI is pre-set for each class. The pre-set sessions are at historically popular times, e.g., the hour before or after class early in the week.

During the advising period, the advisors urge students who appear on the high-risk list to enroll in one or two courses that have SI's attached. For instance, if the student needs to take a history class, the advisor recommends that the student select the class which offers "built-in reviews." If the student agrees, the advisor schedules the class and reserves the hour on the student's schedule for the pre-set SI session. Students do not formally enroll in the SI, nor are they required to accept the advisor's recommendation. However, most students are eager to enroll in the course and section suggested by the advisor.

At UMKC, peer counselors assist academic advisors with preparing schedules. Since many of these peer counselors have participated in Supplemental Instruction, they are helpful in answering students' questions about SI and can attest to its benefits firsthand.

Other advisors to special groups of students also use the list of classes with SI's and the pre-set SI sessions to assist in schedule preparation. These advisors work with athletes and with scholarship students. Thus, it is likely that the students appearing in the classes and in the SI's will vary widely in their academic preparedness. Additionally, students have the freedom to attend any of the scheduled SI's for their class and are not obligated to attend the session which was pre-set on their schedule if one of the other times is judged to be more convenient.

SI Program Results

SI students earn higher course grades and have fewer withdrawals than non-SI participants. SI students typically earn a half grade to a full grade higher than non-

participants. Data also demonstrates that participants have higher re-enrollment and graduation rates than those who do not participate in SI.

SI can be implemented in one course each semester/quarter or in many. The SI model often proves to be more cost effective than traditional individualized tutoring programs (Maxwell, 1991). Faculty and staff from nearly 400 institutions have been trained to implement SI.

Development of the SI Program at UMKC

SI was initiated in 1974 by Deanna C. Martin, Ph.D. at the University of Missouri-Kansas City (UMKC). Over the next five years the SI model was refined and expanded. UMKC is an urban public university of nearly 12,000 students. Nearly half the students are enrolled in graduate or professional schools. The SI program is administered through the Center for Academic Development that Dr. Martin directs.

SI was first used in courses in the UMKC Schools of Medicine and Dentistry. Financial support for the 1974 pilot program was provided by the Kansas City Association of Trusts and Foundations. The SI program then received a grant for the Health Careers Occupation Program (U.S. Department of Health, Education, and Welfare) to serve additional students in the Schools of Dentistry, Medicine and Pharmacy. Following an additional grant from the KCATF, the University supported its expansion throughout the institution's College of Arts and Sciences.

It is important to note that the SI program was initially developed and used at the professional school level. Unlike most student assistance programs that target undergraduate, and particularly first year students, the SI program was initially targeted for the professional school students. These students did not show predisposing academic weaknesses when they were admitted to the professional schools. Most had excellent academic records at the high school level and scored well on college entrance examinations.

However, many of these students had academic difficulty with certain "high risk courses" even though they were not "high risk students". The academic rigor of these courses exceeded the academic preparation by even these well prepared students. As described earlier, these high risk courses had a high percentage of D and F final course grades and withdrawals.

After it was demonstrated that the SI program was successful with professional school students in rigorous courses, it was much easier to transport the program to undergraduate courses. One of the unique features of the SI program is that it has been successful with students from all ranges of previous academic achievement, ethnicity, and gender. Another feature of SI is that its effectiveness is not limited to specific disciplines. It has been effectively used at all levels of the institution (undergraduate, graduate and professional school) and in a variety of academic disciplines.

Validation of the SI Program by the U.S. Department of Education

In 1981, the SI program became one of the few postsecondary programs to be validated by the U.S. Department of Education as an **Exemplary Educational Program**. The program was then eligible to request national dissemination funds from the National Diffusion Network (NDN) of the U.S. Department of Education. Since 1984, the NDN has awarded UMKC approximately \$70,000 each year to assist other institutions in implementing the program. The model was recently revalidated in March

1992 by the Program Effectiveness Panel (PEP) of the NDN. The SI Program is one of the two programs that are officially recognized by the U.S. Department of Education as contributing to increasing student graduation rates.

Scope of the SI Program at UMKC and Other Institutions

UMKC provides all funding for the local campus program. Since SI is offered in nearly twenty courses each year, 40% of the 2,000 freshman and sophomore students in the College of Arts and Sciences have an opportunity to participate. SI programs on other campuses range from modest pilot programs of one or two courses to more ambitious programs of 60 (University of Louisville, Kentucky) and 120 (Weber State University, Utah). Please refer to the appendix for a complete list of institutions that have had personnel trained to start SI at their campus.

SI is currently being used at approximately 400 institutions throughout the United States. SI has since been adopted by institutions in the Arctic Circle, the United Kingdom, Puerto Rico, Grenada, and South Africa.

SI Program Features that Aid in its Success

The impact of the SI program can be quantified by differences in student performance and retention rates. A number of features of the SI model operate to influence higher levels of student academic performance. The program staff, as well as participating faculty and students, speculate that the following factors make substantial contributions:

1. The service is proactive rather than reactive. SI schedules are set during the first week of class, allowing students to obtain assistance before they encounter serious academic difficulty. This is important since many other "early alert" retention programs are not triggered until the student has already earned a D or F on a major examination during the second or third month of the school term.
2. The service is attached directly to specific courses. Reading, learning, and study skills instruction is, therefore, offered in the context of course requirements and as an outgrowth of student questions and concerns. Instruction thus has immediate application. While students may need instruction and practice in effective use of study skills, most will not self-report their need. However, in SI the study strategies are integrated into the review of the content material.
3. The SI Leader's attendance at each class meeting is considered essential to SI effectiveness. Such attendance contrasts sharply with the more common tutorial practice of providing instruction based largely upon the student's perceptions of what occurred in class. These perceptions are often badly distorted and time consuming to report during the academic assistance sessions.
4. SI is not viewed by students as a remedial program. In fact, the first students to volunteer are usually those who tend to be better prepared academically. The willingness of this group to participate works to encourage the participation of less able students who often find it difficult to admit that they need assistance.
5. SI sessions are designed to promote a high degree of student interaction and mutual support. Such interaction leads to the formation of peer study groups and facilitates the mainstreaming of minority and disadvantaged students. Long before the current trend of promoting collaborative learning groups in higher education, SI has relied upon this powerful strategy for the past twenty years.
6. SI can provide an opportunity for the course instructor to receive useful feedback concerning the kinds of problems students encounter. If the course instructor

requests feedback, the SI Leader can share comments or observations from anonymous SI session participants. Students generally hesitate to be candid about academic concerns to course instructors for fear of demeaning themselves. They will, however, openly acknowledge their problems to the resource person whose duty it is to assist in such matters and whose responsibility does not include assessment of their course performance.

7. SI targets high-risk courses rather than high-risk students. It is difficult, if not impossible, to predict with complete certainty which students will drop out and which students will persist. It is much more efficient in terms of time, money, and allocation of personnel to target the high risk classes which provide a formidable hurdle for all students.

Challenging Areas for Implementation of SI

While success varies among and between SI programs, we are not in possession of data that would suggest that SI has any major limitations. We do know, however, that SI is more difficult in content areas where pre-requisite skills are a key variable. For example, if students do not remember any algebra, they will have a particularly difficult time in chemistry. SI can be and is effective in these areas, however. It just takes more time planning by the SI Leader. The clearest evidence we have ever had of failure was in a college where SI was attached to remedial classes. Students refused to attend; the course was not considered demanding or high risk by students. After that experience, we made a point of stressing to adopting institutions that they choose courses that were considered by students and faculty to be high risk.

SI has not been effective for students who cannot read, take lecture notes, write, or study at the high school level. Writing includes note taking and expository writing on essay tests. Thus, SI is most effective in non-remedial settings.

We have also found that the SI model needs to be slightly modified in courses that are problem based and involve practice for mastery. In those circumstances, SI sessions need to be more frequent and sometimes longer in length. For example, a three credit-hour accounting courses where practicing problems is crucial would need to have SI meet often enough so that every type of problem could be reviewed. A similar example would be a calculus class. SI would have to afford adequate time for modeling and practice. Frequently, offering SI more times a week and carefully structuring the SI sessions achieves this goal.

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