

Academic-Support Strategies for Promoting Student Retention & Achievement During The First-Year of College

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**THE IMPORTANCE OF THE FIRST YEAR OF COLLEGE FOR
STUDENT RETENTION AND ACADEMIC ACHIEVEMENT**

The majority of new students entering higher education leave their initial college or university without completing a degree (Tinto, 1993), and retention rates have been declining since the early 1980s at two-year and four-year institutions, both public and private (Postsecondary Education Opportunity, 2002). The first year of college continues to be the most critical or vulnerable period for student attrition at all types of higher education institutions, including highly selective colleges and universities ("Learning Slope," 1991). More than half of all students who withdraw from college do so during their first year (Consortium for Student Retention Data Exchange, 1999), resulting in a national attrition rate for first-years students of more than 25% at four-year institutions, and almost 50% at two-year institutions (ACT, 2001). Summarizing three years of campus-visitation findings and extensive survey data gathered under the auspices of the Carnegie Foundation, Boyer (1987) categorically concludes that, "Students find the transition from (high) school to college haphazard and confusing" (p. 21).

To address the problem of early attrition, the National Institute of Education's (1984) panel of scholars offers as their first recommendation for improving the quality of undergraduate education, the principle of "front loading"—reallocation and redistribution of the institution's best educational resources to serve the critical needs of first-year students. Lee Noel, nationally recognized researcher and consultant on student retention also contends that, "In retention, a minimal investment can put into place some practical approaches and interventions, frequently labeled 'front loading.' Our experience shows that even a modest investment in these critical entry-level services and programs can have a high payoff in terms of student retention" (1994, p. 6).

In addition to being a critical year for student retention, there is accumulating evidence that the first year of college may also be a critical period for student learning and cognitive development. Two independent studies conducted by the Washington Center for Improving the Quality of Undergraduate Education have revealed that more cognitive growth occurs during the first year than during any other year in the college experience (MacGregor, 1991). More recently, Light (2001) reported the results of extensive research conducted by two Harvard researchers on how undergraduates and alumni recall and describe "critical incidents" in their college experience. Working independently, these two researchers

discovered the same pattern of results: "Memories of critical moments and events cluster heavily in the first few weeks of college" (p. 204). Such findings suggest that the first-year experience may represent a "window of opportunity" for promoting student learning that would be missed if colleges and universities do not front-load their best learning resources and educational interventions during this pivotal period of college development.

Other research suggests that the cognitive and behavioral habits students develop during their first-year of college may become their *modus operandi* for the entire college experience. For example, Karl Schilling (2001) reported a time-use study in which first-year students were equipped with beepers that were activated periodically by the investigators. When their students' beepers were activated, students were to write down what they were doing at the time. This study revealed that the amount of time which first-year students spent on academics predicted the amount of time they spent on academics during their senior year. One possible interpretation of this finding is that academic habits established during the first year may have long-term impact on students' level of academic involvement throughout their remaining years in college. Thus, it may be reasonable to expect that proactively delivered interventions, such as first-year academic support programs that increase students' academic involvement during their initial year of college, may continue to exert the same salutary effect beyond the first year.

THE CASE FOR PROVIDING COMPREHENSIVE ACADEMIC SUPPORT DURING THE FIRST YEAR OF COLLEGE

National surveys conducted during the 1990s reveal that 73% of student support professionals claim the proportion of entering students requiring remedial or developmental education on their campus is increasing. These findings are consistent with surveys of students which reveal a 30% increase between 1976 and 1996 in the number of students reporting that they took at least one basic skills or remedial courses in reading, writing, or math (Levine, 1998). National surveys of students also reveal that "fear of academic failure" and obtaining "help with academic skills" are among the most frequently cited concerns of beginning college students (Astin, Parrott, Korn, & Sax, 1997).

These quantitative findings are reinforced by qualitative research on the retrospections of college seniors, which also reveal that students must make significant academic adjustments during their first year of college. This is well illustrated by the following comments made by one senior during a personal interview.

Interviewer: What have you learned about your approach to learning [in college]?

Student: I had to learn how to study. I went through high school with a 4.0 average. I didn't have to study. It was a breeze. I got to the university and there was no structure. No one checked my homework. No one took attendance to make sure I was in class. No one told me I had to do something. There were no quizzes on the readings. I did not work well with this lack of structure. It took my first year and a half to learn to deal with it. But I but had to teach myself to manage my time. I had to teach myself how to study. I had to teach myself how to learn in a different environment (Chickering & Schlossberg, 1998).

The importance of addressing the academic adjustment difficulties of new students proactively during the first term of college, rather than waiting for students to make these adjustments on their own—via random trial-and-error, is underscored by research indicating that students who earn good grades during their first term are far more likely to persist to graduation than are first-term students who do not experience initial academic success (Pantages & Creedan, 1978; Seymour, 1993). It has also been found that decisions to stay or leave college correlate more strongly with first-year students' academic performance than with their pre-enrollment characteristics (Pascarella & Chapman, 1983). Furthermore, research findings suggest that there is an association between higher first-term GPA and shorter time to graduation (Goldman & Gillis, 1989; Young, 1982).

Students are more likely to withdraw from college not only when they receive poor or failing grades, but also when they perceive a sharp decline in their academic performance relative to grades previously attained (Getzlaf, Sedlacek, Kearney, & Blackwell, 1984). Thus, academically high-achieving students who perceive a significant drop in college grades relative to their high school performance may also at-risk for withdrawal. For instance, it has

been found that academically well-prepared students who expect A's, but receive C's, are at risk for attrition (Widmar, 1994).

When first-year students improve their academic performance, their retention rate tends to improve as well (Roueche, Baker, & Roueche, 1984). One way in which colleges can improve both the academic performance and retention of first-year students is by increasing their utilization of campus support services, because research clearly suggests that there is a strong relationship between utilization of campus-support services and persistence to program or degree completion (Chruchill & Iwai, 1981). In particular, students who seek and receive academic support have been found to improve both their academic performance and their academic self-efficacy—that is, they develop a greater sense of self-perceived control of academic outcomes, and develop higher self-expectations for future academic success (Smith, Walter, & Hoey, 1992). Higher levels of self-efficacy, in turn, have been found to correlate positively with college students' academic performance and persistence; this is particularly true for Hispanic students (Solberg, O'Brien, Villareal, & Davis, 1993) and underprepared students (Lent, Brown, & Larkin, 1987). Such findings dovetail with research on returning adult students which suggests that re-entry students who experience early success in college are more likely to overcome personal attributions of low ability (Cross, 1981).

Unfortunately, however, it has been found that college students under-utilize academic support services (Friedlander, 1980; Walter & Smith, 1990), particularly those students who are in most need of support (Knapp & Karabenick, 1988; Abrams & Jernigan, 1984). At-risk students, in particular, have trouble recognizing that they are experiencing academic difficulty and are often reluctant to seek help even if they do recognize their difficulty (Levin & Levin, 1991). These findings are also particularly disturbing when viewed in light of meta-analysis research, which reveals that academic-support programs designed for underprepared students exert a statistically significant effect on their retention and grades when they are utilized, particularly if these programs are experienced by students during their freshman year (Kulik, Kulik, & Shwalb, 1983).

Taken together, this collection of findings strongly suggests that (a) institutions should deliver academic support intrusively—by initiating contact with students and aggressively bringing support

services to them, rather than offering services passively and hoping that students will come and take advantage of them on their own accord; and (b) institutional support should be delivered proactively—early in the first year of college in order to intercept potential first-year attrition, rather than responding reactively to student difficulties after they occur. As Levitz and Noel (1989) report, "It has been our experience that fostering student success in the freshman year is the most significant intervention an institution can make in the name of student persistence" (p. 65).

It may also be reasonable to argue that provision of early academic support during the first year of college will result in cumulative gains in learning and development during subsequent years of the college experience, culminating in higher levels of academic achievement at college completion. Student development in college is likely to follow a cumulative or hierarchical path that involves immediate, intermediate, and ultimate outcomes (Patton, 1978). Any educational intervention that serves to increase the achievement of immediate outcome goals, such as first-year academic performance and retention, also has the potential for promoting the realization of intermediate and ultimate outcomes because learning is an "iterative process with current outcomes influencing future achievement" (Alexander & Stark, 1986, p. 24). Thus, provision of timely academic support for first-year students may not only serve to increase student success during the first year of college, it may also increase the likelihood that new students will persist to degree completion and elevate the ultimate level of academic achievement they display at college graduation.

COLLABORATION: THE KEY TO COMPREHENSIVE AND EFFECTIVE ACADEMIC SUPPORT FOR FIRST-YEAR STUDENTS

To effectively address the full range of issues that affect students' academic success during the first year of college, collaboration among different organizational units and members of the college community is critical. In particular, the following four forms of collaboration appear to be indispensable elements of a comprehensive academic-support program for first-year students, and they will serve as the nexus for the remainder of this manuscript.

Collaboration between Students (Peer Collaboration)

Effective academic support programs for first-year students capitalize on the power of peers. Interaction between students has long been known to have a positive impact on student retention (Feldman & Newcomb, 1969), and intentionally fostering collaboration among students represents an effective strategy for promoting retention attrition because it fosters students' social integration into the college community (Tinto, 1993; Braxton, Sullivan, & Johnson, 1997). Peer collaboration has also been found to advance students' cognitive development, as evidenced by an extensive review of research on critical thinking conducted by Kurfiss (1988), who concluded that use of peers as resources is a powerful strategy for promoting the development of students' higher-level thinking skills. More recently, Astin (1993) conducted a longitudinal study of over 24,000 students, spanning a nine-year period, and discovered "a pervasive pattern of positive benefits associated with frequent student-student interaction" (p. 385).

In this manuscript, the following forms of peer collaboration will be showcased because they are supported by a substantial body of empirical evidence: (a) peer tutoring, (b) peer mentoring, (c) cooperative learning groups, (d) supplemental instruction, and (e) learning communities.

Collaboration between Classroom Instructors and Academic-Support Services

Students' academic success depends not only on the quality of the curriculum and classroom instruction, but also on the effectiveness of two key out-of-class services that colleges have created to support students' academic success: learning assistance and academic advisement. Support programs that connect students with learning specialists and academic advisors can provide timely and seamless support for first-year students whose academic achievement may not be hampered by ineffective learning strategies or a lack of educational goals and sense of direction. Furthermore, when instructional faculty interact and collaborate with academic support-service professionals, combinatorial or synergistic effects are likely to be exerted on student learning and development, thereby magnifying the educational impact of the college experience.

Perhaps most importantly, through collaboration with faculty and connection to the curriculum, academic-support professionals and their programs assume a more central (rather than a peripheral or marginal) place in the college's organizational and functional structure. National evaluations of special service programs indicate that their success hinges upon the degree to which those involved in the program perceive themselves as central to institutional life (Tinto, 1993). Unfortunately, this sense of centrality has been missing from first-year student support programs, as noted in a national report issued by the Education Commission of the States (1995): "A consensus is emerging that the first years of undergraduate study—particularly the freshman year are critical for student success. Yet, comprehensive efforts to integrate first-year students into the mainstream of collegiate experience are treated as auxiliary experiences, just the reverse of what a growing body of research indicates as 'best practice'" (p. 6). Similarly, research indicates that the effectiveness of academic support programs designed for disadvantaged minority students are compromised by the fact that they are not well integrated with mainstream institutional activities (Richardson & Bender, 1987). Collaboration between faculty and academic-support specialists can enable support programs to become more "mainstreamed," thus increasing the likelihood that they are not viewed as "supplemental" but as integral to the college's day-to-day operations and essential to the college mission.

Two specific forms of collaboration between instructional faculty and academic-support services will be showcased in this manuscript because of their promising potential for integrating in-class learning with out-of-class academic support: (a) early-warning (early-alert) systems, and (b) course-integrated support programs.

Collaboration between the Divisions of Academic and Student Affairs

Academic success depends not only on cognitive factors, but also on students' social adjustment, emotional stability, and personal wellness. Comprehensive academic support for first-year students needs to focus on the student as a "whole person," and address the full range of academic and non-academic factors that affect student success. Research repeatedly demonstrates that

academic support programs which include different program features, targeting different student needs, are more effective than single-focus programs that are restricted solely to the academic or cognitive domain (Boylan, Bliss, & Bonham, 1992; Roueche & Roueche, 1993). Research has also shown that student retention is more effectively promoted at institutions whose campus culture is characterized by collaboration between academic and student affairs (Kuh, Schuh, Whitt, & Associates, 1991; Stodt, & Klepper, 1987).

Student Affairs professionals have long argued that the success of a college's student development program is contingent upon collaborative relations between Student Life staff and faculty (American College Personnel Association, 1975). More recently, the Joint Task Force on Student Learning—a collaborative initiative created by the American Association for Higher Education (AAHE), the American College Personnel Association (ACPA), and the National Association of Student Personnel Administrators (NASPA)—has been created to promote approaches to student learning that forge connection or integration between educational experiences occurring inside and outside the classroom. As two members of the joint task force argue, "It takes a whole college to educate a whole student. Administrative leaders can rethink the conventional organization of colleges and universities to create more inventive structures and processes that integrate academic and student affairs; [and] offer professional-development opportunities for people to cooperate across institutional boundaries" (Engelkemeyer & Brown, 1998, p.12).

In this manuscript, the following forms of collaboration between academic and student affairs are showcased because of their strong base of empirical support or their capacity for implementing powerful student learning and retention principles: (a) integration of academic convocation with new-student orientation, (b) living-learning centers, (c) residential learning communities, and (d) extended-orientation courses (also known as, first-year experience seminars).

Collaboration between Colleges and Schools (Secondary and Elementary)

Academic success during the first-year of colleges hinges critically on students' academic preparedness at college entry. Collaboration between higher education and the school systems that prepare future college students represents a potentially fruitful partnership because it can serve to clarify, in advance, what colleges expect of their first-year students, and to better equip these students with the preparatory knowledge, basic skills, and academic competencies needed to successfully navigate the first-year experience.

Three specific forms of school-college collaboration will be highlighted in this manuscript that have received the most empirical support and scholarly attention in the higher education literature: (a) summer bridge programs, (b) high school outreach programs, and (c) academic alliances.

PEER SUPPORT PROGRAMS THAT PROMOTE ACADEMIC COLLABORATION AMONG STUDENTS

The power of peers for promoting student learning is highlighted by the work of McKeachie, Pintrich, Lin, & Smith (1986), who reached the following conclusion after completing an extensive review of higher education research on teaching and learning: "The best answer to the question of what is the most effective method of teaching is that it depends on the goal, the student, the content and the teachers. But the next best answer is students teaching other students" (p. 63).

In addition to its strictly cognitive benefits, peer collaboration also serves to develop the key social skills that are essential for success in life after college (Cross, 1985). Arthur Chickering eloquently expresses the need for higher education to more consciously develop students' ability to collaborate and their capacity for interdependence: "To the extent that we emphasize isolated, individual, competitive work and products, we both mislead students about the nature of work and construct obstacles to their interpersonal development. It is in the area of interdependence of all work that higher education has a largely uncharted world to explore. And in such exploration we will also find ways to help our students move toward increased capacity for intimacy" (1969, p. 210).

The following practices illustrate how peer collaboration can be intentionally fostered among first-year students—inside the classroom, outside the classroom, and across the curriculum.

Peer Tutoring

This academic-support program involves utilization of academically successful students, advanced in their understanding of subject matter or in their development of academic skills, who provide learning assistance to less advanced students. Peer tutors typically receive special training for their teaching role that is usually conducted under the aegis of the college's Center for Learning Assistance or Academic Enrichment.

Higher education research on peer teaching/learning consistently indicates that both the peer learner and the peer teacher (tutor) experience significant gains in learning as a result of their collaborative interaction (Whitman, 1988). For example, college students display deeper levels of understanding for concepts they teach to other students (Bargh & Schul, 1980; Benware & Deci, 1984) and achieve greater mastery of course content (Johnson, Sulzer-Azaroff, & Mass, 1977). Also, research reported by a variety of institutions points to the positive impact of peer tutoring on student retention, especially the retention of underrepresented and disadvantaged students with underdeveloped basic-academic skills (National Academy of Sciences-National Research Council, 1977).

Peer tutoring is more cost effective than tutoring provided by faculty or staff, and may also be more educationally effective because (a) it allows the learner to seek academic assistance from a similar-age peer, which is often less threatening to the learner's self-esteem than seeking help from an authority figure (Gross & McMullen, 1983), and (b) the peer teacher and learner have more similar amounts of prior experience with the concept being learned and are at a more proximal stage of cognitive development, both of which serve to facilitate learning (Vygotsky, 1978).

Peer Mentoring

This peer-support strategy has a more holistic focus than peer tutoring, whereby the peer mentor provides social and emotional support to the protégé in addition to academic assistance. Also, mentor-protégé contacts tend to occur in a wider range of contexts than tutor-tutee contacts— which are commonly confined to the classroom or Learning Center. Typically, peer-mentoring programs involve more experienced students (juniors or seniors) serving as mentors for less-experienced students (freshmen or sophomores), for the dual purpose of promoting the educational success of the protégé and fostering the leadership development or counseling skills of the peer mentor.

The effectiveness of peer mentoring is supported by cross-institutional research which indicates that students who participate in such programs display higher rates of retention and academic achievement (grade-point average) than non-participating students with comparable college-entry characteristics (Guon, 1988).

Peer Study Groups

This academic-support strategy may be succinctly defined as students meeting in small groups outside of class to help each other study and master course material. These collaborative groups can develop spontaneously among students, or they may be intentionally promoted by instructors and academic-support professionals. Traditionally, the term "study group" has been used to refer to a group of students who come together for review sessions in preparation for exams. However, student groups may also be formed to accomplish additional learning tasks that include the following: (a) note-taking groups—students convene immediately after class to compare and share notes; (b) reading groups—students collaborate after completing reading assignments to compare their highlighting and margin notes; (c) library research groups—students join together to conduct library research and combat "library anxiety"; and (d) test-results review groups—after receiving test results, students review their individual tests together to help members identify the source of their errors and to observe "model" answers that received maximum credit.

The positive impact of collaborative study groups on the retention and achievement of underrepresented students, in particular, is supported by research on African-American students majoring in math and science at the University of California-Berkeley. Five-

year retention rates for African-American students who participated in collaborative learning workshops was 65%, while the retention rate for black non-participants was 41% (Treisman, 1986 1992).

These findings were replicated in a 5-year longitudinal study of underrepresented Latino students enrolled in mathematics, science or engineering programs at California Polytechnic State University, Pomona. This study revealed that fewer than 4% of Latino students who participated in out-of-class collaborative learning sessions withdrew or were academically dismissed, compared to 40% of Latino students who did not participate in the program (Bonsangue, 1993).

Cooperative Learning Groups

Cooperative learning can be defined as a student-centered learning process characterized by the following distinctive features: (a) small, intentionally formed groups, (b) well-defined roles for all group members, (c) group work structured to ensure that members work interdependently on the same learning task to produce a common or unified product, (d) group work structured to ensure that members are held personally accountable for their individual contributions to the final product, and (e) instructor's role is that of facilitator of and consultant to small groups during the learning process.

Cooperative learning may be viewed as an educational strategy that intentionally designs or structures the small-group learning process in an attempt to magnify its collaborative impact. It may be used in conjunction with any group-learning program cited in this manuscript (for example, small-group tutoring, supplemental instruction, or learning communities).

At the pre-college level, cooperative learning (defined in terms of five foregoing features) has been the most thoroughly researched and empirically well-documented form of collaborative learning among students; it has demonstrated positive effects on multiple student outcomes, including academic achievement, social development, and self-esteem (Johnson et al., 1981). The degree to which these positive outcomes are realized appears to vary commensurately with how many of its aforementioned defining features are carefully implemented (Slavin, 1990).

More recent evidence supporting the educational impact of cooperative learning at the postsecondary level is provided by a meta-analysis of its effects on college students' academic performance in science, math, engineering and technology that was conducted by the National Institute for Science Education. (Meta-analysis may be defined as a quantitative synthesis of many studies relating to a particular educational variable or instructional method.) Over 500 studies of small-group collaboration were included in this meta-analysis, and it was found that cooperative learning had a "robust" positive effect on such educational outcomes as (a) academic achievement, (b) student retention, and (c) attitude (liking) of the subject matter (Cooper, 1997).

The key features of cooperative learning can be intentionally implemented by means of a variety of structures—a term devised by Spencer Kagan (1992) to describe structured cooperative-learning procedures that may be used in a variety of curricular areas and learning contexts. Millis and Cottell (1998) define these "structures" as "essentially content-free procedures that can be used in a number of settings for a variety of purposes" (p. 40). For a detailed delineation of a wide variety of cooperative learning structures for use in college settings, see Cuseo (2002) or Millis and Cottell (1998). Listed below are some of the most popular cooperative learning structures.

Think-Pair-Share. Students are given a specified period of time to think individually about some concept or issue they are attempting to learn, then they form pairs to discuss their thoughts, listening carefully to their partner's ideas so that they can jointly construct a composite response which builds on their individual thoughts. As the final step of this structure, students are asked to share their composite response (Lyman, in Kagan, 1992).

Think-Pair-Square. Students first think alone about a question or issue relating to the concept they are learning, then pair-up with another student to discuss their thoughts and, lastly, the two pairs join together to form a "square" (4-member team) to discuss or integrate their ideas (Kagan, 1992)

Jigsaw. Teams are formed to learn a general topic and each teammate assumes responsibility for becoming an "expert" on one piece (subtopic) of this general topic. Then members leave their teams to form groups comprised of other students who have

chosen to be "experts" on the same subtopic. After meeting in different expert groups, students return to their home teams and teach their individual areas of expertise to their teammates. The final outcome of this process is the piecing together of separate subtopics (like a "jigsaw" puzzle) that should result in a more complete or comprehensive understanding of the whole topic by each participating student (Aronson, et al., 1978).

Curriculum-Integrated Peer Collaboration Programs

The peer collaboration practices described in this section are distinguished by the fact that they have been incorporated into the formal curriculum, thus moving them from the auxiliary position of an academic-support service to the more central position of a course-integrated program.

Supplemental Instruction (SI). This academic-support program was developed in the 1970s at the University of Missouri-Kansas City, which now serves as an international model for SI programming (Martin & Arendale, 1994). In SI programs, a student who has done exceptionally well in a particular course is paid to re-attend the same class along with novice learners, and helps the novices both individually and in group sessions that are regularly scheduled outside of class time. The student leader functions as a model learner, who takes notes, completes assignments, and takes tests along with the novice students.

The "supplemental" (out-of-class) sessions are typically conducted as informal seminars in which students compare notes, discuss reading assignments, predict test questions, and study collaboratively. The extra sessions may or may not be credit-bearing; if they do carry credit, one unit of college credit is the amount usually awarded. Historically difficult courses (also known as "high-risk" or "killer" courses) with high dropout or failure rates are typically targeted for this peer teaching-learning strategy. Often, these are introductory "gateway" or "gatekeeper" courses taken by first- or second-year students who must successfully complete them in order to progress to more advanced courses required for general education or their major field of study.

More recently, video-based supplemental instruction (VSI) has also been adopted as an alternative course-delivery system, whereby faculty lectures are presented on videotape and the

student facilitator provides guided review of the lecture tapes, stopping and replaying the tapes at key points to allow for personal reflection and group discussion (Martin & Blanc, 1994).

More than 350 colleges in the United States and abroad have adopted SI programs, and their positive impact on student retention has been reported for both entry-level and advanced courses across different institutional types, as well as for students at different levels of academic preparedness (Martin & Arendale, 1994). Research also indicates that students who participate in SI earn higher average course grades compared to students of equal ability who do not participate in the program, and SI programs have been found to be more cost effective than tutoring services or learning skills courses (Kochenour, et al., 1997).

The effectiveness of SI may be attributed to its following qualities: (a) It integrates academic skills instruction into a meaningful credit-earning, content-specific course; (b) it removes the remedial stigma often associated with "developmental" or "remedial" programs; and (c) it enables initially less-prepared students to gain access to and receive supplemental support in academically demanding courses, without lowering course instructors' academic standards (Arendale, 1994; Levitz, 1990; McGrath & Townsend, 1997; Peters, 1990).

Emerging Scholars Program. Based on Uri Treisman's (1992) collaborative workshops that promoted the academic success of African-American students' in mathematics courses, this academic-support program involves groups of 7-12 students who enroll in the same course and participate in group problem-solving workshops that are facilitated by advanced undergraduates.

The program typically focuses on students in math, engineering, or introductory-level science courses, and although originally targeted for underrepresented minorities and women, many campuses now intentionally create heterogeneous collaborative-learning groups comprised of white students and students of color (MacGregor, 2000).

Writing Fellows Program.

This academic support strategy functions as a "writing across the curriculum" program whereby upper-division students with strong

writing skills are recruited, receive extensive peer-teaching training, and are deployed to an undergraduate class (particularly large introductory courses in their major) where they read and respond to students' written work.

Learning Communities.

What all types or models of learning communities share as their defining or distinguishing feature is the co-registration of a cohort of students, who take the same block of courses together during the same academic term. While this is the common theme that unites all learning-community models, variations on this theme can occur with respect to: (a) the number of courses students take together during the term—which may range from two to an entire course load (4-5 courses), (b) whether the cohort comprises the entire class, a subset of a larger class, or some combination thereof—for example, a cohort may comprise the entire enrollment of a small English composition class and co-enroll in a history course with a larger class size, and (c) the degree of instructional coordination among faculty who teach the blocked courses taken by the student cohort—for example, no coordination by instructors whatsoever, some instructional coordination of course content and assignments, or full coordination in which all instructors team-teach all courses together as part of an integrated, interdisciplinary program.

Empirical support for the educational effectiveness of learning community programs is provided by Tinto (1997, 2000), who found that students in learning communities: (a) become more actively involved in classroom learning, (b) report greater intellectual gains, (c) tend to form their own support groups that extend beyond the classroom, (d) spend more time together outside of class, and (e) display high rates of retention (persistence to course and degree completion).

For classification purposes, learning communities may best be viewed as an umbrella program, embracing a variety of different curricular structures within which are nested two major forms of collaboration: (a) collaboration between students, and (b) collaboration between faculty. Those components of learning community models that primarily involve collaboration between students will be the focus of discussion here. Six basic learning-community models will be showcased in this section. Unless

otherwise indicated, these prototypes have been adapted from Gabelnick, MacGregor, Matthews, & Smith (1990), which is a source that may also be consulted for more extensive discussion of learning communities and for permutations or hybrid versions of the basic models described below.

- Course Linking (also known as, Course Pairing)

In this learning community model, a cohort of students co-registers for the same pair of courses, which they take concurrently during the same academic term. Course linking may also be adapted and extended to form sequential (two-term) learning communities whereby two to three courses are linked each term, so the majority of students stay in the same learning communities throughout the entire academic year (for example, throughout their critical freshman year).

One common way that paired courses are linked is in terms of some shared course content that relates to a broader topic, whereby each course develops a different aspect of this larger topic. For example, a small academic skill-building or learning process-oriented course (such as English composition, Speech, or First-Year Experience Seminar) may be linked with a larger, content-focused, lecture-driven course (for example, an introductory general-education course). Students then apply the skills they learn in their smaller process-oriented course to the content covered in the larger lecture course.

Another course-linking strategy involves pairing an academic-skill development course with a content-driven general education course, such as History. Students could then apply the learning skills and student-success strategies that are presented to them in the skill-development course (for example, note-taking and memory-improvement strategies) to the content covered in the general education course. This cross-course application serves to enhance the perceived relevance of the academic skills' course, and by linking it with a general education course, students gain access to a meaningful academic content to which they can apply the learning strategies discussed in their skill-development course. Moreover, if the academic skill-development course is populated by students from a developmental studies program, then the linked content course allows less-prepared students to be exposed to

more academically advanced students—who may model academic skills that can be emulated by their less-advanced cohorts.

Empirical support for linking academic skill-development courses and discipline-based content courses is provided by campus-specific research conducted at Schoolcraft Community College (Minnesota), where students in linked courses achieved significantly higher final grades in their content courses and had significantly lower withdrawal rates than did a control group of students who took the two courses independently (Noel, 1992).

- Learning Clusters

In this learning community model, a group of students co-register for the same cluster of 3-4 courses during a given semester. Clustered courses comprise a substantial portion, or the entire load, of a student's semester schedule. Faculty who teach courses in a cluster may or may not integrate their course content; however, in "integrated clusters," a one-hour weekly seminar taught jointly by the various faculty whose courses comprise the cluster, which is explicitly designed to integrate ideas and unearth cross-cutting themes among the clustered courses.

Clusters may also be tailored to meet the special needs of different student subpopulations. For instance, to accommodate the off-campus responsibilities of working commuter students, clustered courses may be scheduled back to back so that commuting students can make most effective use of their limited time on campus. In another variation of this model, honors students may take a thematic learning cluster in which two of their clustered courses are limited only to honor students, while the remaining course is a larger lecture class that is open to all students. Thus, a sense of community can develop among honor students without segregating them entirely, and without negating their potentially positive influence on other (non-honors) students.

- Freshman Interest Groups (FIGs)

First developed at the University of Oregon, this is a special form of learning cluster designed specifically for first-year students. Small cohorts of freshmen (15-25 students) are recruited via summer mailing and new-student orientation to register for the same 3-4 courses—which often constitute a related set of general

education requirements or pre-major courses in the students' field of academic interest. This cohort of freshmen travels together as a subset of about 20-30 students to three or four larger classes that they all have in common. One of these courses typically has a small-class component that involves only FIG students (for example, a lab session or discussion group formed from a course that has a larger number of students).

A trained upper-division student is assigned as a peer advisor to each FIG and receives academic credit for leading the FIG group, typically as an independent study or internship in leadership development. The peer advisor meets with FIG students regularly throughout the term (for example, in a weekly proseminar), and also meets with the coordinator of the entire FIG program—

a staff member or graduate teaching assistant. Peer advisors are selected on the basis of their prior record of academic achievement or student leadership, and are brought together for an extended orientation and training session before the start of the academic year. Faculty teaching in the FIG program may attend meetings between students and their peer advisor, or other faculty may be invited to the meeting as guest speakers, thus serving to promote faculty-student contact outside the classroom.

Empirical support for the effectiveness of the FIG model is provided by research conducted at the University of Washington, where it has been documented that fewer students withdraw from academically competitive courses if they are in a FIG, and display significantly higher grade-point averages than do students taking the same courses who are not members of a FIG program (Tokuno & Campbell, 1992).

• Transfer Interest Groups (TRIGS)

This is a variation of the FIG model, first developed at the University of Washington, in which transfer students (rather than freshmen) enroll in three junior-level courses that are typically gateway classes to the student's major (MacGregor, 2000).

• Federated Learning Communities (FLCs)

In this learning community model, a small cohort of students register for the same three courses that are offered under the rubric of an overarching theme, and which often includes an additional three-unit discussion seminar. The seminar is designed to integrate the material taught in the three separate courses and is led by a master learner—a faculty member whose educational background is not in any of the academic disciplines being taught, who takes the three courses along with the cohort of students. At some institutions, the federated learning community is provided with its own office, lounge, or seminar room which is designed to provide a "home" that fosters informal interaction and promotes a sense of belongingness among FLC members.

The educational value of this particular learning-community model is supported by research which indicates that students who have the experience of integrating two or more disciplines at the same time tend to demonstrate greater gains in cognitive development than do students who study the same material in separate, non-integrated courses (Winter, McClelland, & Stewart, 1981).

- Coordinated Studies Programs

This is the most ambitious learning community model, which involves a group of 20-25 students who take all their courses together in a given semester. The 4-5 courses are organized under an overarching theme and are co-designed and team-taught by the same group of faculty. The classes are usually scheduled in longer time blocks (for example, 3-6 hours) to allow for alternative learning experiences, such as extended discussions or field trips.

Course offerings and faculty teams are typically changed each term, and the courses comprising the coordinated studies program represent the faculty members' entire teaching load for the term, as well as the participating students' entire course load for that term.

COLLABORATION BETWEEN INSTRUCTIONAL FACULTY AND ACADEMIC SUPPORT SERVICES

Academic support is more effectively delivered and received if it is not isolated from, but integrated with, the content of college course and classroom learning. Effective learning strategies tend not to be permanently adopted and routinely applied by students in different subject areas if they are developed within isolated and insulated "learning skills" workshops or "study skills" courses (Gamson, 1993; Weinstein & Underwood, 1985). Educational research indicates that basic academic skills are most effectively learned in a meaningful context, as when they are applied to the learning of specific subject matter (Levin & Levin, 1991; Means, Chelemer, & Knapp, 1991). For effective learning skills to "take hold" in students, that is, to become fully incorporated into their habitual approach to learning, students need to have a sense of purpose for using these skills in relation to a specific subject area or particular course content. The importance of integrating learning-skill development with classroom-based learning is reinforced further by research on the human brain, which indicates that there is a clear difference between "declarative" knowledge—knowing what to do, as opposed to "procedural" knowledge—knowing how, when, and where to implement or apply that knowledge (Squire, 1986).

Described in this section are programs and practices that effectively connect or integrate academic support services with students' coursework and classroom performance.

Early-Alert (Early-Warning) System

This academic support strategy involves a formal feedback system through which course instructors alert learning assistance professionals and/or academic advisors about students in their classes who are in academic jeopardy at or before midterm. A recent national survey reveals that more than 60% of postsecondary institutions report midterm grades to first-year students for the purpose of providing them with early feedback on their academic performance; 10% of these institutions obtain student right-to-privacy waivers that enable them to report midterm grades to both first-year students and their parents (Barefoot, 2001). Students with dangerously low midterm grade reports are typically notified by letter to speak with their academic advisor who, in turn, refers the notified student to the appropriate support service. At some institutions, such as New York University,

advisors make follow-up phone calls to students who fail to respond to their letter of notification (Early Intervention Programs, 1992). At Brooklyn College (NY), faculty notify peer tutors when students are having academic difficulties, and their tutors initiate contact with the student (Levitz, 1991).

While issuing midterm-grade reports to struggling students is a laudable practice, Tinto (1993) warns that, by the time midterm grades are recorded and disseminated, feedback may come too late in the term to be optimally useful. Consequently, some institutions are resorting to an earlier feedback mechanism, based on student attendance during the first 4-6 weeks of class. For example, at New Mexico State University, attendance-problem requests are sent to instructors during the second week and sixth week of the term. Students demonstrating attendance irregularities who fall into any of the following categories receive a phone call from the Office of Advisement Services: (a) first-semester students, (b) students on academic probation, and (c) students with multiple early-alert reports (Thompson, 2001).

Another potential limitation of using midterm grade reports as an early-alert mechanism is that the grade itself does not specify the source(s) of the poor performance. Thus, rather than merely reporting a letter grade, some colleges issue early-alert forms that request additional information from the instructor, which is used to help diagnose the specific nature of the problem and facilitate targeted intervention. For instance, at Adelphi University (NY), early-warning rosters are released during the fourth week of class and faculty report students who are experiencing academic difficulty, using an efficient abbreviation code to identify the specific area(s) of weak performance: AS = assignment performance, C = class participation, EX = examination performance, IA = intermittent attendance, NA = never attended, NC = non-completed assignments, and WE = Weak Expository skills (Carlson, 2000).

Empirical evidence for the effectiveness of an early-alert system is provided by campus-specific research conducted at Vincennes University Junior College (Indiana). When a student begins to miss class at this institution, course instructors tear off one part of a computer-generated ticket whose keystroke input generates two postcards indicating concern about non-attendance, one which is addressed to the student's local residence and one to the student's

permanent address. Additional absences generate a second, more strongly worded postcard indicating that the student is in danger of being dropped from the course. The system also generates lists for academic advisors, alerting them of students majoring in their academic field who have received attendance notifications. Following institutional implementation of this early-alert system, the number of students receiving grades of D, F, or W was substantially reduced. The beneficial effect of the early-alert system was particularly pronounced in developmental mathematics classes, for which there was a 17% drop in D and F grades and a concomitant 14% increase in A, B, and C grades (Budig, Koenig, & Weaver, 1991).

Evidence for the positive impact of an early-alert system on student retention is provided by local research conducted at the University of Wisconsin–Oskosh. After the third of week of the semester, early-alert forms are sent to instructors teaching preparatory and basic-skill courses that are populated by previously identified "high-risk" students. Forms are sent to the Office of Academic Development Services which initiates intrusive intervention by contacting and meeting with each student to provide academic counseling, referral to a peer tutor program, and suggestions for other forms of assistance. Since the program was initiated, retention rates for at-risk students have risen steadily, reaching a level over 70 percent (Green, 1989).

In addition to formal early-alert or early-warning systems, the following course-integration strategies represent noteworthy approaches to collaboration between classroom faculty and academic-support service professionals that serve the needs of first-year students.

Course-integrated library instruction that incorporates information literacy (information search, retrieval, and evaluation skills) is integrated into the content of courses taken by first-year students. For example, librarians and professors may team-teach or co-design courses, course components, and out-of-class assignments that integrate library-research skills with course content (for example, via research papers or group projects).

Faculty provide specific information about the academic requirements of their courses to learning assistance professionals in order to enhance the relevance and effectiveness of academic

support and tutorial services. For example, instructors may provide a sample of reading assignments or lecture videotapes for tutorial use in the college Learning Center.

Academic support professionals provide instructional faculty with diagnostic feedback (via newsletters, presentations or workshops) about the types of academic assistance that first-year students typically need or seek with respect to their courses, and alert faculty to the common errors in new students' approaches to learning course material that are witnessed in academic support settings.

Learning assistance professionals visit "at-risk courses" (courses with high rates of student withdrawal and low grades) to describe how their services can contribute to student success in the course, and explicitly encourage students to capitalize on these services.

Instructors intentionally design class assignments that connect students with learning assistance professionals. For instance, students can be given an assignment that requires them to visit the Learning Center to complete a self-assessment inventory on learning styles or learning habits, the results of which may then be reviewed to determine their implications for improving students' course performance).

EDUCATIONAL PARTNERSHIPS BETWEEN ACADEMIC AND STUDENT AFFAIRS

For approximately 25 years, the higher education literature has pointed to a "persistent gap" or "schism" between the formal (academic) curriculum and the co-curriculum (student development programming outside the classroom) (American College Personnel Association, 1994; Miller and Prince, 1976). Some disturbing consequences of this schism have been (a) rigid bifurcation, compartmentalization, and isolation of student services into either "academic" or "student" affairs, (b) divisive territorial politics and dysfunctional competition for resources between these two major units of the college (Kuh & Banta, 2000), and (c) splintering of students' liberal education and holistic development into disjointed parts (Barr & Upcraft, 1990).

Collaborative partnerships between academic and student development professionals can help close the persistent gap

between the formal curriculum and the co-curriculum, serving to unite members of the college community who have been historically separated by artificial organizational or functional boundaries. One specific way in which this unification may be forged is through joint planning and execution of educational programs that serve to integrate academic and student life, such as those described below.

Integration of Academic Convocation and New-Student Orientation

Convocation may be defined as a formal assembly of members from the college community who come together for the purposes of (a) welcoming, (b) recognizing, (c) celebrating, and (d) inducting the freshman class—the newest members of the college community. At convocation, first-year students typically hear presentations from campus leaders who articulate the college mission and institutional expectations. New students then proceed to a dais where they are greeted individually by representatives of the institution, receive a welcoming gift from the college, and sign their name on a scroll or register, thus reenacting the medieval university practice of students signing a "matricula"—a roll or register that documented new students' incorporation into the university's community of learners (Boyer, 1987).

Since convocation is a formal ceremony, faculty don academic regalia, as they would for the graduating senior class. In this fashion, convocation provides a complementary "bookend" to the graduation experience, with both events serving as symmetrical celebrative ceremonies that signify commencement—a fresh start or beginning. Just as seniors experience a special event to which only their class is invited and honored, so too are freshmen selectively invited to an event especially held in their honor—at a time when no other classes of students are on campus and when all campus resources are devoted exclusively to them. Similar to graduation, parents and family members are invited to attend the convocation ceremony, and they are likely to do so because it is a formal, celebratory event at which their student will be recognized and honored. The viability of conducting convocation for new students is highlighted by the fact that postsecondary institutions with freshman class sizes ranging from 400 to over 3,000 do conduct such a ceremony, which is attended by all members of the school's entering class.

If convocation is offered as the first component of the college's new-student orientation program, it acquires the potential to exert a very positive and powerful first impression on new students. This strategy implements a number of key principles or "best practices" that are associated with enhancing students' college commitment, involvement, and retention. Namely, offering convocation as the initial component of new-student orientation serves the following important functions. (a) It implements the principle of "front loading"—reallocation and redistribution of institutional resources to the front of the college experience (National Institute of Education, 1984). (b) It is a community-building ritual that promotes student identification with the institution (Kuh, Schuh, Whitt, & Associates, 1991). (c) It is a meaningful rite of passage that elevates students' sense of belonging and incorporation into a new community (Tinto, 1993). (d) It serves to make new students feel less marginalized and more significant—that they "matter" (Schlossberg, Lynch, & Chickering, 1989). (e) It provides an important "validation" experience for first-generation students, for whom the transition to college is not a normal or routine rite of passage (Rendon, 1994).

Empirical support for using convocation to shape students' first impression of college is provided by Richard Light (2001), who conducted extensive interviews with undergraduates to assess the impact of different college experiences on their development. One college senior's recollection of ideas presented to him during convocation provides a poignant testimony for the potential power of this event: "I remember them because those ideas were presented to all of us so soon as new students, with all of us a bit nervous, all eager to do well, all eager to meet new people. It was one thing we all had in common—we had all heard the same welcoming presentation. The main thing is that it set a tone. I think hitting us right out of the gate, when we first arrived, was critical and a good idea" (p. 205)

In addition to the integration of academic convocation and new-student orientation, the following programs also exemplify productive partnerships between academic and student affairs that are intentionally designed to promote the success and holistic development of first-year students.

Living-Learning Centers

Living-learning centers are residentially based educational programs combining academic and student affairs programming, which are typically designed for first-year students. For example, academic advising and learning assistance services may be provided in student residences, or seminar-style classes may be taught in residence lounges. At large universities, living-learning centers typically are designed to provide a more intimate "small-college" atmosphere, while at small colleges these centers are organized around different learning themes, such as wellness or diversity (Schein & Bowers, 1992).

Residential Learning Communities

These are programs that involve implementation of learning community models (such as those previously described in this manuscript, but also designed to include a residential-life component whereby students enrolled in the same courses also share the same living space on campus. For example, at the University of Missouri-Columbia, Freshman Interest Groups (FIGs) of 20 students who live on the same floor of a residence hall also enroll in the same four courses (Levine & Tompkins, 1996).

Extended-Orientation Courses (also known as First-Year Experience Seminars)

Student affairs professionals have played a key role in the adoption and proliferation of first-year experience seminars, which are intentionally designed to facilitate the college adjustment and success of first-year students by "extending" new-student orientation into a credit-earning, first-term course. The course represents a collaborative venture with the academic sector to ensure that beginning students receive the holistic support they need to survive and thrive during their critical first year of college. The content of first-year experience seminars (hereafter, referred to as first-year seminars) typically include any or all of the following topics: (a) understanding the purpose, values, and expectation of higher education, (b) learning how to learn (for example, academic-skill development, learning strategies, and critical thinking), (c) self-management (for example, time and stress management, self-discipline and self-motivation), (d) self-assessment and self-awareness (for example, assessment of

learning styles and career interests), (e) life planning—connecting the present academic experience to future personal and vocational goals, and (f) holistic development (social, emotional, and physical wellness),

First-year seminars are rapidly becoming familiar additions to the college curriculum, as evidenced by the following findings: (a) Almost 70% of American colleges and universities surveyed have implemented an extended-orientation course (National Resource Center, 1998); (b) approximately 80% of first-year seminars were initiated during the 1980s and nearly 25% during the 1990s (Barefoot & Fidler, 1996); (c) 88% of first-year seminars carry academic credit toward graduation; and (d) approximately 47% of first-year seminars are required for all first-year students (National Resource Center, 1998).

In their meticulous synthesis of more than 2500 postsecondary studies relating to how college programs and experience affect student development, Pascarella and Terenzini (1991) reached the following conclusion about first-year seminars: "The weight of the evidence suggests that a first-semester freshman seminar is positively linked with both freshman-year persistence and degree completion. This positive link persists even when academic aptitude and secondary school achievement are taken into account" (pp. 419-420).

The most frequently assessed outcome of the first-year seminar has been its impact on student retention (persistence). Using virtually all major types of research methods (quantitative and qualitative, experimental and correlational), the positive impact of the course on this student outcome has been reported for all types of students (for example, at-risk and well-prepared, minority and majority, residential and commuter), at all institutional types (2- and 4-year, public and private), institutional sizes (small, mid-sized, large), and institutional locations (urban, suburban, rural). As Barefoot and Gardner note, "First-year/student success seminars are remarkably creative courses that are adaptable to a great variety of institutional settings, structures, and students" (1998, p. xiv).

Evidence for the positive impact of first-year seminars on students' academic performance is not as extensive as it is for student retention (Barefoot, 2000). Nevertheless, there are many campus-

specific studies indicating that student participation in the seminar is associated with improved academic performance—as measured by different academic-achievement indicators, such as the following: (a) cumulative grade-point average (GPA) attained at the end of the first term or first year of college (House, in Barefoot et al., 1998), (b) cumulative GPA attained beyond the first year of college (Wilkie & Kuckuck, 1989), (c) GPA attained versus GPA predicted (Wilkie & Kuckuck, 1989), (d) total number of first-year students in good academic standing, that is, students neither placed on academic probation nor academically dismissed (Soldner, in Barefoot et al., 1998), (e) total number of first-year courses passed (Garret, in Barefoot, 1993), (f) total number of first-year courses completed with a grade of "C" or higher (Stupka, in Barefoot, 1993), and (g) percentage of students who qualify for the Dean's List and Honors Program (Thomson, in Barefoot et al., 1998).

Advantages of First-Year Seminars

The success of first-year seminars in promoting student retention and academic performance may be attributed to a number of course characteristics. Among the most powerful educational advantages of offering the first-year seminar as an academic support strategy stem from the following course qualities and potentialities.

- By "extending" new-student orientation into a full-semester course, the first-year seminar assures that there is sufficient time for coverage of a wide range of topics pertinent to effective college adjustment and student success. Moreover, the course allows for timely discussion of college adjustment issues when they arise during the critical first semester. As Upcraft and Farnsworth (1984) point out that, "Too often, orientation planners overwhelm students with anything and everything they might need to know. Orientation planners must not only decide on what entering students need to know but when they need to know it" (p. 30). For example, the topics of note-taking and reading strategies may be covered in the seminar at the very start of students' first term because these skills will be immediately required of new students in all their courses. Coverage of test-taking strategies could be intentionally scheduled to take place later in the term, perhaps prior to midterm-exam week, when students could immediately apply these strategies to midterm exams, and discuss their effectiveness after receiving

midterm-test results. Timely class discussion of adjustment problems and solution strategies, at or around the time students experience them during their first term of college, should highlight for students the immediate relevance and usefulness of course information, thereby increasing their motivation to attend to it and put it into practice.

- By explicitly emphasizing the development of highly adaptable and transferable skills, the first-year seminar fills a curricular void left by traditional, content-driven college courses which tend to focus largely on the acquisition of circumscribed and prescribed bodies of knowledge. (Any transferable skill development that happens to take place in content-driven courses usually remains tacit and incidental to discipline-specific content coverage.) In contrast, the seminar has the capacity to function in a "meta-curricular" manner—transcending specialized content and traversing disciplinary boundaries by focusing on the development of portable strategies and skills that have cross-disciplinary applicability.

- Extending new-student orientation into a full-semester course allows for continuity of contact between the seminar instructor and new students throughout their first term of college enrollment. This continuous contact enables the instructor to closely monitor the progress of new students during their critical first semester, and allows sufficient time for bonding to take place between students and teacher. Moreover, if it can be arranged for academic-support professionals to be involved as course instructors (for example, students' academic advisors), then the seminar may serve as a vehicle for providing close and continuous student contact with a key academic-support agent during the critical first term of college life. Research conducted at North Dakota State University indicates that, if new students' academic advisor also serves as their first-year seminar instructor, then these students make significantly more out-of-class contact with their academic advisor during their first term than students whose advisors do not co-serve as their first-year seminar instructor (Soldner, in Barefoot et al., 1998)

- Extending orientation into a full-length course provides ample opportunity for peer bonding to develop among classmates because they interact regularly in a social context that is devoted to the student-centered topic of college adjustment and success.

This arrangement can provide students with an ongoing, intentionally structured forum or social support group within which they may discuss relevant personal issues that arise during the often stressful first semester of college. Boyer (1987) succinctly captures the gist of this advantage of first-year seminars: "After the flush of newness fades, all new students soon discover that there are term papers to be written, course requirements to be met, and conflicts between the academic and social life on campus. Students need to talk about these tensions" (p. 51).

- Course assignments the first-year seminar can be intentionally designed to connect new students with key academic-support professionals and campus services. Among the most frequently reported objectives of first-year seminars offered by institutions across the country is to promote student awareness or knowledge of key campus programs and out-of-class support agents, and to increase student use of college resources and services (Barefoot & Fidler, 1996). Local research conducted at various types of postsecondary institutions indicates that the seminar is effective for achieving these objectives. For instance, at Champlain College (Vermont), student utilization of the learning resource center and tutoring services has remained consistently and substantially higher among first-year seminar participants than non-participants (Goldsweig, in Barefoot et al., 1998). At the University of Wyoming, library circulation and use of student services increased significantly following institutional adoption of the first-year seminar as a required course (Reeve, in Barefoot, 1993).

Connecting students with support-service professionals via the first-year seminar is usually accomplished by either or both of the following course practices: (a) inviting support professionals to class as guest speakers or as members of a presentation panel, and (b) having students interview or complete course assignments that involve interaction with support-service professionals outside the classroom (for example, professionals in learning assistance, library science, or computer technology; academic advisors, college faculty, peer tutors, or upper-division students in the first-year students' intended major).

- Course assignments can also be intentionally constructed that require students to immediately apply success strategies learned in the seminar. For example, students may be given an assignment that requires them to implement a time-management

plan for the first term, such as constructing a semester schedule that includes due dates for tests and assignments in all courses, as well as designated times for study, recreation, and employment. Or, students may be asked to apply effective learning strategies to current courses, such as keeping a "learning log" of academic success strategies discussed in the seminar that they are attempting to use in other first-semester courses).

- Students may be given course assignments in the first-year seminar that require them to engage in long-term educational and career planning, which serve to connect their present college experience with their future goals and aspirations. For instance, the following types of assignments serve to promote first-year students' long-term planning: (a) an undergraduate plan that includes courses in general education and the student's intended academic specialization (major field of study), (b) a tentative post-baccalaureate educational plan for graduate or professional school, and (c) a tentative career plan that encourages first-year students to identify potential positions, construct a model resume that would prepare them for entry into such positions, and initiate a professional portfolio—a collection of materials that illustrates student competencies or achievements, and demonstrates educational or personal development (for example: best written work, art work, research projects, letters of recommendation, co-curricular accomplishments, personal awards, and certificates of achievement).

Norwich University (Vermont) uses its first-year seminar in this fashion to engage students in long-range educational planning and promote student dialogue with their academic advisors about their educational plans. The first-year seminar syllabus at Norwich calls for students to meet with their advisor on three occasions during the first semester, in addition to their meeting for course scheduling. The second meeting occurs at about the midpoint in the semester, at which time students bring a self-assessment report that they have completed as a first-year seminar assignment. Advisors use this report to focus discussion with students about their present academic progress and future educational plans (Catone, 1996).

Marymount College (CA), a 2-year institution devoted exclusively to preparing students for successful transfer to baccalaureate degree-granting colleges and universities, requires a first-year

seminar for all its incoming students. The Director of the Advisement and Transfer Center visits each class and outlines for students the course requirements of different 4-year institutions for general education and different academic majors. Following the classroom visitation by the Director of Advisement and Transfer, first-year seminar students are given an assignment carrying significant point value that requires them to meet with their academic advisor during the first 4-6 weeks of their first term to develop a general-education plan that includes what courses they are planning to take and when they are planning to take them—fall, spring, or summer. (Students and advisors receive a three-year institutional plan of projected of fall, spring, and summer course offerings to assist them in this long-range planning and scheduling process.) Students are also supplied with a form or grid with blank lines for courses to be taken during the next two-to-three years. Students with their advisor to complete a tentative, personal 2- to 3-year plan that includes general-education requirements for the associate degree (A.A. or A.S.) and pre-major requirements for their intended field of specialization. (For students still undecided about their intended major, they are advised to identify elective course in academic fields which they might consider as a possible major, or minor, in order to test their interest and aptitude for that academic field.)

The student's educational plan is completed on a triplicate form, one copy of which is kept by the advisor, one copy is kept by the student, and the third copy is returned by the student (along with a written reflection on the plan) to the first-year seminar instructor who accepts it as a completed course assignment and credits it toward the student's course grade.

Students typically report in their written evaluations of this long-range planning assignment that it had a motivating effect on them, often claiming that the plan made their academic goals more concrete and provided them with a visible "road map" of their educational future. Students also frequently comment that the assignment enabled them to either confirm their plans or modify them while there was still time to do so. For example, students frequently report that they did not have a clear idea about what specific courses were required for their intended major and the assignment made them realize that these course were not compatible with their personal interests, abilities, or values (Cuseo, 2001).

The importance of encouraging first-year students to engage in this process of long-term educational planning is highlighted by the finding that approximately 50% of all entering students are undecided about their academic major at college entry, and the remaining 50% of beginning college students who have allegedly "decided" their major will eventually change it (Titley & Titley, 1980). It is estimated that, on average, first-year students will change their plans about an academic major three times before college graduation (Gordon, 1984; Willingham, 1985). This degree of student indecisiveness and propensity for changing majors has been reported at institutions of all types, including selective private colleges (Marchese, 1992) and flagship research universities ("What We Know About First-Year Students," 1996; "What Do I Want to Be," 1997).

Some indecisiveness and changing of direction about majors is healthy, perhaps reflecting initial exploration and eventual crystallization of educational goals that naturally accompany personal maturation and increased experience with the college curriculum. However, this vacillation may also reflect confusion, procrastination, or premature decision-making, due to students' lack of knowledge about themselves or the relationship between college majors and future careers. Late changes in students' academic plans can result in longer time to degree completion, and possible attrition, because students are faced with the time-consuming task of completing additional courses in order to fulfill different degree requirements for the newly selected major. It is noteworthy that less than half of all college students in America complete their baccalaureate degree in four years (U.S. Bureau of the Census, 1994), and the number of college students who take five or more years to graduate has doubled since the early 1980s (Kramer, 1993). Student confusion and poor decision-making with respect to initial selection of an academic major may be one factor contributing to the extended length of time it now takes college students to complete graduation requirements.

Intentionally designed assignments, delivered to students via the first-year seminar, which encourage students to engage in careful self-assessment and reflective long-range planning, can serve as an intrusive strategy for reducing protracted delays in graduation that stem from student confusion, vacillation, and procrastination about educational planning and decision-making. Indeed,

institutional research at Central Missouri State University has revealed that students who participate in a first-year seminar that includes an academic planning component tend to complete their baccalaureate degree in a time period that is significantly shorter than that taken by students who do not participate in the course (DeFrain, in Barefoot, 1993). The likelihood that this reduced time to graduation may be attributed directly to the first-year seminar's effect on promoting earlier and more accurate crystallization of students' college major and career plans is suggested by findings reported at Irvine Valley College—where longitudinal research has been conducted on seminar participants' self-reported academic and career plans prior to the course, immediately after the course, and after the third semester of college. This campus-specific study revealed that students who participated in the first-year seminar report much more focused career and academic goals at the end of the course and did so, again, after completion of their third semester in college (Belson & Deegan, in Barefoot, 1993).

- First-year seminars may be linked with other first-term courses to magnify the impact of first-year learning communities. For example, at Temple University, campus-specific research on first-year students who have enrolled in core (general education) courses that have been linked with a freshman seminar reveal that participating students achieve higher GPAs, have higher course completion rates, and have higher first-semester retention rates than freshmen who do not enroll in linked courses (Levine & Tompkins, 1996).

Middlesex Community College (NJ) has extended the strategy of course linking by coupling its freshman seminar with two or three other courses to form the following "course clusters": (a) "Liberal Arts cluster" (Freshman Seminar + English Composition + Introduction to Psychology), (b) "Business cluster" (Freshman Seminar + Introduction to Computers + Introduction to Business), and (c) "Liberal Studies cluster" for developmental students (Basic Writing + Fundamentals of Math + Reading Strategies). Using a block-registration format, the same cohort of freshmen enroll in all courses that comprise the cluster, thus creating a learning community of first-year students who share a common course schedule that includes the first-year seminar (Levitz, 1993).

· The first-year seminar can serve as vehicle for early identification of first-term students who may be academically "at-risk." Evidence gathered at the University of South Carolina suggests that a failing grade in the first-year seminar may be a "red flag" that calls attention to students who will later experience academic problems or attrition (Fidler & Shanley, 1993). This finding reinforces research conducted on four consecutive cohorts of first-year students at the Massachusetts College of Liberal Arts, where it was found that students' first-year seminar grade is a better predictor of their overall first-year academic performance than either high school grades or college-entry SAT/ACT scores (Hyers & Joslin, in Barefoot et al., 1998). These findings strongly suggest that students' academic performance in the first-year seminar can serve as an accurate diagnostic sign for identifying first-term students who may be academically at-risk and in need of academic assistance or psychosocial intervention.

This diagnostic and prognostic capability of the first-year seminar may be tapped more proactively if seminar instructors issue midterm grades or midterm progress reports to students experiencing these problems, and if these grades are also sent to academic advisors or academic-support professionals (for example, via the academic dean's office or the learning assistance center). First-term students receiving grades below a certain threshold or cutoff point in the seminar could then be contacted for consultation and possible intervention. To determine this cutoff point, research might be conducted on grade distributions in the first-year seminar to identify the grade below which a relationship begins to emerge between poor performance in the course and poor overall first-year academic performance or first-year attrition. Such research has been conducted at the Massachusetts College of Liberal Arts, where it was discovered that students who earned a grade of C+ or lower in the seminar had a significantly higher rate of first-year attrition ($p < .001$) than students who earned a grade of B- or higher in the course (Hyers & Joslin, in Barefoot, et al., 1998).

Use of midterm grades as an "early alert" or "early warning" system is nothing new to higher education. However, a perennial problem with successful implementation of this procedure is lack of compliance because faculty may have neither the time for, nor the interest in, calculating and reporting midterm grades for all their students. However, if the first-year seminar grade is a good proxy

for first-year academic performance in general, then the midterm grade in this single course may serve as an effective and efficient early-warning signal. Moreover, given that first-year seminar instructors often self-select into the program because of their personal interest in and concern for promoting the success of first-year students, they should display a high rate of compliance or reliability with respect to submitting students' midterm grades in an accurate and timely manner.

- The first-year seminar can provide a convenient classroom context for gathering assessment data on students at college entry. Diagnostic assessment of beginning college students' support-service needs is now possible with the availability of instruments intentionally designed to identify freshmen who are academically "at risk," such as the (a) Learning and Study Skills Inventory (LASSI)(Weinstein, Schulte, & Palmer, 1987), (b) Motivation, Study, & Learning Questionnaire (MSLQ)(Pintrich, McKeachie, & Smith, 1989), (c) Study Behavior Inventory (SBI) (Kerstiens, 2000) and (d) Behavioral and Attitudinal Predictors of Academic Success Scale (Wilkie & Redondo, 1996).

In addition to these instruments designed for identifying students who are at-risk academically, there are also instruments available that are designed specifically to identify students who are at-risk for attrition, such as the: (a) College Success Factors Index (CSFI) (Hallberg & Davis, 2001), (b) Noel/Levitz College Student Inventory (Striatal, 1988), (c) Anticipated Student Adaptation to College Questionnaire (Baker & Schultz, 1992), and (d) Student Adaptation to College Questionnaire (Baker & Siryk, 1986). The prospects for college success of at-risk students identified by any of the foregoing assessment instruments could be greatly enhanced if these students experience proactively delivered support services or early interventions that are personally tailored to meet their identified needs. However, institutions interested in using these instruments to identify at-risk students must find the time and place to conduct these assessments. The first-year seminar can serve this function, providing a relevant curricular structure and a comfortable classroom context within which to conduct comprehensive and proactive assessment of new students' needs during their first term in college. If the seminar is a required course, then these instruments may be administered to the entire entering class at the onset of the semester, and the results analyzed to identify patterns of potential adjustment

difficulties among the cohort of new students on campus. This information could be used by the college to help design broad-based, data-driven support programs that may serve to proactively combat or "short-circuit" identified sources of potential academic threat and early attrition among its newly admitted students.

SCHOOL-COLLEGE PARTNERSHIPS

Probably the most proactive and preventative approach to increasing students' academic success is through collaboration with the schools that prepare future college students. During the 1990s, the American Association for Higher Education (AAHE) made school/college collaboration a key focal point of its national reform agenda (American Association for Higher Education, 1993). This national reform effort fueled a proliferation of school-college partnerships that focused primarily on the following objectives: (a) early identification and intervention programs which bring K-12 students to college campuses for educational enrichment and academic skill building, (b) school-college course articulation and curriculum development programs, and (c) professional development opportunities for college faculty and academic support professionals to engage in K-12 service and scholarship (Wilbur & Lambert, 1995). Listed below are the major forms of school-college partnerships that have been designed to implement these specific objectives, and to achieve the more overarching goal of facilitating the academic transition of students from school to college.

Summer Bridge Programs

This form of school-college partnership unites high school faculty with college faculty and learning-assistance professionals to teach in a summer program (ranging from one to six weeks). The program is delivered to students during the summer intervening between their last term in high school and their first term in college, thus serving as a "bridge" between high school and higher education. Summer bridge programs typically target academically "at-risk" students (for example, low-income, first-generation, or underrepresented students) and typically include the following program components (a) academic skills assessment and instruction, and (b) orientation to higher education, and (c) a

residential experience whereby participants take courses together and reside on campus in the same college residence.

Probably the most extensively employed and systematically evaluated summer bridge program is the one conducted by the California State University system, which enrolls over 2,000 freshmen and 300 first-year transfer students annually in its 4-6 week program (Garcia, 1991). Statewide policy mandates that all campus-specific summer bridge programs conclude with two exit exams: The California State University's English and Mathematics placement tests for university-level instruction. Students who do not pass these tests are enrolled in the university's yearlong freshman basic skills program, thus ensuring that entering students who need additional preparatory instruction in basic skills will receive this instruction proactively—during the first year of college experience.

Research conducted by external evaluators demonstrates that students who participate in the Summer Bridge program: (a) are more likely to enroll in college in the fall semester, (b) make more frequent use of campus services, (c) interact more frequently with faculty and students outside of class, (d) report greater satisfaction with their campus friendships, and (e) display significantly higher first- and second-year retention rates, relative to students who have not experienced the program (Garcia, 1991).

Additional evidence supporting summer bridge programs has been gathered at the Indiana University at Kokomo, where matriculation and graduation rates for cohorts of underprepared students who participate in the college's summer bridge program have remained significantly higher than for cohorts who entered the college prior to program implementation (Green, 1994).

High School Outreach Programs

These programs involve collaboration between secondary schools and colleges to facilitate high school students' college access, transition, and retention.

Typically, underrepresented high school students are targeted for program participation. However, outreach programs have also been designed for younger students (junior high or elementary school), which are commonly referred to as "Early Identification Programs."

Academic Alliances

These are partnership programs between high school and college educators who teach in the same academic discipline. They come together for the purpose of identifying critical subject-matter knowledge, core concepts, and pedagogical strategies that promote cumulative learning in their shared subject area. For example, high school-and college educators may collaborate to develop subject-specific capstone courses for high school seniors.

Listed below are other promising school-college partnership strategies that have yet to evolve into formal programs but, nevertheless, warrant mention as promising practices.

Academic support professionals teach advanced college-credit courses to high school seniors for the purpose of stimulating their interest in and attendance at college. High school students may take these courses on the college campus, where they may also be allowed free access to the university's educational and recreational facilities, thereby further promoting student identification with and involvement in the college community.

Academic support professionals from colleges meet with teachers and counselors at feeder high schools—where they review the academic performance of the school's graduates during their first year at the college—for the purpose of identifying strengths and voids in the college preparatory program.

College students tutor high school students in subject matter relating to the college students' academic major—for purposes of promoting high school students' (a) knowledge of the subject matter, (b) preparation for college and (c) interest in attending college.

Colleges provide a teaching-learning "hotline" for use by local high school students and high school instructors (for example, math education hotline).

College academic-support professionals administer Math and English placement tests to students during their sophomore or junior year in high school, thereby enabling high school teachers to

more proactively diagnose and cultivate college-relevant academic skills prior to high school graduation.

Colleges offers summer programming for high school juniors to prepare them for their senior year experience, their upcoming college-application process, and their eventual first-year experience in college.

High school teachers are granted sabbatical leaves to serve as "master learners" in a federated learning community program offered by the college.

This procedure is identical to the Federated Learning Community (FLC) model previously described in this manuscript, the only difference being that a high school instructor, rather than a college faculty member, attends the federated courses and serves as the master learner. The high school teacher is granted a complete tuition waiver by the college—which also helps the high school pay for the instructor's replacement.

The central objective of this practice is to provide high school teachers with a professional development opportunity that may serve to enhance their ability to prepare high school students for the academic expectations and responsibilities they will encounter in college.

SUMMARY AND CONCLUSION

A retrospective look at the most successful academic-support programs cited in this manuscript suggests that there are recurrent features that traverse successful programs which may be abstracted and highlighted as core principles of effective or exemplary program delivery of academic-support services to first-year students. These key principles of powerful program delivery are identified in this section and will serve as the conclusion to this manuscript.

Effective First-Year Support Programs are Intentionally Student-Centered

Powerful first-year programs are oriented toward, focused on, and driven by the intentional goal of promoting student success. This is

defining feature of effective first-year support programs is articulated by John Gardner, founding father of the freshman year experience movement: "The freshman year experience efforts are manifested by their deliberateness, their effort to make things happen by design, not by accident or spontaneity, i.e., those things that must happen if students are more likely to be successful" (1986, p. 267).

Rather than being hampered or hamstrung by the force of pre-existing procedural habits, organizational convenience or institutional inertia, the effective programs showcased in this manuscript often involve creative and intentional restructuring or reorganization of traditional delivery systems to center them squarely on the goal of promoting students' academic success and retention. These student-support programs reflect the type of shift to "learning-centered management" called for by Astin (1979) and reiterated by Pascarella and Terenzini (1991), that is, they take an approach to programmatic decision-making which "consistently and systematically takes into account the potential of alternative courses of administrative action for student learning" (p. 656).

For example, learning community programs cited in this manuscript serve to radically restructure the college curriculum to promote student learning by capitalizing on the proven power of peer collaboration. The cooperative learning structures cited in this manuscript work to achieve the same objective by reorganizing the college classroom—transforming it from its traditional format of one large group of individuals working independently—into small teams of peer learners who work interdependently and collaboratively. Interestingly, when learning community programming is combined with cooperative learning pedagogy, the positive impact of peer collaboration is further magnified, as evidenced by research conducted at Seattle Central Community College—where students in learning communities who also experience cooperative learning methods in their classes, report greater intellectual gains than do learning-community students who are not exposed to cooperative learning methods in the classroom (Tinto, 2000).

Effective First-Year Support Programs are Intrusive

Powerful programs initiate supportive action by reaching out to students and bringing or delivering support to them, rather than

passively waiting and hoping that first-year students will seek it out on their own. Ender, Winston, & Miller (1984) captured the gist of this principle almost 20 years ago when they forcefully stated that: "It is totally unrealistic to expect students to take full advantage of the intellectual and personal development opportunities [on campus] without some assistance from the institution" (p. 12). Their words are equally or perhaps more relevant today because of the growing number of underprepared, underrepresented, and first-generation students on college campuses. Recent research indicates that the retention and academic success of underrepresented and first-generation students, in particular, is seriously undercut by institutional over-reliance on student-initiated involvement in campus-support programs (Rendon, 1994; Terenzini et al., 1994).

Both student effort and institutional effort are required to promote students success, but very short shrift has been paid to the latter form of effort in the higher education literature (Kuh, Schuh, Whitt, & Associates, 1991). It is patently clear that effective programming for first-year students is characterized by a high degree of institutional initiative and expenditure of substantial institutional effort to ensure that programmatic support reaches all students who are likely to profit from it.

Effective support programs cited in this manuscript implement the principle of intrusiveness by engaging in such practices as: (a) delivering support services to students on their "turf" (for example, via living learning centers and residential learning communities), (b) infusing support services directly into the classroom (for example, through supplemental instruction and course-integrated library instruction), and (c) requiring students to use support programs (for example, as course assignments in the first-year seminar).

Effective First-Year Support Programs are Proactive

Powerful program delivery is characterized by early, preventative action designed to address students' needs and adjustment issues in an anticipatory fashion—before they eventuate in full-

blown problems that require reactive intervention. As Tinto (1993) categorically states, "One of the clearest aspects of effective programs for academically at-risk students is their proactive orientation toward intervention. However constructed, the principle of effective programs for at-risk students is that one does not wait until a problem arises, but intervenes proactively beforehand or at least as soon as possible" (p. 182).

Proactive program delivery is the sine qua non of effective first-year support programs because it ensures that support reaches students at the time they need it the most—when they are most vulnerable to academic failure and attrition—and when support is most likely to have its greatest long-term impact on students. "Front loading" has become an almost axiomatic principle of effective undergraduate education, and many of the successful programs described in this manuscript successfully implement this principle, such as: (a) summer bridge programs, (b) early-alert systems, (c) programs that merge new-student orientation with academic convocation, and (d) first-year experience courses.

Effective First-Year Support Programs are Collaborative

Powerful student-support programs typically involve cooperative alliances or partnerships between different members and organizational units of the college, which work together in an integrated, interdependent, and symbiotic fashion to provide comprehensive, holistic (whole-person) support for first-year students. Recent scholarly support for the importance of collaboration as a program-delivery principle is provided by Braxton and Mundy (2001-2002), who reviewed a special series of contemporary articles that focused on merging retention theory with retention practice. After synthesizing the recommendations cited in these articles, the reviewers reached the following conclusion about programs and practices designed to promote student retention : "The most meaningful and far-reaching institutional efforts call for collaboration within university divisions and departments. These relationships are imperative to effective retention programs and efforts" (p. 94).

Successful support programs cited in this manuscript are distinguished by the presence of cross-functional collaborative relationships, such as those between (a) faculty and academic-support specialists—to implement effective early alert systems and

course-integrated learning assistance programs; (b) academic and student affairs professionals—to implement jointly conducted orientation-and-convocation programs and living/learning centers, and (c) colleges and schools—to coordinate summer bridge and school outreach programs.

Perhaps one of the most important benefits of collaborative programs is that they serve to foster the development of a "culture" of collaboration on campus. Higher education research reveals that campus cultures which are identified as collaborative, rather than competitive or individualistic, are characterized by a higher level of faculty and staff morale and a greater sense of perceived "community" among its members (Austin, Rice, Splete, & Associates, 1991). This positive byproduct of collaborative programming on faculty and staff may, in itself, serve to promote the retention and success of first-year students on campus.

REFERENCES

Abrams, H., & Jernigan, L. (1984). Academic support services and the success of high-risk students. *American Educational Research Journal*, 21, 261-274.

Alexander, J. M., & Stark, J. S. (1986). Focusing on student outcomes. Ann Arbor, Michigan: National Center for Research to Improve Postsecondary Teaching and Learning, University of Michigan.

ACT. "National college dropout and graduation rates, 1999." [<http://www.act.org/news>]. Feb. 2001.

American Association for Higher Education (1993). AAHE's new agenda on school/college collaboration. AAHE Bulletin, 45(9), pp. 10-13.

American College Personnel Association (1975). A student development model for student affairs in tomorrow's higher education. Journal of College Student Personnel, 16, 334-341.

American College Personnel Association (1994). The student learning imperative: Implications for student affairs. Washington, D.C.: Author.

Arendale, D. R. (1994). Understanding the supplemental instruction model. In D. C. Martin & D. R. Arendale (Eds.), Supplemental instruction: Increasing achievement and retention (pp. 11-22).

New Directions for Teaching and Learning, No. 60. San Francisco: Jossey-Bass.

Aronson, E., Blaney, N., Stephin, C., Sikes, J., & Snapp, M. (1978). The jigsaw classroom. Beverly Hills, CA: Sage.

Astin, A. W. (1979). Student-oriented management: A proposal for change. In Evaluating educational quality. Washington, D.C.: Council on Postsecondary Accreditation.

Astin, A. W. (1993). What matters in college? San Francisco: Jossey-Bass

Astin, A.W., Parrott, S., Korn, W., & Sax, L. (1997). The American freshman—Thirty year trends, Los Angeles: Higher Education Research Institute, University of California, Los

Angeles.

Austin, A. E., Rice, E. R., Splete, A. P., & Associates (1991). *A good place to work: Sourcebook for the academic workplace*. Washington, D.C.: The Council of Independent Colleges.

Baker, R. W., & Schultz, K. L. (1992). Measuring expectations about college adjustment. *NACADA Journal*, 12(2), 23-32.

Baker, R. W., & Siryk, B. (1986). Exploratory intervention with a scale measuring adjustment to college. *Journal of Counseling Psychology*, 33, 31-38.

Barefoot, B. O. (Ed.) (1993). *Exploring the evidence: Reporting outcomes of freshman seminars*. (Monograph No. 11). Columbia, SC: National Resource Center for The Freshman Year Experience, University of South Carolina.

Barefoot, B. O. "Evaluating the first-year seminar." [<http://www.Brevard.edu/fyc/BarefootRemarks.html>]. Sept. 2000.

Barefoot, B. O. "Summary of Curricular Findings." *Survey/CurrentPractices/SummaryofFindings.html*. July 2001.

Barefoot, B. O., & Fidler, P. P. (1996). *The 1994 survey of freshman seminar programs: Continuing innovations in the collegiate curriculum*. (Monograph No. 20). National Resource Center for The Freshman Year Experience & Students in Transition, University of South Carolina.

Barefoot, B. O., & Gardner, J. N. (1998). Introduction. In B. O. Barefoot, C. L. Warnock, M. P. Dickinson, S. E. Richardson, & M. R. Roberts (Eds.), *Exploring the evidence, Volume II: Reporting outcomes of first-year seminars* (Monograph No. 29) (pp. xiii-xiv). Columbia, SC: National Resource Center for The First-Year Experience and Students in Transition, University of South Carolina.

Barefoot, B. O., Warnock, C. L., Dickinson, M. P., Richardson, S. E., & Roberts, M. R. (Eds.) (1998). *Exploring the evidence, Volume II: Reporting outcomes of first-year seminars*. (Monograph No. 29). Columbia, SC: National Resource Center for The First-Year

Experience and Students in Transition, University of South Carolina.

Bargh, J., & Schul, Y. (1980). On the cognitive benefits of teaching. *Journal of Educational Psychology*, 72(5), 593-604.

Barr, M. J., & Upcraft, M. L. (Eds.)(1990). *New futures for student affairs: Building a vision for professional leadership and practice*. San Francisco: Jossey-Bass.

Benware, C. A., & Deci, E. L. (1984). Quality of learning with an active versus passive motivational set. *American Educational Research Journal*, 21(4), 755-765.

Bonsangue, M. V. (1993). The effects of calculus workshop groups on minority achievement in mathematics, science, and engineering. *Cooperative Learning and College Teaching*, 3(3), pp. 8-9.

Boyer, E. L. (1987). *College: The undergraduate experience in America*. New York: Harper & Row.

Boylan, H., Bliss, L., & Bonham, B. (1992). The impact of developmental programs. *Research in Developmental Education*, 10(2), 1-4.

Braxton, J. M., & Mundy, M. E. (2001-2002). Powerful institutional levers to reduce college student departure. *Journal of College Student Retention*, 3(1), 91-118.

Braxton, J. M., Sullivan, A. S., & Johnson, R. M. (1997). Appraising Tinto's theory of college student departure. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research*, volume 12 (pp. 107-164). New York: Agathon.

Budig, J., Koenig, A., & Weaver, T. (1991). Postcards for student success. *Innovation Abstracts*, 12(28), 4.

Carlson, Linda [carlson@adelphi.edu]. "Early Alert Programs," Message to fye-list [fye-list@vm.sc.edu]. Oct. 2, 2000.

Catone, J. E. (1996). "Triad" program gives entering students three kinds of support. *The First-Year Experience Newsletter*, 9(2), p. 7.

Chickering, A. W. (1969). *Education and identity*. San Francisco: Jossey-Bass.

Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin*, 39(7), pp. 3-7.

Chickering, A. W., & Schlossberg, N. K. (1998). Moving on: Seniors as people in transition. In J. N. Gardner, G. Van der Veer & Associates, *The senior year experience* (pp. 37-50). San Francisco: Jossey-Bass.

Churchill, W. D., & Iwai, S. I. (1981). College attrition, student use of campus facilities, and a consideration of self-reported personal problems. *Research in Higher Education* 14(4), 353-365.

Consortium for Student Retention Data Exchange (1999). Executive summary 1998-1999 CSRDE report: The retention and graduation rates in 269 colleges and universities. Norman, OK: Center for Institutional Data Exchange and Analysis, University of Oklahoma

Cooper, J. L. (1997). New evidence of the power of cooperative learning. *Cooperative Learning and College Teaching*, 7(3), pp. 1-2.

Cross, J. P. (1981). *Adults as learners*. San Francisco: Jossey-Bass.

Cross, K. P. (1985). Education for the 21st century. *NASPA Journal*, 23(1), 7-18.

Cuseo, J. B. (2001, October). The transfer transition. Pre-conference workshop presented at the Eighth National Conference on Students in Transition, Oak Brook, Illinois

Cuseo, J. B. (2002). *Igniting student involvement, peer interaction, and teamwork: A taxonomy of specific cooperative learning structures and collaborative learning strategies*. Stillwater, OK: New Forums Press.

"Early Intervention Programs Help Keep New Students on Course" (1992). *Recruitment and Retention in Higher Education*, 6(3), p. 9.

Education Commission of the States (1995). *Making quality count in undergraduate education*. Denver, CO: ECS Distribution Center.

Ender, S. C., Winston, R. B., Jr., & Miller, T. K. (1984). Academic advising reconsidered. In R. B. Winston, Jr., T. K. Miller, S. C. Ender, T. J. Grites, & Associates, *Developmental academic advising* (pp. 3-34). San Francisco: Jossey-Bass.

Engelkemeyer, S. W., & Brown, S. C. (1998). Powerful partnerships: A shared responsibility for learning. *AAHE Bulletin*, 51(2), pp. 10-12.

Feldman, K. A., & Newcomb, T. M. (Eds.)(1969). *The impact of college on students*. San Francisco: Jossey-Bass.

Fidler, P. P., & Shanley, M. G. (1993, February). Evaluation results of University 101. Presentation made at the annual conference of The Freshman Year Experience, Columbia, South Carolina.

Friedlander, J. (1980). Are college support programs and services reaching high-risk students? *Journal of College Student Personnel*, 21(1), 23-28.

Gabelnick, F., MacGregor, J., Matthews, R. S., & Smith, B. L. (1990). Learning communities: Creating connections among students, faculty, and disciplines. *New Directions for Teaching and Learning*, No. 41. San Francisco: Jossey-Bass.

Gamson, Z. (1993). Deep learning, surface learning. *AAHE Bulletin*, 45(8), pp. 11-13.

Garcia, G. (1991). Summer bridge: Improving retention rates for underprepared students. *Journal of The Freshman Year Experience*, 3(2), 91-105.

Gardner, J. N. (1980). *University 101: A concept for improving teaching and learning*. Columbia, South Carolina: University of South Carolina. (ERIC Reproduction Service No. 192 706)

Gardner, J. N. (1986). The freshman year experience. *College and University*, 61(4), 261-274.

Getzlaf, S. B., Sedlacek, G. M., Kearney, K. A., & Blackwell, J. M. (1984). Two types of voluntary undergraduate attrition: An application of Tinto's model. *Research in Higher Education*, 20(3), 257-268.

Goldman, B. A., & Gillis, J. H. (1989). Graduation and attrition rates: A closer look at influences. *Journal of The Freshman Year Experience*, 1(1), 56-77.

Gordon, V. N. (1984). *The undecided college student: An academic and career advising challenge*. Springfield, Illinois: Thomas.

Green, M. G. (Ed.)(1989). *Minorities on campus: A handbook for enhancing diversity*. Washington, D.C.: American Council on Education.

Green, S. (1994). Graduation rates double for underprepared students at Indiana University at Kokomo. *The Freshman Year Experience Newsletter*, 7(2), p. 4.

Gross, A. E., & McMullen, P. A. (1983). Models of help-seeking process. In F. D. Fisher, A. Naples, & B. M. DePaul (Eds.), *New Directions in Helping and Help-Seeking, Volume 2.* New York: Academic Press.

Guon, D. G. (1988, April). Minority access and retention: An evaluation of a multi-university peer counseling program. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago.

Hallberg, E., & Davis, G. "The college success factors index." [http://www.Brevard.edu/fyc/FYA_contributions/Resources.htm]. Nov., 2001.

Johnson, D. W., Marujuama, G., Johnson, R., Nelson, D., & Spon, L. (1981). Effects of cooperative, competitive, and individualistic goal structures on achievement: A meta-analysis. *Psychological Bulletin*, 89(1), 47-62.

Johnson, K., Sulzer-Azaroff, B., & Mass, C. (1977). The effects of internal proctoring upon examination performance in a personalized instruction course. *Journal of Personalized Instruction*, 1, 113-117.

Kagan, S. (1992). *Cooperative learning*. San Juan Capistrano, CA: Resources for Teachers, Inc.

Kerstiens, G. "Study behavior inventory." [<http://www.sbi4windows.com>]. Nov. 2000.

Knapp, J. R., & Karabenick, S. A. (1988). Incidence of formal and informal academic help-seeking in higher education. *Journal of College Student Development*, 29(3), 223-227.

Kochenour, E. O., Jolley, D., Kaup, J. G., Patrick, D. L., Roach, K. D., & Wenzler, L. A. (1997). Supplemental instruction: An effective component of student affairs programming. *Journal of College Student Development* (November/December), 577-585.

Kramer, M. (1993). Lengthening of time to degree. *Change*, 25(3), pp. 5-7.

Kuh, G. D., & Banta, T. W. (2000). Faculty-student affairs collaboration on assessment: Lessons from the field. *About Campus* 4(6), pp. 4-11.

Kuh, G. D., Schuh, J., Whitt, E., & Associates (1991). *Involving colleges: Encouraging student learning and personal development through out-of-class experiences*. San Francisco: Jossey-Bass.

Kulik, C., Kulik, J., & Shwalb, B. (1983). College programs for high-risk and disadvantaged students: A meta-analysis of findings. *Review of Educational Research*, 53, 397-414.

Kurfiss, J. G. (1988). *Critical thinking: Theory, research, practice, and possibilities*. ASHE-ERIC, Report No. 2. Washington, D.C.: Association for the Study of Higher Education.

"Learning Slope." (1991). *Policy Perspectives*, 4(1), pp. 1A-8A. Pew Higher Education Research Program

Lent, R. W., Brown, S. D., & Larkin, K. C. (1987). Comparison of three theoretically derived variables in predicting career and academic behavior: Self-efficacy, interest congruence, and consequence thinking. *Journal of Counseling Psychology*, 34, 293-298.

Levin, M., & Levin, J. (1991). A critical examination of academic retention programs for at-risk minority college students. *Journal of College Student Development*, 32, 323-334.

Levine, (1998). *When hope and fear collide: A portrait of today's college student*. San Francisco: Jossey-Bass.

Levine, J. H., & Tompkins, D. P. (1996). Making learning communities work: Seven lessons from Temple University. *AAHE Bulletin*, 48(1), pp. 3-6.

Levitz, R. (1991). Adding peer tutors to your retention program. *Recruitment and Retention in Higher Education*, 5(10), pp. 5-7.

Levitz, R. (1993). Retention is dollar-wise. *Recruitment and Retention Newsletter*, 7(1), p. 4.

Levitz, R. (1990). Supplemental instruction takes off. *Recruitment and Retention Newsletter*, (November), p. 7.

Levitz, R., & Noel, L. (1989). Connecting students to institutions: Keys to retention and success. In M. L. Upcraft, J. N. Gardner, & Associates, *The freshman year experience* (pp. 65-81). San Francisco: Jossey-Bass.

Light, R. J. (2001). *Making the most of college: Students speak their minds*. Cambridge, Mass.: Harvard University Press.

MacGregor, J. (1991). What differences do learning communities make? *Washington Center News*, 6(1), pp. 4-9.

MacGregor, J. (2000). Restructuring large classes to create communities of learners. In J. MacGregor, J. L. Cooper, K. A. Smith, & P. Robinson (Eds.), *Strategies for energizing large classes: From small groups to learning communities* (pp. 47-62).

New Directions for Teaching and Learning, No. 81. San Francisco: Jossey-Bass.

Marchese, T. (1992). Assessing learning at Harvard. *AAHE Bulletin*, 44(6), pp. 3-7.

Martin, D. C., & Arendale, D. R. (Eds.) (1994). Supplemental instruction: Increasing achievement and retention. *New Directions for Teaching and Learning* No. 60. San Francisco: Jossey-Bass.

Martin, D. C., & Blanc, R. A. (1994). VSI: A pathway to mastery and persistence. In D. C. Martin & D. R. Arendale (Eds.), *Supplemental instruction: Increasing achievement and retention* (pp. 83-92). *New Directions for Teaching and Learning*, No. 60. San Francisco: Jossey-Bass.

McGrath, D., & Townsend, B. T. (1997). Strengthening preparedness of at-risk students. In J. G. Gaff, J. L. Ratcliff, & Associates, *Handbook of the Undergraduate Curriculum: A comprehensive guide to purposes, structures, practices, and change* (pp. 213-229). San Francisco: Jossey-Bass.

McKeachie, W. J., Pintrich, P., Lin, Y., & Smith, D. (1986). *Teaching and learning in the college classroom: A review of the research literature*. Ann Arbor, MI: National Center for Research to Improve Postsecondary Teaching and Learning, University of Michigan.

Means, B., Chelemer, C., & Knapp, M. (Eds.) (1991). *Teaching advanced skills to at-risk students*. San Francisco: Jossey-Bass.

Miller, T. K., & Prince, J. S. (1976). *The future of student affairs*. San Francisco: Jossey-Bass.

Millis, B. J., & Cottell, P. G., Jr. (1998). *Cooperative learning for higher education faculty*. Phoenix, AZ: American Council on Education and The Oryx Press.

National Academy of Sciences-National Research Council (1977). *Retention of minority students in engineering*. Washington, D.C.: National Academy of Sciences. (ERIC Reproduction Service No. 152467)

National Institute of Education (1984). *Involvement in learning: Realizing the potential of American higher education* (Report of the NIE Study Group on the Condition of Excellence in American Higher Education). Washington, D.C.: U.S. Government Printing Office.

National Resource Center for The First Year Experience and Students in Transition (1998). *1997 national survey of first-year seminar programming*. Columbia, SC: University of South Carolina, Author.

Noel, L. (1992). Paired courses help integrate learning skills. *Recruitment and Retention in Higher Education*, 6(11), pp. 4-5.

Noel, L. (1994). Defending against budget cuts. *Recruitment and Retention in Higher Education*, (January), p. 6.

Pantages, T. J., & Creedan, C. F. (1978). Studies of college attrition: 1950-1975. *Review of Educational Research*, 48, 49-101.

Pascarella, E. T., & Chapman, D. W. (1983). Validation of a theoretical model of college withdrawal: Interaction effects in a multi-institutional sample. *Research in Higher Education*, 19, 25-48.

Patton, M. Q. (1978). *Utilization-focused evaluation*. Beverly Hills, CA: Sage.

Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students: Findings and insights from twenty years of research*. San Francisco: Jossey-Bass.

Peters, C. B. (1990). Rescue the perishing: A new approach to supplemental instruction. In M D. Svinicki (Ed.), *The changing face of college teaching* (pp. 59-70). *New Directions for Teaching and Learning*, No. 42. San Francisco: Jossey-Bass.

Pintrich, P. R., McKeachie, W. J., & Smith, D. (1989). *The motivated strategies for learning questionnaire*. Ann Arbor, MI: National Center for Research to Improve Postsecondary Teaching and Learning, University of Michigan.

Postsecondary Education Opportunity (2002). Institutional graduation rates by control, academic selectivity and degree level, 1983-2002. The Environmental Scanning Research Letter of Opportunity for Postsecondary Education, (March), pp 1-16.

Rendon, L. I. (1994). Validating culturally diverse students: Toward a new model of learning and student development. *Innovative Higher Education*, 19(1), 23-32.

Richardson, R. C., Jr., & Bender, L. W. (1987). *Fostering minority access and achievement in higher education*. San Francisco: Jossey-Bass.

Roueche, J. E., Baker, G. A., & Roueche, S. D. (1984). *College responses to low-achieving students: A national study*. New York: HBJ Media Systems.

Roueche, J., & Roueche, S. (1993). *Between a rock and a hard place: The at-risk student in the open-door college*. Washington, D.C.: American Association of Community Colleges.

Schein, H. K., & Bowers, P. M. (1992). Using living/learning centers to provide integrated campus services for freshmen. *Journal of The Freshman Year Experience*, 4(1), 59-77.

Schilling, K. (2001, August). Plenary address. Presented at The Summer Institute on First-Year Assessment, Asheville, North Carolina.

Schlossberg, N. K., Lynch, A. Q., & Chickering, A. W. (1989). *Improving higher education environments for adults: Responsive programs and services from entry to departure*. San Francisco: Jossey-Bass.

Seymour, D. (1993). Quality on campus: Three institutions, three beginnings. *Change*, 25(3), pp. 14-27.

Slavin, R. E. (1990). *Cooperative learning: Theory, research, and practice*. Englewood Cliffs, NJ: Prentice Hall.

Smith, J. B., Walter, T. L., & Hoey G. (1992). Support programs and student self-efficacy: Do first-year students know when they

need help? *Journal of The Freshman Year Experience*, 4(2), 41-67.

Solberg, V. S., O'Brien P., Villareal R., & Davis, B. (1993). Self-efficacy and Hispanic college students: Validation of the college self-efficacy instrument. *Hispanic Journal of Behavioral Sciences*, 15(1), 80-95.

Squire, L. (1986). Mechanism of memory. *Science*, 232, 1612-1619.

Stodt, M. M. & Klepper, W. M. (Eds.) (1987). *Increasing retention: Academic and student affairs administrators in partnership*. New Directions for Higher Education. San Francisco: Jossey-Bass.

Striatal, M. L. (1988). *College student inventory*. Coralville, Iowa: Noel/Levitz Centers.

Terenzini P. T., Rendon, L., Upcraft, L., Millar, S., Allison, K., Gregg, P., & Jalomo, R. (1994). The transition to college: Diverse students, diverse stories. *Research in Higher Education*, 35(1), 57-73.

Thompson, Karla [kthompso@cavern.nmsu.edu]. "Early Warning Systems," Message to fye-list [fye-list@vm.sc.edu]. Apr. 4, 2001.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.

Tinto, V. (1997). Classrooms as communities: Exploring the educational character of student persistence. *The Journal of Higher Education*, 68, 599-623.

Tinto, V. (2000). Linking learning and leaving: Exploring the role of the college classroom in student departure. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 81-94). Nashville: Vanderbilt University Press.

Titley, R., & Titley, B. (1980). Initial choice of college major: Are only the "undecided" undecided? *Journal of College Student Personnel*, 21(4), 293-298.

Tokumo, K. A., & Campbell, F. L. (1992). The freshman interest group program at the University of Washington. *Journal of The Freshman Year Experience*, 4(1), 7-22.

Treisman, P. U. (1986). A study of the mathematics performance of Black students at the University of California, Berkeley (Doctoral dissertation, University of California, Berkeley, 1986). *Dissertation Abstracts International*, 47, 1641-A.

Treisman, U. (1992). Studying students studying calculus: A look at the lives of minority mathematics students in college. *College Mathematics Journal*, 23(5), 362-372.

Upcraft, M. L., & Farnsworth, W. M. (1984). Orientation programs and activities. In M. L. Upcraft (Ed.), *Orienting students to college* (pp. 27-38). *New Directions for Student Services*, No. 25. San Francisco: Jossey-Bass.

U.S. Bureau of the Census (1994). *Statistical abstract of the United States: 1994* (114th ed.). Washington, D.C.: U.S. Government Printing Office.

Vygotsky, L. S. (1978). Internalization of higher cognitive functions. In M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds. & Trans.), *Mind in society: The development of higher psychological processes* (pp. 52-57). Cambridge: Harvard University Press.

Walter, T. L., & Smith, J. (April, 1990). Self-assessment and academic support: Do students know they need help? Paper presented at the annual Freshman Year Experience Conference, Austin, Texas.

Weinstein, C. E., & Underwood, V. L. (1985). Learning strategies: The how of learning. In J. W. Segal, S. F. Chapman, & R. Glaser (Eds.), *Thinking and learning skills* (pp. 241-258). Hillsdale, NJ: Lawrence Erlbaum.

Weinstein, C. E., Schulte, A. C., & Palmer, D. R. (1987). *Learning and study strategies inventory (LASSI)*. Clearwater, FL: H & H Publishing.

"What Do I Want to Be." LAS News, Winter, 1997, p 12. (Newsletter of the College of Liberal Arts and Sciences, University of Illinois at Urbana-Champaign.)

"What We Know About First-Year Students." In J. N. Gardner, & A. J. Jewler, 1996, Your college experience (Instructor's manual), p. G-90. Belmont, CA: Wadsworth.

Whitman, N. A. (1988). Peer teaching: To teach is to learn twice. ASHE-ERIC Higher Education Report No. 4. Washington, D.C.: Association for the Study of Higher Education.

Widmar, G. E. (1994). Supplemental instruction: From small beginnings to a national program. In D. C. Martin & D. R. Arendale (Eds.), Supplemental instruction: Increasing achievement and retention (pp. 3-10). New Directions for Teaching and Learning No. 60. San Francisco: Jossey-Bass.

Wilbur, F. P., & Lambert, L. M. (Eds.). Linking America's schools and colleges (2nd ed.). Washington, D.C.: American Association for Higher Education.

Wilkie, C., & Kuckuck, S. (1989). A longitudinal study of the effects of a freshman seminar. *Journal of The Freshman Year Experience*, 1(1), 7-16.

Wilkie, C., & Redondo, B. (1996). Predictors of academic success and failure of first-year college students. *Journal of The Freshman Year Experience*, 8(2), 17-32.

Willingham, W. W. (1985). Success in college: The role of personal qualities and academic ability. New York: College Entrance Examination Board.

Winter, D., McClelland, D., & Stewart, A. (1981). A new case for the liberal arts: Assessing institutional goals and student development. San Francisco: Jossey-Bass.

Young, R. W. (1982). Seventeen year graduation study of 1963 freshmen at the University of New Mexico. *College and University*, 57(3), 279-288.