

Chapter Two: SI in the First Year of College

Introduction

SI as a Continuation of First Year Experience Programs

Focus on High Risk First Year Classes

SI is Helpful for a Variety of Student Subpopulations

Theoretical Framework for First Year Student Programming

SI Facilitates Development of Community

SI Facilitates Student Involvement with the Institution

SI Facilitates Academic and Social Integration

Research on Affective and Cognitive Development Supports Collaborative Learning

Conclusion

Chapter Two: Supplemental Instruction in the First College Year

Introduction

The first year of college has always presented challenges to both students and institutions. For students, it is one of life's most critical transitions. In fact, the most critical period for first time students is during the initial six weeks of their first semester in college. This is the time most likely for the student to drop out (Martin, et. al., 1983; Noel, et. al., 1985). High student attrition among first year college students continues to be a national trend, especially among institutions with open admissions policies (American College Testing Program, 1992).

There are many academic and social differences between the high school and college. Research studies have examined the period when students are making this transition. A recent study (Weinstein, et.al., 1988) identified six categories of differences between high school and college for the first year college students: academic environment; grading; knowledge acquisition; support; stress; and responsibility (Weinstein, et. al., 1988). The study found that college students had less support from family, friends, and teachers; higher stress due to more difficult academic work, increased responsibility for learning; and increased responsibility for making major life decisions. It is no surprise that first year students are the most prone to withdraw since they have to contend with significant changes in these six categories.

The past thirty years have witnessed a profound change in the attitudes of colleges and universities toward first-year students. From a Darwinian (sink or swim) ethic that prevailed well into the 1960s, many institutions have become in recent years far more concerned about the well-being of those in the first year. Factors that have helped create this concern: the declining numbers of traditional aged students and the financial ramifications of this change; the increasing diversity of students (ethnic, gender, cultural); the increasing numbers of older students; and the uneven and often inadequate academic preparation of entering students.

These issues and others have presented a variety of challenges to the academy. Institutions are concerned with how best to meet student needs in times of shrinking resources. Faculty and staff want first year students to succeed for the sake not only of the students themselves, but also for the sake of the institution's survival and their personal job security.

Not only have the past thirty years witnessed a change in institutional attitudes toward new students, but these years have also seen a related emergence of substantive research on college student development, both cognitive and social. Since 1960, social scientists from several specific disciplines have provided essential information about why students do or do not succeed in the college environment and what characteristics of students and institutions enhance or detract from that success.

SI as a Continuation of First Year Experience Programs

Many institutions are now offering some version of a first year experience program. Sometimes these programs are conducted during an intense workshop before the beginning of the term. Other programs are delivered through weekly meetings during the first weeks of the semester. A few institutions conduct student orientation programs over the entire term. Review of study skill strategies are common components of orientation programs.

Supplemental Instruction is an excellent follow up activity for students who have participated in first year experience programs. SI provides a supportive environment for the immediate application and use of study strategies that were discussed or demonstrated during those programs.

A challenge for first year student programs that are conducted before the beginning of the academic term is that they often rely on lectures concerning study strategies. These instructional sessions are therefore isolated from the actual content material in college courses. Students often feel frustrated when faced with abstract lectures concerning study skill instruction that is dissociated from college content material. Rather than seeing the need for such instruction, many students associate study skill strategy review as appropriate for "other students," those who need remedial or developmental assistance. Students perceive a vested interest in study skill strategies when the skills are directly applied to content courses that the students are currently taking (Martin, et.al., 1983). Faced with an impending exam, students are receptive when they might otherwise be uninterested.

Though students may not have been strong academically during high school, often they believe that they can at least succeed marginally in college. They often underestimate the amount of effort necessary to earn a passing grade. This difficulty in adjustment to the college environment is especially challenging for urban students. "[Urban] students tend to come with a pattern of 'sitting back and making people believe that they know something' and they operate on that assumption, rather than speaking up and saying, 'I need some help here.'" (Hamlen, 1989, pp. 6-7). These students assume that they can exhibit the same behavior as they did at the high school level and expect to "get by." They are genuinely shocked after receiving poor grades on their first major college examination. The students become more demoralized and drop-out prone as they receive poor final course grades in most of their classes.

Until students see the direct application of study strategies to courses in which they are currently enrolled, many will be unable to make the connection and application needed for improved academic performance. Study strategy instruction and practice must be interwoven with the actual course content if students are to benefit maximally.

Supplemental Instruction provides 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 from a social science text. As SI leaders model appropriate questioning and reasoning, students begin to internalize aspects of thinking strategies that will carry over into their individual and group study.

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 may 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, writing potential test questions that can be used for reviewing the material in their notes, correlating notes with outside reading assignments, 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 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 decide 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 the lecture, bring their notes to the SI session and with the help of the SI leader and other students, reorganize and refine their notes. They are then encouraged to recopy their notes before the next class period.

Students find that organizing and processing information during the SI session is a very beneficial experience. 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. Because most students tend to study alone, one of the important insights they 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 sessions are not available, some of these students will form their own study groups.

Additional SI activities will enhance study skills and can be tied closely to the course content. It is generally not advisable to label these activities study skill instruction, but rather to weave skills into the context of the course material. SI leaders need to recognize the "teachable moment" and introduce or model the appropriate skills, tying them 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.

After each exam, the SI leader guides the group in going over the questions that were particularly troublesome. This process reinforces the correct answers on the exam and gives 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 leader also talks 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 understand more thoroughly the kinds of questions the professor asks and to predict future test question more accurately.

During the first part of the semester, the SI leader checks to see how well students are understanding the text materials. The SI leader identifies some students who have serious reading skill 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.

The SI leader needs to be trained to make referrals to other campus resources. This referral role is especially important for the first year students since they may not yet have developed close relationships with an academic advisor or other campus personnel who also might make referrals. During pre-term SI leader training workshops, time needs to be allocated concerning a systematic review of available campus resources and an appropriate way to make referrals.

If the textbook includes graphs, charts or diagrams, it is important that the students are not omitting these aids from their study of the materials. Students tend to think that graphs, etc are extraneous information, when, in fact, they are usually essential to establishing an understanding of the idea. Occasionally, 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" (Martin & Blanc, 1984). 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 will also help students to discover cues that they can use in deciding what reading rate is correct for specific parts of the text. Sometimes, it is acceptable to skim quickly. Other parts of the text will require thorough reading, or re-reading.

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, SI leaders should help 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. This task is much easier when the SI leader has previously taken this course from the same professor.

The SI leader can mentor the students in using strategies that the leader previously found helpful with the course material. This is why it is so critical that the SI leader attends class with the students. The students need specific assistance with the day's reading material and lecture notes in addition to appropriate use of study skill strategies.

Focus on High Risk First Year Classes

Retention programs that focus on first year students face a unique feature that make success more difficult. Since these programs target first year students, there is little or no previous college level course work to evaluate when attempting to estimate which students are high risk. Analysis of high school grades and standardized college entrance examinations do not identify all students who will drop out or withdraw from college (Christie & Dinham, 1991; Martin, et. al., 1983; Tinto, 1987).

Attrition cannot be addressed effectively by treating only those who show either symptoms or predisposing weaknesses. The treatment must be more generalized; the problem must be addressed at or near its source: the mismatch between the level of instruction and the level of student preparation.

While it may be difficult to correctly guess which students may withdraw from college, it is relatively easy to learn which classes first year students will find difficult. Common experiences in first year college classes include the following: large amounts of weekly readings from both difficult to read textbooks and secondary library reference works;

infrequent examinations that focus on higher cognitive levels of Bloom's taxonomy; voluntary and unrecorded class attendance; and large class sessions with little interaction with the course professor or the other students.

All these features in first year classes contribute to raising the difficulty level for many students, even those that were successful at the high school level. At the University of Missouri-Kansas City these historically difficult first year classes include: Introduction to Biology; Foundations to Philosophy; Introduction to Chemistry; American History I; Spanish I; Introduction to Philosophy; Sociology I; and College Algebra. The academic difficulty of courses can be objectively verified through analysis of final course grades. These course grade records are generally available through the institution's records office.

For our purposes at UMKC, students who receive final course grades of D or F or withdraw from the course after the initial drop/add period are viewed as being an "unsuccessful" enrollment. Our experience at UMKC is that we focus on classes where the unsuccessful rate exceeds 30 percent. Because of its voluntary nature, students will not generally attend SI sessions in large numbers unless a sizeable proportion of students are receiving low grades or are dropping out of the class. Other institutions report similar findings. However, institutions may implement SI in classes where the overall unsuccessful rate is relatively low but is quite high for some student subpopulations that the institution has targeted for special retention activities.

These "high risk" courses have fine professors teaching them. However, the academic preparation level for many students does not prepare them for success in these academically rigorous courses. Largely, the UMKC professors will do almost anything to help their students succeed except drop their academic standards. SI provides a complimentary service for these historically difficult courses by helping students raise their academic performance to meet the professor's level of expectation.

SI is Helpful for a Variety of Student Subpopulations

Based on data collected by UMKC concerning the campus SI program and SI programs from adopting institutions from across the U.S. and several foreign countries, SI appears to be effective with all subpopulations of students. Prior levels of academic preparation, motivation level, gender, ethnicity, age, academic discipline, and whether or not the student works have not been found to significantly impact the effectiveness of SI.

Among these student subpopulations, three groups are of interest to first year experience programs: academically talented students, remedial/developmental students and students from both groups who can be characterized as field-dependent learners. These groups help illustrate how SI is helpful for a variety of groups with different needs.

Academically Talented Students

When many educators think of a profile of dropouts, most would not assume that the academically talented student would be a candidate for concern. However, sizeable portions of these students drop out and should not be overlooked as they are among the easiest to retain.

Recent research has also focused on the academic needs of talented students attending selective institutions (Wratcher, 1991). Wratcher's study focused on first year students attending Carnegie Mellon University who had not experienced difficulty in high school but who, in this new academic environment, experienced academic failure. When faced with academic difficulty, the study found that this subset of students from the entire group of

academically talented students would often go into periods of denial that might last throughout the first year.

According to the Wratcher's study, these students compounded their problems by failing to seek academic assistance even though they were encountering academic difficulty and earning poor grades. These students reported that they feared the stigma of self-identifying their academic failure. Because of academic failure in one or more classes, these formerly academically successful students had a high probability of being placed on academic probation following their first or second semester at college. Other behavior themes associated with this student subpopulation reported by Wratcher included perfectionist tendencies and stress resultant from parental and self expectations. These behaviors compounded the academic difficulty that they were already experiencing.

Supplemental Instruction is used at several selective institutions since it meets the needs of these talented first year students as well. Academic assistance begins the first week of class and all students are encouraged to attend the sessions at least once each week, irrespective of their current or predicted academic performance. Since SI is open to all students, it avoids the stigma of being remedial or developmental. In fact, SI has in some courses been presented within honors programs for students who wished to maximize their content mastery. In SI students have an opportunity to engage in intense discussions that are usually unavailable during regular class time. Such discussions allow students to deepen and expand the information gathered during lectures or readings. The SI leader models effective student behaviors specific to the course that the students can respect and adopt for their own use.

SI was developed at the University of Missouri-Kansas City to help talented medical, pharmacy and dentistry students. An unacceptably high number of these students were dropping out or being academically dismissed from these professional school programs. Research suggests that all students, including the talented upper quartile students, earn higher grades if they are SI participants.

Remedial/Developmental Level Students

Another student population who need academic assistance resides at the opposite end of the continuum. These dependent learners are in need of remedial or developmental education and who require extensive assistance during the first year (Levitz & Noel, 1989). "The underprepared student is often one who may have the basic intellectual capacity but who has reached a point of impasse temporarily created by a mismatch between his or her knowledge base and the new information that he or she is expected to absorb on an independent basis" (Tomlinson, 1989, p. 20).

One of the characteristics of dependent learners is that they have yet to make the transition from what teachers in high school expect to what professors expect in college. The nature of the high school environment often helped these students to meet the minimum academic requirements at this level: daily homework; weekly examinations; daily class attendance; and social support from their family, friends or other social groups. Most of these characteristics are missing at the college level.

It is for this reason that it is recommended to "front load," that is, put the strongest programs and services in the first year (Levitz & Noel, 1989). It is less effective to have sophisticated student retention programs in upper division, graduate and professional school programs if some of the students you want most to retain withdraw or are dismissed during their first year in college.

When first year students make progress in fulfilling their educational and personal goals, they tend to be retained longer (Noel, et. al., 1985). Two of the five factors cited by Upcraft and Gardner (1989) are addressed by the SI retention model: developing academic and intellectual competence; and establishing and maintaining interpersonal relationships.

Developmental students especially are in need of academic assistant that helps them develop independent learning skills. In SI, students have the opportunity to learn and use strategies until they master them. They need the structure of the SI sessions to observe and practice these skills. Once these students internalize and begin to use more efficient skills on their own, they are much less likely to drop out in succeeding semesters.

Field-Dependent Learners

There has been considerable research concerning the learning needs of students. These researchers suggest that different student subpopulations learn material in different ways. One model for understanding the differences is to place students on a continuum between "field-dependent/relational/ affective" and "field-independent/analytic/nonaffective" (Anderson, 1988). The field-dependent learners appear to prefer learning material that has a human social content. The material is seen as part of a total picture. On the other hand, the field-independent learners appear to have a higher tolerance for material that is inanimate and impersonal. They see and understand information that does not have a clear context. Researchers suggest that these are not polar positions, but rather opposite ends of a continuum of preferred learning styles. Most students are located somewhere along the continuum and such positions are subject to change throughout life.

The data suggests that the field-independent learners are more typically Caucasian males. Field-dependent learners are often female and African-American, Native-American, Hispanic, and from countries from outside the United States (Anderson, 1988). Researchers cite the need for field-dependent learners to connect what they already understand with new material (Claxton, 1990). Peer study groups are often cited as important strategies for improving non-Caucasian student retention (Conciatore, 1991; Fadale, 1990; Chickering in Newman, 1985).

Supplemental Instruction provides an environment that is helpful for both types of learners. Field-dependent learners have an opportunity through discussion and review of previous lecture material to see connections between old and new academic material. Outside reading materials and class lecture notes can be synthesized together. Additionally, through skillful facilitation by the SI Leader, familiar, contemporary events can be connected to the course material. Students are more engaged since each SI participant has the opportunity to be actively involved in the discussion.

SI sessions are helpful for field-independent learners since they have another opportunity to gather information from class lectures or outside readings that they might have missed. These students also benefit from the study strategies as these provide additional ways to organize and more effectively understand the course material.

Theoretical Framework for First Year Student Programming

Most institutions are faced with severe budget constraints and limited flexibility in assigning personnel to new projects. For these reasons, institutions have to be very careful in assigning limited resources to meet institutional needs. Research suggests that it is best to concentrate academic support activities during the first year for college students (Upcraft, et. al., 1989).

Research and scholarship on college students have provided a comprehensive theoretical framework for first year student programming. In retention and student development research, three interrelated factors have emerged repeatedly as predictors of student success and retention in the first college year. These factors, which have become central objectives of many first year student programs, are (a) a felt sense of community, (b) involvement of students in the life of the institution, and (c) academic/social integration. Supplemental Instruction provides a framework within which to accomplish each of these objectives.

SI Facilitates Development of Community

Many education leaders decry the lack of significant interpersonal relationships among students who attend college. As more returning adult students attend college, the institution continues to become more heterogeneous in nature. The professional literature suggests that there is a trend in closing residence hall buildings as fewer single full-time, first-time traditionally-aged students enroll in college. For many institutions, the residence hall experience can no longer be relied upon to provide the "community experience" for students.

The institution must take proactive steps to provide an environment for development of community with today's students. Active learning, smaller classes, more interactions between the professor and students are suggested as strategies to develop community (Tobias, 1992).

SI brings students together in small groups for class study sessions. For some of these students, this is their only time to interact with other classmates. With competing time commitments of work, family and commuting, many students no longer have the luxury of remaining on campus without a specific meeting or purpose. Students develop a sense of community with each other during SI sessions. An indirect result is that students sense that the institution is a caring community that supports their academic success. As the institution's student body becomes more heterogeneous, the need for developing a common community increases in importance.

In a small, but important way, SI makes a contribution to enhancing multicultural education on the campus. A review of the literature suggests that there are three major ways to enhance the multicultural education of college students. One suggestion is that all students should be required to enroll in courses that trace the history of particular ethnic and cultural groups. Another suggestion is that the curriculum should become more infused with contributions with people from a variety of ethnic groups (Brown, 1991, p. 226). The goal is to present material to a student that is accurate and truthful. Culture is the product of all of humanity, not one group (Hilliard, 1991).

A third suggestion is that multicultural education and understanding can occur as students work together on academic tasks. In these settings, students feel more comfortable to express themselves and to share more naturally their perspectives on issues as interpreted from their own unique cultural traditions (Dash, p. 19). "It is not enough to welcome minority individuals. We need to change the culture of our majority institutions so that all members of the community contribute and honor each other's differences. As it now stands, Blacks, Hispanics, Asian-Americans and American Indians bear the entire burden of adaptation to the majority culture on campus." (Eaton in Green, 1989, p. viii). Academic integration of students into the campus community does not mean immersion into the dominant culture only (Miller, 1990).

When considering these three suggestions, SI is most similar to the third approach. SI sessions provide an informal environment for students from a variety of backgrounds to come together and focus on a single task - reviewing the course material for the class that they are taking together. This does two things. First, it gets students from different background to work together. For some, this will be the first time they have worked with others outside of their cultural groups and the experience can help break down some stereotypes. Secondly, SI sessions provide an opportunity for discussion where SI participants can share their viewpoint with others.

SI Facilitates Student Involvement with the Institution

Astin (1985) advocates that increased involvement with the institution leads to higher student talent development. Increased time-on-task is needed for improved student outcomes. "Quite simply, **student involvement** refers to the amount of physical and psychological energy that the student devotes to the academic experience. Thus, a highly involved student is one who, for example, devotes considerable energy to studying, spends a lot of time of campus, participates actively in student organizations, and interacts frequently with faculty members and other students" (Astin, 1985, p. 36). Many of Astin's findings were reported earlier in 1984 by the NIE Study Group on the Conditions of Excellence in American Higher Education.

A key ingredient to increased student involvement is a focus on academic work. Light (1992) reports in The Harvard Assessment Seminars: Second Report, "...[S]tudents who get the most out of college, who grow the most academically, and who are happiest, organize their time to include interpersonal activities with faculty members, or with fellow students, built around substantive, academic work" (p. 6).

Students drop out of college for a variety of reasons from both the affective and cognitive domain. Psychological dropouts are most likely to drop out during the first year if they fail to become involved with the institution. Student retention can be increased through increased student involvement, particularly with increased involvement of the student with the academic dimension of college life (Turnbull, 1986).

Astin (1985) suggests that the student's time could be viewed as the most valuable institutional resource. The involvement of the student with the institution may be more correlated with change than either the institution or the student's entering characteristics. Strategies suggested for enhancing the involvement of first year students include providing resources during the first two years of college when student involvement is lowest and a more frequent use of active modes of instruction.

There has been particular concern with student persistence in mathematics, science and engineering for all student subpopulations, particularly females and non-Caucasians. Some researchers have found a positive correlation between persistence in science major coursework and involvement in study groups outside of class for female students (Shlipak, 1988). In general, researchers suggest that increased student involvement is an important strategy to help stem the drop out rate for all science and math students (Hilton & Lee, 1988). Light (1992) also cited the importance of small, student-organized study groups as a key for explaining why students enrolling in additional science courses. A traditional strategy is to involve students with faculty members in research projects (McCormick & McCormick, 1991; Tobias, 1992). The difficulty with the latter strategy is that only larger research institutions have the funds, laboratories and professors available for such valuable experiences.

SI provides a natural settings for additional involvement of first-year students with their peers and with an upperclass student who serves as the SI Leader. This increased involvement is focused on academic work. SI participating students spend more time on campus reviewing class content in a structured, effective session that involves others.

SI Facilitates Academic and Social Integration

Tinto (1987) found that four clusters of events tend to be experienced by college students before they drop out: difficulty in adjusting to the college environment; experiencing academic and social difficulty; suffering from incongruence between the

student's expectations and the college's demands; and a feeling of social isolation. These clusters of events are acutely felt during the first year. Other researchers have found similar events have been linked to academic probationary students (Behrens, H.D., 1935). Tinto's model continues to be studied and validated by other researchers (Christie & Dinham, 1991).

Effective models of retention stress the need for students to be integrated into the academic and social dimensions of the college community (Tinto in Spann, 1990; Tinto, 1987). These connections need to be established during the first weeks of their first year of college. This interpersonal support system is important for all first year students, despite their background and experience (Upcraft & Gardner, 1989).

Social integration and support is especially important for non-Caucasian students. "[E]ducational process moves forward on four legs (the home, the community, the school, and the receptive mind of the student) and that the crippling of any of these legs cripples the educational process. Therefore, in the normal course of events, educational outcomes are never the product of any single component of education -- not even the school classroom" (Edwards, 1991, p. 49).

Researchers suggest that Tinto's model applies to all students, despite ethnicity. "The major constructs of Tinto's model have largely withstood the test of time. Within this theoretical framework, minority students are at especially high risk of 'malintegration' to academic and social systems. For students in general, separation from past communities and memberships, and an often bewildering transition to college life, can set the stage for departure during the first year. For many minority students at predominantly white institutions, the necessary social, cultural, and mental adjustments are simply insurmountable" (Cibik & Chambers, 1991, p. 130). A variety of researchers suggest that peer groups are an important way to retain minority students (Conciatore, 1991; Dash, 1991; Fadale, 1990; Knott, 1991).

SI provides students an opportunity to practice and master essential academic skills without the stigma of remediation. Through SI, students become more proficient at note taking, time management, test tasking, integrating lecture notes and textbook readings, and other learning strategies. These skills are specific to each discipline and are integrated with the content students must learn. SI also gives students the opportunity to feel part of a group that is bonded by a common purpose and concern. The critical element of SI in this integration process is the SI leader. The SI sessions are structured and paced through the facilitation of the SI leader.

Research on Affective and Cognitive Development Supports Collaborative Learning

Collaborative learning activities do more than just raise final course grades for students. Considerable research has been conducted on changes with students who participate in such activities.

Critical Thinking Skills

Research suggests that students who work in collaborative learning groups develop their critical thinking skills since they have an opportunity to be actively engaged through peer-group discussions and development of responsibility for their own learning (Johnson & Johnson, 1986; Smith, 1989). Thinking abilities and language abilities are closely linked. Collaborative group work is cited as a helpful strategy since it encourages students to help construct their own understanding (Chaffee, 1992). Too often students sit silently in

traditional classrooms. They do not have the opportunity to vocalize and actively interact with others.

Some researchers suggest that critical thinking is content specific (Brookfield, 1989; Kender & Kender, 1991; McPeck, 1981; Meyers, 1986). This has particular importance for SI since a major distinction of the program is that SI is attached to specific courses. SI postulates that this helps to explain why some students who demonstrate course competency and receive high grades may have academic problems in courses from other disciplines. It is by design that SI sessions focus on the success strategies that are specific to the course and its discipline. These SI sessions provide an opportunity for students to vocalize their thought process and to observe how others students approach the subject matter. This active involvement of each SI participant is important for them to develop their critical thinking abilities.

Social Skill Development

It is remarkable that most students spend much of their academic lives studying and working by themselves. However once they enter the work force after college graduation, they will probably spend the next forty years working within teams. While colleges and universities may be quite efficient at imparting content material, they are often woeful in producing effective employees who can successfully interact and work with their new colleagues at their job site. Collaborative learning encourages students to "...view each classmate as a potential helper rather than as a competitor" (Astin, 1987, p. 17).

It has been reported that even new students at some of the finest Ivy League institutions lack essential social skills needed for success both during college and after they enter the work place. "[Students] point out that the process of working in a group, in a supervised setting, teaches them crucial skills. The skills...include how to move a group forward, how to disagree without being destructive or stifling new ideas, and how to include all members in a discussion. Few students, if any, have these skills when they arrive at college" (Light, 1990, pp. 70-71).

It is reasonable to estimate that many students entering other colleges in the U.S. also have a similar deficit in their social skills. Through small group problem-solving activities, group lecture note construction, and other activities, SI participants see other students in class as valuable sources of information. They no longer feel limited to the professor and the textbook as resources. Additionally, discussions with students from diverse backgrounds expose the student to a variety of points of view. Hopefully they develop a respect for individual from different backgrounds as well. Development of these broader viewpoints and more effective social skills will be important when the student joins the increasingly heterogenous work force.

Affective Growth

Collaborative learning groups provide a different environment from the traditional classroom because of their social context, the group goal, and the semi-independence of each group. Rather than a silent classroom, the collaborative learning groups are active and participatory (Sandberg, 1990). These characteristics of collaborative learning groups help to explain why affective growth is more likely to occur in such groups.

The students who are predicted to be high-risk for withdrawing from college develop skills in both affective and cognitive domains when they have the support of peers (Brookfield, 1987; Johnson, et. al., 1984; Resnick, 1987; Slavin, 1983, 1988; Sandberg,

1990). Some researchers say that peer groups are especially important for women who are returning to college at an older age. (Belenky, et. al., 1986).

Most students do not want to take risks when their financial aid and academic eligibility is at stake. SI provides a non-threatening environment in which to try out new learning strategies without penalty of an examination grade. Students receive individual supportive feedback from the SI Leader and other students in the SI session. Students gain confidence through SI session activities. As students begin to receive higher grades, students increase their self esteem. This process spirals the self-esteem upward as the student increases their self-confidence and receives higher grades not only in the class that SI is provided, but in other classes as well. This occurs since the student is using the new learning strategies learned and practiced during SI sessions for other classes as well.

Conclusion

In collaboration with a variety of other first year experience programs, SI can provide an important asset for increasing student effectiveness, retention and satisfaction. It provides an environment to review, practice and make application of study strategies presented during orientation programs. SI leaders can make referrals to other campus resources when needed. Finally, SI sessions can contribute to development of the student in terms of interpersonal skills, multi-cultural education, and self-esteem. SI provides another way to "front-load" the first year experience of students.

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