

The *Empirical* Case for the First-Year Seminar: Evidence of Course Impact on Student Retention, Persistence to Graduation, and Academic Achievement

Joe Cuseo
jcuseo@earthlink.net

Introduction

Not all first-year seminars are created equally. Some seminars focus only on the development of basic academic skills (e.g., study skills courses), critical thinking skills (e.g., academic seminars) or major-specific information (e.g., discipline-based or pre-professional seminars). This manuscript focuses on the impact of first-year seminars that go beyond strictly academic topics and take a holistic (whole-person), student-centered approach to promoting college success. This type of first-year seminar is often referred to as an “extended orientation,” “college transition,” or “FYE” (first-year experience) course. It is the most common form of first-year seminar higher education, accounting for over 60% of all reported seminars offered nationally (Tobolowsky & Associates, 2008). The holistic nature of the course is consistent with what Upcraft and Gardner (1989) called for in their seminal text, *The Freshman Year Experience*: “Freshmen succeed when they make progress toward fulfilling [the following] educational and personal goals: (1) developing academic and intellectual competence; (2) establishing and maintaining interpersonal relationships; (3) developing an identity; (4) deciding on a career and life-style; (5) maintaining personal health and wellness; and (6) developing an integrated philosophy of life” (p. 2). This holistic type of first-year seminar is one in place at the University of South Carolina (University 101), which has served as a prototype and national model for more than a quarter of a century: “University 101 subscribes to the belief that development is not a one-dimensional affair but must reach far beyond the intellect and into emotional, spiritual, occupational, physical and social areas” (Jewler, 1989, p. 201).

National research suggests that holistic first-year seminars have the most significant impact on student outcomes. Swing (2002) conducted a multi-institutional study of different types of first-year seminars, based on self-reported student outcomes from over 31,000 students attending 62 institutions. He found that *college transition* seminars which focused on academic and non-academic (holistic) topics, “performed best overall across the ten learning outcomes investigated” (p. 1). College transition seminars with a holistic focus were especially more effective than *discipline-based* seminars housed in academic departments that focused exclusively on introducing first-year students to an academic discipline or major field of study. Consistent with Swing’s findings is the observation made by Upcraft, Gardner, & Barefoot (2005) based on their national experience with first-year seminars: “The most effective first-year seminars are those that are designed to facilitate first-year student success in both academic and non-academic facets of college life.”

Collectively, these findings and observations point strongly to the conclusion that first-year seminars should move beyond just cognitive and academic-skill development to address development of the student as a “whole person.” Additional cross-institutional and campus-specific research supporting this recommendation is summarized in the following sections.

National (Multi-Institutional) Research

Multi-institutional evidence for the positive impact of first-year seminars on student behavior and campus perceptions is provided by the National Survey of Student Engagement (2005), which included students' survey responses from more than 80,000 first-year students. Results of this Web-based survey revealed that relative to students who did not participate in the course, first-year seminar participants reported that they: (a) were more challenged academically, (b) were more likely to engage in active and collaborative learning activities, (c) interacted more frequently with faculty, (d) perceived the campus environment to be more supportive, (e) made greater gains in learning during their first year of college, and (f) were more satisfied with their first-year experience. Compared to students who only participated in orientation but not a first-year seminar, course participants reported greater engagement, higher levels of satisfaction, and greater developmental gains in the following areas: (a) academic advising and planning, (b) career advising and planning, (c) financial aid advising, (d) academic assistance, (e) academic challenge, (f) active and collaborative learning, and (g) student-faculty interaction (National Survey of Student Engagement, 2005).

Student retention (persistence) and *academic performance* (achievement) have been the two most frequently assessed outcomes of the first-year seminar. Positive impact of the seminar on these outcomes has been reported through use of multiple *research methods* (quantitative and qualitative, and experimental and correlational), for all types of *students* (at-risk/well-prepared, minority/majority, residential/commuter, male/female), at all institutional *types* (2-year/4-year, public/private), *sizes* (small/mid-sized/large) and *locations* (urban/suburban/rural) (Barefoot, 1993; Barefoot et al., 1998; Boudreau & Kromrey, 1994; Fidler & Godwin, 1994; Glass & Garrett, 1995; Grunder & Hellmich, 1996; Shanley & Witten, 1990; Sidle & McReynolds, 1999; Starke, Harth, & Sirianni, 2001; Swanson, Vaughan, & Wilkinson, 2017; Tobolowsky, 2005). 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).

In a study conducted by the Institute of for Higher Education Leadership & Policy (Sacramento, CA), the academic progress of a sizable cohort of California community college students were tracked across time. Student participation in a college success (first-year experience) course proved to be one of the factors associated with students achievement of important educational milestones—such as: (a) completion of developmental education, (b) passing college-level English and Math courses within two years, (c) avoiding excessive course withdrawals and (d) accumulating at least 20 credits in the first year of college enrollment (Moore, Shulock, & Offenstein, 2009).

The Division of Community Colleges within the Florida Department of Education examined the impact of student success courses (a.k.a. first-year experience courses) across the state and found that students who completed such courses (compared to students who did not take or complete such courses) had significantly higher rates of: (a) continuous college enrollment, (b) program completion, and (c) transfer to 4-year universities within the state. Furthermore, the positive impact of student participation in these courses was not restricted to students who tested into developmental education; similar effects were found for students who entered the community college system "college ready" (Florida Department of Education, 2006). Subsequent analyses conducted by the Community College Research Center at Columbia University (NY) revealed similar findings, even after controlling for a variety of student demographic characteristics (Zeidenberg, Jenkins, & Calcagno, 2007).

In a meticulous synthesis of more than 2600 postsecondary studies on the impact of college programs and experience on student development, Pascarella and Terenzini (1991) reached the following conclusion: “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). In a more recent synthesis, which included reviews of research studies published after release of their original volume in 1991, Pascarella and Terenzini (2005) reached a similar conclusion:

With rare exceptions they [first-year seminars] produce uniformly consistent evidence of positive and statistically significant advantages to students who take the courses. Some of this evidence comes from studies in which participant and nonparticipant groups are “matched” on various combinations of precollege characteristics. These studies consistently find that FYS [first-year seminar] participation promotes persistence into the second year and over longer periods of time. More recent studies employ various multivariate statistical procedures to control for academic ability and achievement and other precollege characteristics. Whatever the procedure, the research points to the same conclusion, indicating positive and statistically significant net effect of FYS participation versus nonparticipation on persistence into the second year or attainment of a bachelor’s degree. In short, the weight of evidence indicates that FYS participation has statistically significant and substantial, positive effects on a student’s successful transition to college and the likelihood of persistence into the second year as well as on academic performance while in college and on a considerable array of other college experiences known to be related directly and indirectly to bachelor’s degree completion (pp.400-401 & 402-403).

Consistent with Pascarella and Terenzini’s comprehensive reviews of the literature is the conclusion drawn by Hunter and Linder (2005), based on their review of research on first-year seminars published in the *Journal The First-year Experience and Students in Transition* and in three volumes of studies published as monographs by the National Resource Center at the University of South Carolina (Barefoot, 1993; Barefoot et al., 1998; Tobolowsky, 2005):

The overwhelming majority of first-year seminar research has shown that these courses positively affect retention, grade point average, number of credit hours attempted and completed, graduation rates, student involvement in campus activities, and student attitudes and perceptions of higher education, as well as faculty development and methods of instruction (p. 288).

Under the auspices of the Association of American Colleges and Universities, Brownell and Swaner (2010) conducted a cross-institutional review of the literature and identified first-year seminars as one of their top-five “high impact” practices.

Local (Single-Institution) Studies

In addition to national (cross-institutional) research, there have been numerous local (single-

institution) studies conducted on the impact of first-year seminars. The results of these studies on two key student outcomes—student retention and academic achievement—are summarized below.

◆ *STUDENT RETENTION OUTCOMES*

The best documented outcome of the first-year seminar is its positive effect on student retention; it is a finding that has been replicated across a wide variety of institutional settings and student populations. Based on her 10-plus years of experience reviewing research studies on the first-year seminar as Co-Director for Research & Publications at the University of South Carolina's National Resource Center for The First-Year Experience, Barefoot (2000) reported that there is a growing body of research indicating that first-year seminars are positively correlated with improved student retention. Barefoot's conclusion is reinforced by a national survey of more than 1,000 institutions conducted under the auspices of ACT, which asked chief academic officers to identify three campus retention practices that had the greatest impact on student retention. The reported practice that ranked first in terms of having the most impact on student retention was a "freshman seminar/university 101 course for credit" (Habley & McClanahan, 2004). More recently, Permzadian and Credé (2016) conducted a meta-analytic review of close to 200 published studies of first-year seminars and reported that if institutions implemented a first-year seminar with an the average effectiveness of the studies reviewed, it would see a reduction in attrition rate of approximately 27.4% and an estimate gain in net review generated from first- to second-year retention of \$417,750 at public 4-year campuses and \$694,650 at private 4-year campuses.

Described below is a summarized series of single-institution studies that demonstrate the first-year seminar's positive impact on student persistence through and beyond the first year of college.

1. Persistence to Completion of the *First Semester/Quarter of College*

Research conducted at Sacramento City College revealed that students who participated in the first-year seminar persisted to completion of the first term at a rate 50% higher than non-participants (Stupka, 1993). California State University-San Marcos also reported statistically significant differences ($p < .01$) between college-continuation rates of students who enrolled in a first-term seminar versus those who did not (Sparks, 2005).

2. Persistence to the Second Term of College

At Miami Dade College, developmental students who concurrently enrolled in a first-year experience course in the fall had significantly higher re-enrollment rates for the spring term than students who did not participate in the course (Griffin & Romm, 2008).

At the University of Northern Colorado, first-generation students who participated in first-year seminar had significantly higher persistence rates to the second term, even when controlling for demographic characteristics and prior levels of academic performance (Vaughan, Parra & LaLonde, 2014).

3. Persistence to Completion of the *First Year of College*

At Widener University (PA), first-year seminar participants returned for their sophomore year

at a rate that was approximately 18% higher (87.3% vs. 69.6%) than their expected return rate—as predicted by their entering SAT scores (Bushko, 1995). Research conducted at Miami-Dade Community College found that participants in the first-year seminar displayed a 67% first-year retention rate, compared to 46% for non-participants (Belcher, 1993). The University of South Carolina conducted a series of studies on successive cohorts of first-year students enrolled in University 101 (first-year seminar). Results of these studies revealed that for 16 consecutive years, first-year students who participated in the seminar were more likely to persist to the sophomore year than non-participants. In 11 of the 16 years, the differences reached statistically significant levels—despite the fact that course participants had higher course loads and lower predicted academic success—as measured by standardized-admissions test scores (Fidler, 1991).

At Ramapo College (New Jersey), the average first-to-second-year retention rate for five consecutive years *after* the first-year seminar became a requirement was significantly higher than the average retention rate for first-year students who entered the college during the three-year period that preceded course adoption (Starke, Harth, & Sirianni, 2001).

Controlling for student background characteristics and participation in academic support programs, students at Indiana University-Purdue University Indianapolis who participated in a first-year seminar displayed first-year retention rates that were significantly higher ($p < .01$) than non-participants (Jackson, 2005).

At the University of Wisconsin-Whitewater, students who participated in a first-year seminar returned for their sophomore year at a higher rate than did students with better pre-college academic preparation. Moreover, course participation was associated with higher persistence rates for students at all levels of academic ability—as measured by ACT score, college preparatory courses completed, and high school rank (Miller & Janz, 2007).

At Central Connecticut State University, students who participated in a first-year seminar were 40% less likely to leave the university in their first year (Miller & Lesik, 2014).

4. Persistence to Completion of the *Sophomore Year*

At the University of Maryland, students who were randomly assigned to participate in the first-year seminar displayed significantly higher retention rates throughout their first four semesters in college than students randomly assigned to a control group that did not take the course (Strumpf & Hunt, 1993).

5. Cumulative (Total) Number of *College Units/Credits Completed*

Research conducted at Sacramento City College revealed that first-year seminar participants completed 326% more units than did non-participants (Stupka, 1993); at Oakton Community College (IL), course participants went on to earn 50% more academic units in college than did non-participants (Deutch, 1998). Using an original dataset of 23,267 student-unit records from the Virginia Community College System (VCCS), Cho and Karp (2013) found that students who enrolled in a student success course in the first semester were more likely to earn any college-level credits within the first year and were more likely to persist to the second year. The study also found that students who were referred to developmental education were more likely to earn any college-level credits within the first year if they enrolled in a student success course in their first term.

6. Persistence to *Junior and Senior Year*

At Northern Michigan University, students who participated in the first-year seminar persisted into the third and fourth year of college at a higher rate than did non-participants (Verduin, 2005). At Northern Colorado University, male students and first-generation students who participated in a first-year seminar persisted through their third year of college at significantly higher rates than non-participants—as large as almost 25% for male participants and 34% for male minority students—even when controlling for their level of academic preparedness at college entry (Swanson, Vaughan, & Wilkinson, 2017).

7. Persistence to *Degree/Program Completion*

At the State University of New York in Buffalo, first-year students who did and did not participate in a first-year seminar were matched according to gender, race, SAT score, high school GPA and intended program of study. Students who completed the first-year seminar graduated within four, five, and six years at higher rates than did their matched counterparts who did not participate in the course (Lang, 2007). North Dakota State University conducted a longitudinal study of 1700 students from four classes of new-student cohorts. Students enrolled in the first-year seminar were matched with non-participants on a variety of pre-college characteristics, which included ACT composite scores, high school rank, size of high school graduating class, and intended academic major. Chi-square tests revealed that the 4- and 5-year graduation rates for seminar participants were significantly higher than for a matched control group of non-participants; moreover, significant differences were found at the end of each year of college enrollment—from students' first year to their year of graduation (Schnell & Doetkott, 2002-2003).

The impressive impact of the first-year seminar on graduation rates has been replicated at a wide variety of institutions. In a study conducted at the University of Prince Edward Island (Canada), 49% of course participants persisted to completion of the baccalaureate degree—versus 28% for non-participants (Robb, 1993). At Ohio University, 4-, 5- and 6-year graduation rates were higher for course participants than non-participants (Chapman & Kahrig, 1998). At Dalton College (GA), institutional researchers tracked students over a 5-year period and found that 30.8% of course participants met the 90 quarter-hour requirement for graduation—compared to 19.4% for non-participants (Hoff, Cook, & Price, 1996).

At the University of North Carolina at Charlotte, both commuter and residential students who participated in a first-year seminar graduated (within four years) at higher rates than non-participants (Blowers, 2005). At Northern Kentucky University, first-year seminar students demonstrated significantly higher 6- and 7-year graduation rates than students who did not take the course, independent of their pre-college curriculum and ACT score at college entry (Stieha, 2005). At the State University of New York, Buffalo, students who participated in a first-year seminar evidenced higher 4-, 5- and 6-year graduation rates than a matched group of non-participants (Lang, 2007).

At Cincinnati State Technical & Community College, compared to non-participants, students who participated in and completed a first-year seminar with a grade of C or higher in their first semester went on to graduate at significantly higher rates—as measured by completion of either a degree or credential within three years after their initial matriculation at the college (McLaughlin & Cuseo, 2017).

Zeidenberg, Jenkins, & Calcagno (2007) used individual student record data provided by the Florida Department of Education on a cohort composed of all students who entered a Florida

community college for the first time in fall 1999. These students were tracked for 17 terms were examined in terms of the percentage of these students who completed a credential (a certificate or an associate degree) during that time period. Using logistic regressions to control for student demographic characteristics and basic-skills placement scores, these researchers discovered that taking a first-year experience (college success) course in addition to enrollment in remediation was associated—at a statistically significant level—with higher probability of completion than enrollment in remedial courses alone.

8. Time Taken to Degree/Program Completion

At Keene State College (New Hampshire), 29% of first-year seminar participants graduated within four years—versus 16% of non-participants, and 52% graduated within 5-1/2 years—versus 35% for non-participants (Backes, 1998).

Possible Explanations for the Positive Impact of the First-Year Seminar on Student Retention and College Graduation Rates

Why do students who participate in the first-year seminar demonstrate higher retention and graduation rates? What specific experiences do students have in the course that mediate or eventuate in their higher persistence rates? Conclusive, empirically-based answers to these questions are not yet available; however, the following course experiences are likely to be explanatory candidates.

Increased student use of *support services* and *involvement in campus life*

Research indicates that there is a strong relationship between student retention and student involvement with support services and campus life (Churchill & Iwai, 1981; Davis-Underwood and Lee, 1994; Stoecker, Pascarella, & Wolfle, 1988; Pascarella & Terenzini, 1991, 2005). Historically, one of the most frequently cited goals of first-year seminars has been to increase students' use of campus and involvement in campus life (Barefoot & Fidler, 1996). Campus-specific studies reveal that the first-year seminar increases student involvement with campus services and campus life. For instance, at Champlain College (VT), student utilization of the *learning resource center* and *tutoring services* has remained consistently and substantially higher among first-year seminar participants than non-participants (Goldswieg, 1998). At Bloomsburg University, one of Pennsylvania's 14 state universities, course participants reported higher levels of academic and social integration on a standardized, externally validated instrument; for example, participants reported more interactions with peers and with faculty outside the classroom, greater use of student services, higher rates of participation in student clubs and organizations, and greater commitment to institutional and educational goals (Yale, 2000). At the University of California-Santa Barbara, first-year seminar participants were found to attend *campus events* and participate in *student government* at significantly higher rates than students who do not take the course (Andreatta, 1998). At the University of North Carolina at Charlotte, students who participated in the seminar reported significantly more *informal contact with faculty* outside of class throughout their first-year of college did than non-participants (Maisto & Tammi, 1991). The University of Wyoming reported an increase in *library circulation* and use of

student services following institutional adoption of the first-year seminar as a required course (Reeve, 1993).

Particularly powerful results on sustained student use of campus resources among first-year seminar student were obtained at Indiana University of Pennsylvania, which revealed that students who participated in the course during their initial term on campus went on to use the college's learning resource and tutorial services as *sophomores and juniors* at a rate double that of sophomores and juniors who did not take the course during their first year (Wilkie & Kuckuck, 1989). This finding strongly suggests that the impact of the first-year seminar extends beyond the first term and can exert iterative or cumulative effects on students' engagement with campus resources throughout their undergraduate experience. This may explain, at least in part, why first-year seminar participants have demonstrated higher persistence and graduation rates.

Increased student satisfaction with the college experience

College satisfaction is a "primary predictor" of student persistence (Noel & Levitz, 1995), i.e., there is a well-established empirical relationship between students' level of *satisfaction* with the postsecondary institution they are attending and their rate of *retention* at that institution (Bean, 1980, 1983; Noel, Levitz, & Saluri, 1985). Furthermore, it has been found that college satisfaction is a college-experience variable that is least likely to be influenced or confounded by students' college-entry characteristics—e.g., academic preparedness, educational aspirations, gender, and socioeconomic status (Astin, 1991). The importance of *first-year* student satisfaction, in particular, is underscored by Barefoot and Fidler (1992): "First-year students are often compliant and reluctant to complain about even the most egregious injustices. Institutions must take the initiative in determining the existing quality of life for first-year students both in and out of the classroom" (p. 63).

Since the first-year seminar one major purpose of the first-year seminar is to *integrate and involve* students' with key educational agents, support services, and co-curricular opportunities, these greater sense of campus connection may be expected to lead to heightened levels of college satisfaction. The positive impact of the first-year seminar on students' college satisfaction has been demonstrated at Bethel College (Kansas) where before the first-year seminar was implemented, ACT Student Opinion Surveys of college sophomores indicated that the college rated below the mean of other colleges of the same institutional type. However, once the college initiated the first-year seminar, student opinions of the institution improved to the point where it has scored significantly above the mean in a number of areas (Zerger, 1993). At Northern Kentucky University, the Noel- Levitz Student Satisfaction Inventory was administered to first-year students, and results revealed that students who participated in the first-year seminar reported a higher overall level of satisfaction with the college than did non-participants; statistically significant differences emerged on the following items: "The campus staff is caring and helpful ($p < .01$) and, "Faculty care about me as an individual" ($p < .05$) (Stieha, 2005).

These findings indicating that the first-year seminar has the capacity to increase students' overall college satisfaction and, in so doing, may increase their rate of college persistence.

Increased crystallization of students' major/career plans and future goals

Retention research suggests that student commitment to educational and career goals is perhaps the strongest factor associated with persistence to degree completion (Wyckoff, 1999), and students who lack commitment to educational and occupational goals are more likely to leave

college (e.g., Astin, 1975; Noel, Levitz, & Saluri, 1985). Educational planning, goal setting, and career exploration are common topics for discussion and self-assessment in the first-year seminar. The seminar's potential for 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 was conducted on course participants' self-reported academic and career plans prior to the course, immediately after the course, and after the third semester of college. This study revealed that students who participated in the first-year seminar reported 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, 1993).

Increased student *enthusiasm for and commitment to their home campus*

One of the primary goals of many first-year seminars has been to introduce students to their home institution (Barefoot & Fidler, 1996), including its history, mission, and distinctive features. The first-year seminar class may be the only venue in the students' entire college experience where students receive any exposure to the college's distinctive unique history and mission, and how they can take advantage of it. This practice not only increases student awareness and knowledge of their own campus, but may also serve the more subtle purpose of cementing an *early foundation* for new students' *long-term commitment* to the postsecondary institution they chose to begin higher education. John Gardner (1986) points out the importance of introducing this topic to first-term students by likening it to the consumer principle of "post-purchase marketing" or the "second sale" in which institutions are trying to help students overcome "buyers' remorse" and instead make a commitment to remain at the institution.

Increasing students' early commitment to their campus not only reduces risk for subsequent student attrition, it may also increase student involvement and effort because research suggests that if students perceive their institution as being committed to them by providing facilitative experiences (such as the first-year seminar), then they expend more effort at becoming academically and socially involved in the college experience (Davis & Murrell, 1993). Similarly, national survey research reveals that student engagement on campus correlates positively with student perceptions of campus support (National Survey of Student Engagement (2005)). Thus, the first-year seminar may enhance students' perceived level of support, which in turn, may increase their level of engagement and subsequent persistence.

Improved *academic performance during the first year of college*

Another way in which participation in the first-year seminar may promote students' persistence to degree completion is by improving their academic performance during the first term in college. Research indicates that there is a relationship between higher first-term GPA and student retention (Fox, 1986; Pascarella & Chapman, 1983), higher rate of college completion (DesJardins, et al., 2002; Nora & Cabrera, 1996) as well as shorter time to graduation (Goldman & Gillis, 1989; Young, 1982). The first-year seminar has been found to improve students' academic performance during the first year of college (see the following section). Thus, by impacting the short-term outcome of first-year academic performance, the first-year seminar may in turn contribute to the longer-term outcome of persistence to graduation.

Summary and Conclusion

Viewed collectively, the foregoing results warrant the conclusion that any postsecondary

institution which is seriously committed to making research-based, data-driven decisions about implementing educational interventions that are likely to improve student retention and graduation rates, particularly for first-generation and underprepared students (Stovall, 1999; Strumpf & Hunt, 1993), should strongly consider adopting or expanding a first-year seminar. This conclusion is supported by a recent national study of institutions enrolling high percentages of students at risk for attrition (e.g., academically underprepared, low-income, first-generation students) but have higher-than-predicted graduation rates that are near the national average for *all* students. Every one of these high-performing institutions had adopted programs that were intentionally designed to promote student persistence to degree completion, the most common of which was a first-year experience course modeled after the holistic, student-centered seminar developed at the University of South Carolina (SREB, 2010).

◆ *ACADEMIC ACHIEVEMENT/PERFORMANCE* OUTCOMES

In addition to studies supporting the first-year seminar's positive impact on student retention, numerous campus-specific studies indicate that participation in a first-year seminar also increases students' first-year GPA and decreases their risk of being placed on academic probation (Barefoot, et al., 1998; House, 2005; Jackson, 2005; Porter & Swing, 2006; Soldner, 1998; Williford, Chapman, and Kahrich, 2000-2001; Scrivener, Sommo, & Collado, 2009; Swanson, Vaughan, & Wilkinson, 2017; Wahlstrom, 1993; Weiss, et al., 2011; Vaughan, Parra, & LaLonde, 2014). National surveys suggest that the improved academic performance of students who participate in the seminar is mediated by their greater likelihood of: (a) attending class regularly, (b) speaking up in class and (c) interacting with faculty, compared to students with similar college-entry characteristics who do not participate in the seminar (Keup & Barefoot, 2005). Further evidence that student participation in the first-year seminar promotes productive change in students' academic behavior is suggested by research conducted at the University of North Carolina at Charlotte. Using the National Survey of Student Engagement (NSSE), it was found that significantly higher percentages of first-year seminar participants than non-participants reported that they were "more likely to spend more than 10 hours per week preparing for class" and "more likely to go to class having completed reading or assignments" (Blowers, 2005).

Although evidence for the positive impact of first-year seminars on academic achievement isn't not as widespread and consistent as it is for student retention (Barefoot, 2000), a substantial number of campus-specific studies do suggest that student participation in the seminar is associated with improved academic performance—as measured by the seven different academic-achievement indicators cited below.

1. Cumulative GPA Attained at the *End of the First Term or First Year of College*

Research conducted at Genesee Community College (NY) revealed that first-year seminar participants earned a first-term GPA about one-half point higher than a matched control group of non-participants (Wahlstrom, 1993). At Northern Illinois University, five consecutive first-year cohorts were compared with a matched group of non-participants, and it was found that students who took the course earned significantly higher first-term and first-year GPAs (House, 1998). In a follow-up study at the same university, analysis of covariance procedures were used to control

for differences between the ACT composite scores of students who enrolled and did not enroll in the seminar, first-year seminar enrollees earned significantly higher mean GPAs ($p < .0001$) than non-enrollees (House, 2005).

At Indiana University-Purdue University Indianapolis, conditionally admitted students who participated in the first-year seminar achieved a significantly higher first-term GPA ($p < .01$) than did non-participants, even after controlling for students' background characteristics and participation in other academic-support programs (Jackson, 2005). At the State University of New York, Buffalo, students who completed a first-year seminar achieved a higher first-semester mean GPA than students with a similar level of academic preparedness (high school GPAs and SAT scores) who did not take the course (Lang, 2007).

At Miami Dade College, developmental students who concurrently enrolled in a first-year experience course during their first term had significantly higher pass rates in their remedial courses than students who did not enroll in the course (Griffin & Romm, 2008).

At Northern Colorado University, male students and first-generation students who participated in a first-year seminar earned significantly higher first-term grade point averages (.5 to .7 grade points greater) than non-participants (Swanson, Vaughan, & Wilkinson, 2017).

2. Cumulative GPA Attained *Beyond the First Year*

At Indiana University of Pennsylvania, at-risk students were randomly assigned to either of two groups, one of which took the first-year seminar and the other did not. Over a period of three successive years, students who successfully completed the first-year seminar achieved significantly higher GPAs ($p < .01$) than a matched control group of students who did not take the course (Wilkie & Kuckuck, 1989).

3. GPA Attained vs. GPA Predicted

The aforementioned study at Indiana University of Pennsylvania also found that when first-year students with similar *predicted* GPAs were randomly assigned to take or not take the first-year seminar, the cumulative GPAs *attained* by course participants at the end of their first, second, and third years of college were significantly higher than non-participants (Wilkie & Kuckuck, 1989).

4. Total Number of First-Year Students in *Good Academic Standing* (i.e., Students *Not Placed on Academic Probation or Academically Dismissed*)

Research conducted at the University of Maryland demonstrated that first-year seminar participants completed their first two years of college in good academic standing at a significantly higher rate than students with comparable levels of academic preparation who did not participate in the course (Strumpf & Hunt, 1993).

At Northern Michigan University, significantly higher percentages of first-year seminar participants than non-participants maintained good academic standing (GPA of at least 2.0) over their first five semesters in college (Soldner, 1998). A subsequent study at the same university examined the aggregated first-term GPAs of eight successive cohorts of new students, and it was found that students who participated in the first-year seminar completed their first term in good academic standing at a significantly higher rate than did non-participants (Verduin, 2005).

At Averett College (VA), after the first-year seminar was adopted and required, there was a 20% drop in the percentage of students that ended their first year on academic probation, without

the college making any other changes in its admissions standards or implementing any other retention initiative (Vinson, 1993).

5. Total Number of First-Year Courses *Passed* (versus Dropped or Failed)

Research conducted by a consortium of four community colleges in North Carolina revealed that first-year seminar participants completed an average of nine more units by the end of their first year of college than did non-participants (Garret, 1993).

6. Total Number of First-Year Courses Completed with a *Grade of "C" or Higher*

Research conducted at Sacramento City College revealed that course participants completed four times as many math classes, three times as many writing classes, and twice as many reading classes with a grade of "C" or higher than did non-participants (Stupka, 1993).

7. Percentage of Students Qualifying for the *Dean's List* and *Honors Program*

At the University of Vermont, where the first-year seminar is taught as an introduction to the liberal arts and sciences with special emphasis placed on critical/creative thinking, research skills and oral/written communication skills, the percentage of students qualifying for the Dean's List and gaining acceptance into the school's honor program was significantly higher for course participants than non-participants (Thomson, 1998).

Conclusion

Arguably, it's safe to say that more rigorous research has been conducted on, and more compelling evidence gathered for, the first-year seminar than any other course in the history of American higher education. Discipline-based courses have not been required to justify their existence or their impact on student success; their perennial place in the college curriculum is ensured by the perpetual force of academic tradition and the political power of the academic departments within which they are housed. In his book, *Fixing College Education: A New Curriculum for the Twenty-first Century*, Charles Muscatine, professor emeritus at the University of California-Berkeley, describes his efforts to initiate and sustain an effective and innovative program for undergraduates. His program was eventually terminated by a faculty committee because of concerns about "educational quality." However, Muscatine notes that during the faculty review process, "No faculty group . . . ever attempted to determine the actual 'quality' of the courses in the regular academic program, against which the quality of unconventional courses might be judged" (p. 35).

Similarly, the non-traditional or "foreign" nature of the first-year seminar's student-centered content and student-engaging pedagogy have frequently activated the university's "organizational immune system," resulting in frequent and virulent attacks on the course's academic legitimacy. Consequently, the first-year seminar has become higher education's most repeatedly challenged and most thoroughly assessed course. Since "necessity is the mother of invention," innovative methodologies have been devised to document the course's positive impact and ensure its birth and survival. One would be hard pressed to find any other curricular intervention in higher education that has received more rigorous evaluation or has better qualifications to serve as a "best practice" for promoting student success.

Appendix: Methodological Notes

Reflecting the fact that the majority of first-year seminars are offered as an *elective* course (Barefoot & Fidler, 1996; National Resource Center, 1998), most campus-specific research studies on first-year seminars have used a *quasi-experimental* (a.k.a., *matched-pair*) design, whereby course outcomes for students who elect (volunteer) to take the course are compared with those of a “matched” control group—i.e., first-year students not enrolled in the course whose personal characteristics are similar to (match) those of course participants with respect to student variables that are likely to influence educational outcomes (e.g., high school GPA or

rank, standardized college-admission tests—ACT/SAT, residential status—commuter/on-campus).

Although the matched control group in the quasi-experimental design serves as an effective control for these potentially confounding students' demographic variables, it does not control for the "volunteer effect" or "self-selection bias," i.e., the possibility that students who elect (volunteer) to take the course (selecting themselves into it) may be students who are more motivated to succeed in college than students who opt out of the course. To address the possibility that higher levels of student motivation may account for the positive findings generated by matched-control group studies, the University of South Carolina surveyed its first-year seminar (University 101) participants and matched groups of non-participants at the start of the term to assess whether they differed in their reported level of college motivation (e.g., perceived importance and likelihood of completing their degree; willingness to participate in campus activities and student organizations). Surveys conducted on several cohorts of first-year students revealed no differences between the two groups in their college-motivation survey scores, suggesting that the course's positive impact could not be explained away as merely an artifact of student self-selection (Fidler, 1991).

Experimental Design

At least three published studies on the first-year seminar have employed a true *experimental* design, whereby students were *randomly assigned* to either an experimental group that takes the course or a control group that does not. At Indiana University of Pennsylvania, high-risk students were randomly assigned to either register or not register for the first-year seminar. Students who successfully completed the first-year seminar achieved significantly higher GPAs ($p < .01$) over a 3-year period than a matched control group of students who did not take the course (Wilkie & Kuckuck, 1989).

An experimental design was also used at the University of Maryland at College Park, which yielded results indicated that, relative to a control group, students who took the course displayed significantly higher rates of retention (with good academic standing) throughout their first four semesters on campus (Strumpf & Hunt, 1993). Yet another experimental study was conducted at Bloomsburg University (PA), whose students were randomly assigned to be course participants or non-participants. Using a standardized, externally-validated survey instrument, it was found that course participants reported higher levels of both academic and social integration—for example, more interactions with peers and faculty outside the classroom, greater use of student services and participation in student clubs or organizations, and greater commitment to institutional and educational goals (Yale, 2000).

Some campus-specific studies eliminated the volunteer effect by requiring the first-year seminar for all its students and evaluating course impact by means of a *time-series* research design. In this research design, outcomes obtained after the course is required of all students are compared with student outcomes achieved prior to the course requirement. Thus, previous cohorts of first-year students who did not experience the seminar serve as a "historical" control group to compare outcomes obtained with the "current" experimental group (cohort) of first-year students who are required to take the course. At Ramapo College (New Jersey), a time-series design was used to provide evidence that the average freshman-to-sophomore retention rate for five successive cohorts of freshmen who participated in the seminar was significantly higher than the average retention rate for freshmen who entered the college during the three-year

period prior to the course requirement (Starke, Harth, & Sirianni, 2001). Similarly, at Averett College (VA), a time-series design revealed that after adoption of the first-year seminar, there was a 26% reduction in freshman-to-sophomore attrition rate and a 24% drop in the percentage of freshmen completing their first year on academic probation (Vinson, 1993). It is noteworthy that during the time period when the seminar was adopted and evaluated on both of these campuses, there were no significant changes made in student-admission standards, nor were any other major retention initiatives implemented.

References

- Andreatta, B. (1998). University of California, Santa Barbara. 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. 99-100). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition,

- Astin, A. W. (1975). *Preventing students from dropping out*. San Francisco: Jossey-Bass.
- Astin, A. W. (1991). *Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education*. New York: Macmillan.
- Backes, P. (1998). Keene State College. 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. 31-32). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Barefoot, B. O. (Ed.) (1993). *Exploring the evidence: Reporting outcomes of freshman seminars*. Monograph Series No. 11. National Resource Center for The Freshman Year Experience. Columbia, SC: University of South Carolina.
- Barefoot, B. O. (2000, September 15). *Evaluating the first-year seminar*. Retrieved from the World Wide Web: <http://fya-list@vm.sc.edu>
- Barefoot, B. O., & Fidler, P. P. (1992). *Helping students climb the ladder: 1991 national survey of freshman seminar programs*. (Monograph No. 10). Columbia, SC: National Resource Center for The Freshman Year Experience, University of South Carolina.
- 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: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Barefoot, B. O., Warnock, C. L., Dickinson, M. P., Richardson, S. E., & Roberts, M. R. (1998) (Eds.). *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.
- Bean, J. (1980). Dropouts and turnover: The synthesis and a test of a causal model of student attrition. *Research in Higher Education*, 12, 155-187.
- Bean, J. (1983). The application of a model of turnover in work organizations to the student attrition process. *The Review of Higher Education*, 6, 129-148.
- Belcher, M. J. (1993). Mimi-Dade Community College. . In B. O. Barefoot (Ed.), *Exploring the*

- evidence: Reporting outcomes of freshman seminars* (Monograph No. 11) (p. 21). Columbia, SC: University of South Carolina, National Resource Center for The Freshman Year Experience.
- Belson, K., & Deegan, R. (1993). Irvine Valley College. In B. O. Barefoot (Ed.), *Exploring the evidence: Reporting outcomes of freshman seminars* (Monograph No. 11) (pp. 17-18). Columbia, SC: University of South Carolina, National Resource Center for The Freshman Year Experience.
- Berger, J. B. (2000). Organizational behavior at colleges and student outcomes: A new perspective on college impact. *Review of Higher Education, 23*, 177-198.
- Blowers, A. N. (2005). University of North Carolina at Charlotte. In B. F. Tobolowsky, B. E. Cox, & M.T. Wagner (Eds.), *Exploring the evidence: Reporting research on first-year seminars, Volume III* (Monograph No. 42) (pp. 175-178). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Boudreau, C. & Kromrey, J. (1994). A longitudinal study of the retention and academic performance of participants in a freshman orientation course. *Journal of College Student Development, 35*, 444-449.
- Brownell, J. E., & Swaner, L. E. (2010). *Five high-impact practices: Research on learning outcomes, completion, and quality*. Washington, DC: Association of American Colleges and Universities.
- Bushko, A. A. (1995). Freshman seminar improve student retention at Widener University. *Freshman Year Experience Newsletter, 8*(2), p. 9.
- Chapman, L. C., & Kahrig, T. (1998). Ohio University. 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. 89-90). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Cho, S-W., & Karp, M-M. (2013). Student success courses in the community college: Early enrollment and educational outcomes. *Community College Review, 41*(1), 86-103.
- Churchill, W., & Iwai, S. (1981). College attrition, student use of facilities, and consideration of self-reported personal problems. *Research in Higher Education, 14*, 353-365.
- Davis, T. M. & Murrell, P. H. (1993). *Turning teaching into learning: The role of student responsibility in the collegiate experience*. ASHE-ERIC Higher Education Report No. 8. Washington, D.C.: The George Washington University, School of Education and Human

Development.

- Davis-Underwood, M., & Lee, J. (1994). An evaluation of the University of North Carolina t Charlotte freshman seminar. *Journal of College Student Development*, 35, 491-492.
- DesJardins, S. L., McCall, B. P., Ahlburg, D. A., & Moye, M. J. (2002). Adding a timing light to the "Tool Box." *Research in Higher Education*, 43(1), 83-114.
- Deutch, (1998). Oakton Community College. 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. 11-12). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Fidler, P. F. (1991). Relationship of freshman orientation seminars to sophomore return rates. *Journal of The Freshman Year Experience*, 3(1), 7-38.
- Fidler, P., & Godwin, M. (1994). Retaining African-American students through the freshman seminar. *Journal of Developmental Education*, 17, 34-41.
- Florida Department of Education (2006, November). *Data trends #31: Taking student life skills course increases academic success*. Tallahassee, FL: Florida Department of Education.
- Fox, R. N. (1986). Application of a conceptual model of college withdrawal to disadvantaged students. *American Educational Research Journal*, 23, 415-424.
- Gardner, J. N. (1986). The freshman year experience. *College and University*, 61(4), 261-274.
- Garret, M. S. (1993). Four North Carolina Community Colleges. In B. O. Barefoot (Ed.), *Exploring the evidence: Reporting outcomes of freshman seminars* (Monograph No. 11) (pp. 25-26). Columbia, SC: University of South Carolina, National Resource Center for The Freshman Year Experience.
- Glass, J., & Garrett, M. (1995). Student participation in a college orientation course: retention, and grade point average. *Community College Journal of Research and Practice*, 19, 117-132.
- Goldman, B. A., & Gillis, J. H. (1989). Graduation and attrition rates: A closer look at influences. *Journal of The Freshman Year Experience*, 1(1), 65-77.
- Goldswieg, S. (1998). Champlain College. 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. 27-28). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.

- Griffin, A. M., & Romm, J. (Eds.) (2008). *Exploring the evidence: Reporting research on first-year seminars (Vol. IV)*. Columbia, SC: National Resource Center for the First-Year Experience and Students in Transition. Retrieved from <http://www.sc.edu/fye/resources/fyr/index.html>
- Grunder, P., & Hellmich, D. (1996). Academic persistence and achievement of remedial students in a community college's success program. *Community College Review*, 24, 21-33.
- Habley, W. R., & McClanahan, R. (2004). *What works in student retention? All Survey Colleges*. Retrieved February 12, 2006, from <http://www.act.org/path/postsec/droptables/pdf/AllColleges.pdf>
- Hoff, M., Cook, D., & Price, C. (1996). The first five years of freshman seminars at Dalton College: Student success and retention. *Journal of The Freshman Year Experience & Students in Transition*, 8(2), 33-42.
- House, D. (1998). Northern Illinois University. 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. 87-88). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- House, J. D. (2005). Northern Illinois University. In B. F. Tobolowsky, B. E. Cox, & M. T. Wagner (Eds.), *Exploring the evidence: Reporting research on first-year seminars, Volume III* (Monograph No. 42) (pp. 103-106). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Hunter, M. A., & Linder, C. W. (2005). First-year seminars. In M. L. Upcraft, J. N. Gardner, B. O. Barefoot, & Associates, *Challenging and supporting the first-year student: A handbook for improving the first year of college* (pp. 275-291). San Francisco: Jossey-Bass.
- Jackson, B. (2005). Indiana University-Purdue University Indianapolis. In B. F. Tobolowsky, B. E. Cox, & M. T. Wagner (Eds.), *Exploring the evidence: Reporting research on first-year seminars, Volume III* (Monograph No. 42) (pp. 61-65). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Jewler, A. J. (1989). Elements of an effective seminar: The University 101 program. In M. L. Upcraft, J. N. Gardner, & Associates (Eds.), *The freshman year experience: Helping students survive and succeed in college* (pp. 198-215). San Francisco: Jossey-Bass.
- Keup, J. R. & Barefoot, B. O. (2005). Learning how to be a successful student: Exploring the impact of first-year seminars on student outcomes. *Journal of The First-Year Experience & Students in Transition*, 17(1), 11-47.

- Kramer, M. (1993). Lengthening of time to degree. *Change*, 25(3), pp. 5-7.
- Lang, D. J. (2007). The impact of a first-year experience course on the academic performance, persistence, and graduation rates of first-semester college students at a public research university. *Journal of The First-Year Experience & Students in Transition*, 19(1), 9-25.
- Maisto, A., & Tammi, M. W. (1991). The effect of a content-based freshman seminar on academic and social integration. *Journal of The Freshman Year Experience*, 3(2), 29-48.
- McDonough, P. (1997). *Choosing colleges: How social class and schools structure opportunity*. Albany: State University of New York Press.
- McLaughlin, J., & Cuseo, J. (2017, February). *Delivering an effective first-year experience course at two-year institutions*. Paper presented at the 36th Annual First-Year Experience Conference, Atlanta, GA.
- Miller, J. W., & Janz, J. C. (2007). The retention impact of a first-year seminar on students with varying pre-college academic performance. *Journal of The First-Year Experience & Students in Transition*, 19(1), 47-62.
- Miller, J. W., & Lesik, S. S. (2014). College persistence over time and participation in a first-year seminar. *Journal of College Student Retention: Research Theory and Practice*, 16(3), 373-390.
- Moore, C., Shulock, N., & Offenstein, J. (2009). *Steps to success: Analyzing milestone achievement to improve community college student outcomes*. Sacramento, CA: Institute for Higher Education Leadership & Policy.
- Muscatine, C. (2009). *Fixing college education: A new curriculum for the Twenty-first century*. Charlottesville, VA: University of Virginia Press.
- 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.
- National Survey of Student Engagement (2005). *Exploring different dimensions of student engagement: 2005 annual results*. Retrieved February 14, 2006, from http://nsse.iub.edu/pdf/NSSE2005_annual_report.pdf
- Noel, L. & Levitz, R. (1996). A comprehensive student success program: Part 1. *Recruitment & Retention in Higher Education*, 10(7), pp. 4-7.
- Noel, L., & Levitz, R., & Saluri, D. (Eds.) (1985). *Increasing student retention: New challenges and potential*. San Francisco: Jossey-Bass.

- Nora, A., & Cabrera, A. F. (1996). The role of perceptions of prejudice and discrimination on the adjustment of minority students to college. *Journal of Higher Education, 67*(2), 119-148.
- 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.
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students: Findings and insights from twenty years of research*. San Francisco: Jossey-Bass.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students, Volume 2: A third decade of research*. San Francisco: Jossey-Bass.
- Patton, M. Q. (1978). *Utilization-focused evaluation*. Beverly Hills, CA: Sage.
- Permzadian, V., & Credé, M. (2016). Do first-year seminars improve college grades and retention? A quantitative review of their overall effectiveness and an examination of moderators of effectiveness. *Review of Educational Research, 86*(1), 277-316.
- Porter, S. R., & Swing, R. L. (2006). Understanding how first-year seminars affect persistence. *Research in Higher Education, 47*(1), 89-109.
- Reeve, A. (1993). University of Wyoming. In B. O. Barefoot (Ed.), *Exploring the evidence: Reporting outcomes of freshman seminars*. (Monograph No. 11) (pp. 61-62). Columbia, SC: University of South Carolina, National Resource Center for The Freshman Year Experience.
- Robb, A. (1993). University of Prince Edward Island. In B. O. Barefoot (Ed.), *Exploring the evidence: Reporting outcomes of freshman seminars* (Monograph No. 11) (pp. 41-42). Columbia, SC: University of South Carolina, National Resource Center for The Freshman Year Experience.
- Schnell, C. A., & Doetkott, C. D. (2002-2003). First year seminars produce long-term impact. *Journal of College Student Retention, 4*(4), 377-391.
- Scrivener, S., Sommo, C., & Collado, H. (2009). *Getting back on track: Effects of a community college program for probationary students*. New York, NY: MDRC.
- Shanley, M., & Witten, C. (1990). University 101 freshman seminar course: A longitudinal study of persistence, retention, and graduation rates. *NASPA Journal, 27*, 344-352.
- Sidle, M., & McReynolds, J. (1999). The freshman year experience: Student retention and student success. *NASPA Journal, 36*, 288-300.
- Soldner, L. B. (1998). Northern Michigan University. 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. 69-70). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Sparks, J. (2005). California State University, San Marcos. In B. F. Tobolowsky, B. E. Cox, & M. T. Wagner (Eds.). *Exploring the evidence: Reporting research on first-year seminars, Volume III* (Monograph No. 42) (pp. 33-35). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- SREB (Southern Regional Education Board) (2010). *Promoting a culture of student success: How colleges and universities are improving degree completion*. Retrieved November 11, 2010, from publications.sreb.org/2010/10E02_Promoting_Culture.pdf
- Starke, M. C., Harth, M., & Sirianni, F. (2001). Retention, bonding, and academic achievement: Success of a first-year seminar. *Journal of The First-Year Experience & Students in Transition*, 13(2), 7-35.
- Stieha, V. (2005). Northern Kentucky University. In B. F. Tobolowsky, B. E. Cox, & M. T. Wagner (Eds.), *Exploring the evidence: Reporting research on first-year seminars, Volume III* (Monograph No. 42) (pp. 107-112). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Stoecker, J., Pascarella, E., & Wolfle, L. (1988). Persistence in higher education: A nine-year test of a theoretical model. *Journal of College Student Development*, 29, 196-209.
- Stovall, M. (2000). Using success courses for promoting persistence and completion. *New Directions for Community Colleges*, 112, 45-54.
- Strumpf G., & Hunt, P. (1993). The effects of an orientation course on the retention and academic standing of entering freshmen, controlling for the volunteer effect. *Journal of The Freshman Year Experience*, 5(1), 7-14.
- Stupka, E. (1993). Sacramento City College. In B. O. Barefoot (Ed.), *Exploring the evidence: Reporting outcomes of freshman seminars* (Monograph No. 11) (pp. 23-24). Columbia, SC: University of South Carolina, National Resource Center for The Freshman Year Experience.
- Swanson, N. M., Vaughan, A. L., & Wilkinson, B. D. (2017). First-year seminars: Supporting male college students' long-term academic success. *Journal of College Student Retention: Research, Theory & Practice*, 18(4), 386-400.
- Swing, R. (2002). *What type of seminar is best?* Retrieved October 15, 2003, from www.brevard.edu/fyc/fyi/essays/index.htm

- Thomson, R. (1998). University of Vermont. 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. 77-78). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Tobolowsky, B. F. (2005). *The 2003 national survey on first-year seminars: Continuing innovations in the college curriculum* (Monograph No. 41). Columbia, SC: University of South Carolina, National Resource Center for the First-Year Experience and Students in Transition.
- Tobolowsky, B. F., & Associates (2008). *2006 National survey of first-year seminars: Continuing innovations in the collegiate curriculum*. (Monograph No. 51). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Upcraft, M. L., & Gardner, J. N. (1989). A comprehensive approach to enhancing freshman success. In M. L. Upcraft, J. N. Gardner, & Associates (Eds.), *The freshman year experience* (pp. 1-12). San Francisco: Jossey-Bass.
- Upcraft, M. L., Gardner, J. N., Barefoot, B. O., & Associates (2005). *Challenging and supporting the first-year student: A handbook for improving the first year of college*. San Francisco: Jossey-Bass.
- Vaughan, A. L., Parra, J., & LaLonde, T. (2014). First-generation college student achievement and the first year seminar: A quasi-experimental design. *The Journal of The First-Year Experience & Students n Transition*, 26(2), 53-69,
- Verduin, S. (2005). Northern Michigan University, San Marcos. In B. F. Tobolowsky, B. E. Cox, & M. T. Wagner (Eds.), *Exploring the evidence: Reporting research on first-year seminars, Volume III* (Monograph No. 42) (pp. 115-117). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Vinson, R. B. (1993). A working program at Averett College. *Freshman Year Experience Newsletter*, 6(1), p. 8.
- Wahlstrom, C. M. (1993). Genesee Community College. In B. O. Barefoot (Ed.), *Exploring the evidence: Reporting outcomes of freshman seminars* (Monograph No. 11) (pp. 15-16). Columbia, SC: University of South Carolina, National Resource Center for The Freshman Year Experience.
- Weiss, M. J., Brock, T., Sommo, C., Rudd, T., & Turner, M. C. (2011). *Serving community college students on probation: Four-year findings from Chaffey Colleges' Opening Doors program*. New York, NY: MDRC.

- 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.
- Williford, A. M., Chapman, L. C., & Kahrich, T. (2000-2001). The university experience course: A longitudinal study of student performance, retention, and graduation. *Journal of College Student Retention*, 2(4), 327-340.
- Wyckoff, S. C. (1999). The academic advising process in higher education: History, research, and improvement. *Recruitment & Retention in Higher Education*, 13(1), pp. 1-3.
- Yale, A. (2000). Bloomsburg University sets its FYE program's effectiveness. *FYE Newsletter*, 12(4), pp. 4-5.
- Young, R. W. (1982). Seventeen year graduation study of 1963 freshmen at the University of New Mexico. *College and University*, 57(3), 279-288.
- Zeidenberg, M., Jenkins, D., & Calcagno, J. C. (2007). *Do student success courses actually help community college student succeed?* New York, NY: Community College Research Center, Teachers College, Columbia University.
- Zerger, S. (1993, February). *Description and explanation of freshman to sophomore attrition rates*. Paper presented at the annual conference of The Freshman Year Experience, Columbia, South Carolina.