Subject-based First-Year Experience Courses: Questions about Program Effectiveness

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Abstract. This study was part of a program evaluation that examined academic performance and retention differences between first-term students who completed a subject-based first-year experience (FYE) course \((n = 381)\) and comparable first-term students \((n = 332)\) who did not enroll in an FYE course. Actual grade point averages and re-enrollment rates across three semesters were the outcomes of interest. Results indicated that differences in academic performance and persistence were unrelated to completion of a FYE course. Analysis focused at the program level could elucidate course intervention differences across instructors and disciplines as an explanation for these results.

Facilitating student transitions into postsecondary education has been a concern for many years. Institutions have, in large part, addressed transition issues during periods of less than satisfactory enrollment growth by introducing new students to the campus environment through varied orientation formats, and in some instances, seminars and courses (Brubacher & Rudy, 1997; Dwyer, 1989). Campuses that have instituted programs to help students adjust to college do so with the expectations of improved student learning, continued enrollment (Boswell,
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1996; Hoff, 1996; Stumpf & Hunt, 1993), and ultimately, degree completion (Shanley, 1987). As transition issues have come to the attention of campuses, courses generally known as freshmen or first-year experience (FYE) courses, or first-year seminars, have emerged and are now prevalent on 94% of college campuses (Barefoot, 2003).

FYE courses of varying lengths often contain transition content and include defined learning objectives. Baiera (as cited in Sommers, 1997) found that FYE course objectives include improving academic skills, increasing resource awareness, facilitating interactions among faculty and peers, and connecting coursework with career objectives. Texts available for use in FYE courses may also include content on health and wellness with sections that deal with managing change and stress and adjusting to college. In broad terms, FYE courses focus on students’ educational experiences through advancing students’ institutional knowledge, helping them acquire requisite learning and self-awareness abilities, and integrating them into the campus community (Boswell, 1996; Hoff, 1996; Tinto, 1993).

Over the past 100 years, the number of institutions providing orientation-type courses has fluctuated. Following World War II, 43% of institutions surveyed reported offering a required orientation course (Bookman, 1948). The percent of institutions offering such courses then dropped to near obsolescence during the 1960’s (Drake, 1966). The current FYE revival began in the early 1970’s at the University of South Carolina with its University 101 course (Upcraft & Gardner, 1989). Research at South Carolina has indicated that students enrolled in University 101 had significantly higher academic performance and retention rates one year post-course than students who did not enroll (Strumpf & Hunt, 1993).

This study focuses on one campus, the University of Nevada, Reno (UNR), and its implementation of an emerging form of FYE. This subject-based FYE format being studied combines transition issues with discipline specific course content. Several studies have found that FYE course content integrated with introductory classes has resulted in positive academic performance and persistence outcomes (House & Kuchynka, 1997; Maisto & Tammi, 1996; Hoff, 1996; Stumpf & Hunt, 1993), and ultimately, degree completion (Shanley, 1987). As transition issues have come to the attention of campuses, courses generally known as freshmen or first-year experience (FYE) courses, or first-year seminars, have emerged and are now prevalent on 94% of college campuses (Barefoot, 2003).
In response to Tinto’s (1993) point that a goal of programs is to affect some change within an institution, research must continue to explore the effectiveness of programs in institution-specific settings. Thus, this study sought to determine if similar outcomes would result from a broader implementation of the subject-based format.

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An efficient administrative structure for delivery of the FYE course can be a critical element in program effectiveness. Sommers (1997) outlined several approaches to the implementation of FYE courses. He points out that implementation of a campus-wide FYE intervention presents funding, staffing, and management challenges to course coordination and content delivery. Sommers suggested that these could be overcome by using an academic discipline’s introductory course to deliver FYE content. FYE courses offered in this context are not limited to student transition issues, but can serve departmental objectives. A major component of the course involves introductory-level, discipline-specific content that provides a foundation in students’ proposed future fields of study. This format may also provide a vehicle for program faculty to establish relationships with future majors.

Maisto and Tammi’s (1991) examination of the effect of a graded, subject-based, introductory course measured academic integration via student grade point average and earned academic units at the University of North Carolina at Charlotte. This study of 150 course participants used a survey instrument (Pascarella & Terenzini, 1977, 1978, 1979) that assessed a range of student perceptions including commitment to complete a degree and commitment to the institution (e.g., loyalty). Results indicated that seminar participants “earned significantly higher grades …” (p. 42) and also reported more informal faculty contacts and social interactions than non-participants. Maisto and Tammi’s study concluded that findings on academic and social integration as a result of participation in a subject-based first-year orientation course were positive.
House and Kuchynka (1997) used Fidler and Hunter’s (1989) measures, academic performance and retention, in their study regarding effectiveness of subject-based FYE courses at Northern Illinois University. These researchers examined academic performance and retention of 516 health and human science (HHS) majors—85 first-year students who completed a graded introductory subject-based FYE course compared to 461 comparable majors who did not complete the course. Students’ mean grade point averages (GPA) after one and two subsequent semesters and retention across two-year intervals served as outcome measures. After controlling for differences in ACT scores, results indicated that students who took the FYE course had significantly higher GPAs in each of their first two semesters than the comparison group. Additionally, students who took the FYE course had significantly higher rates of re-enrollment (82%) into their second academic year than students who did not (65%).

Sommers (1997) studied student differences following participation in a graded, introductory subject-based FYE geography course or a free-standing FYE versus non-participation in such a course at Central Connecticut State University. Of particular interest was a comparison of the economic and organizational concerns between subject-based and non-subject based FYE courses. Sommers suggested subject-based courses advantageously recruited new geography majors in addition to creating a stronger academic program. The Central Connecticut study compared retention and course drop rates for introductory geography courses with and without FYE content and other FYE courses. These results, along with additional survey data, indicated positive differences between the groups with significantly fewer FYE students reporting academic problems and dropping fewer classes throughout the year relative to students not enrolled in a FYE course.

Overall, survey responses from Connecticut’s 216 FYE participants indicated a stronger connection to the university, the faculty, and the campus relative to the 140 students not enrolled in these courses (Sommers, 1997). FYE participants reported a deeper understanding of the purpose of a college education and believed professors were interested in their personal success.
Finally, Sommers found a small difference in retention rates between FYE participants (72%) and all first-year students returning (66%) for their sophomore year. He suggested that when the economics of higher retention rates are projected over an entire first-year class, the number of students retained could “offset the cost of smaller FYE class sections” (p. 248).

Sommers also suggested (1997) that a subject-based course may be more inclusive and less isolating for commuters when compared to orientation or FYE courses instituted through residence halls. Subject-based courses further address the issues of how to fund the course sections and involve academic faculty in retention and accountability efforts. Finally, providing support for FYE content within disciplines can address faculty’s administrative and coordination concerns. “For those institutions that cannot overcome the financial or logistical problems of such a program, the use of existing introductory courses as vehicles for FYE instruction is a viable option” (Sommers, 1997, p. 249).

In light of the prior literature suggesting that FYE courses have beneficial effects on students’ GPA and retention, several issues were of interest for the present evaluation. The purpose of this study was to examine whether subject-based FYE courses have an impact on differences in students’ academic performance (GPA) and persistence. Thus, the evaluation hypotheses included: (a) those students engaging in a subject-based FYE course would exhibit higher college GPAs across the three subsequent semesters than students not enrolled in a prior FYE course; and (b) those students taking a subject-based FYE course would be more likely to return to college in the subsequent three semesters than those who did not take a FYE course.

**Background**

At the time of this study, Nevada had several dubious distinctions within its high school populations. First, fewer than 30% of Nevada’s high school graduates were enrolling in postsecondary programs; this was the lowest college-attending rate in the nation. Second, Nevada ranked first nationally in percentage of high school dropouts (14%). In addition, the University of Nevada,
Reno student enrollment growth was unsatisfactory, averaging less than a 1% increase annually between 1989 and 1999.

Concerns about growth and student persistence led to administrative support for faculty interested in first-year student success to attend conferences, particularly at the University of South Carolina, regarding first-year programs. These faculty and supportive institutional leaders were also meeting informally to identify new strategies to address transition issues. As an outcome of the group’s work, external grant funds were acquired to support a one-year pilot of subject-based FYE courses in 1998. In 1999, the Academic Affairs Office provided an FYE course workshop and authorized funding ($500 per course) to support course development. Workshop content included training related to the use of Cornerstone (Montgomery, Moody, & Sherfield, 1999), the text used in all FYE courses, as well as other course design strategies such as appropriate use of student affairs specialists, use of students as peer mentors, and course objective development.

Method

Sample

Fall 1999 FYE course completers (n = 381) were compared with a group of students (n = 332) who did not elect to enroll in a FYE intervention. The total sample of 385 females and 328 males in the study were representative of the 55 to 45% female to male UNR student body proportions during the study period. Ethnicity for the entire sample, as well as within the comparison groups, reflected the University’s general population ethnic distribution (Native American 1%, Asian 7%, Hispanic 5%, African American 3%, White 80%, and Unknown 4%). No significant difference was found in age between FYE and non-FYE students; the majority of the total sample falling into the traditional 18 to 19 college age range.

There was a higher representation of males in FYE courses, while females represented 60% of non-FYE students. Since academic performance (college GPA) was one of the outcome measures in this study, predictors of academic performance, entrance
exam ACT scores and high school GPAs, were examined between comparison groups. ACT scores were available for 345 FYE and 316 non-FYE students. FYE completers had significantly higher (23.77 to 22.85) ACT scores, \( t (659) = 3.01, p < .001 \). Additionally, high school GPAs among 347 FYE completers and 322 non-FYE students indicated that the FYE group had significantly higher (3.42 to 3.32) GPAs, \( t (667) = 3.11, p < .001 \). Thus, the two groups were not homogeneous and the study design was representative of a pre-experimental post-test only design with nonequivalent groups (Royse & Thyer, 1996).

**Procedure**

Data analyzed in this study were obtained from the University of Nevada, Reno’s Student Information System. All students in the study were attending UNR for the first time during fall 1999. Three hundred eighty-one students were enrolled the 17 FYE intervention courses; 332 students enrolled in 23 composition courses also consented to participate in the study. Semester GPAs for fall 1999, spring 2000, and fall 2000 were available for 699, 659, and 556 students of the study’s 713 initial participants, respectively. Enrollment status was available for all 713 students in the study.

**Measures**

*FYE status.* Two groups were of interest: the FYE group, defined as those who self-selected a FYE course identified by departmental titles within their anticipated major field, and the non-FYE group, or those students who did not opt to enroll within a FYE course during the fall 1999 semester. Students enrolled in both a beginning composition course and a FYE intervention course were designated as having received the FYE intervention.

*Grade point average (GPA).* GPA was based upon a four-point scale with an “A average” equal to 4.0. Fall 1999, spring 2000, and fall 2000 GPAs were obtained for all continuing students.

*Persistence/Retention rates.* Enrollment data for fall 1999 to spring 2000 and fall 1999 to fall 2000 periods were available
for all students. Based upon enrollment in spring 2000 and fall 2000, participants in the study who had completed the fall 1999 semester were categorized as (a) returning or (b) not returning. Retention rates for fall 1999 to spring 2000 and fall 1999 to fall 2000 were thus determined for all students in the study.

**Results**

**Group Differences**

Although similar on demographic characteristics, our FYE and non-FYE groups differed significantly on prior measures, namely high school GPA and entrance exam (ACT) scores (FYE group higher on both), thus constituting nonequivalent comparison groups. Analysis was undertaken to examine whether ACT scores and GPA were correlated to determine functioning as potential covariates of college GPA and continued enrollment in subsequent semesters. Indeed, higher ACT scores \( r = -.12, p < .001 \) and high school GPA \( r = -.12, p < .001 \) were significantly related to FYE group membership. Results of two separate subsequent analyses of covariance (ANCOVA), with ACT as a covariate, revealed a significant main effect for spring 2000 college GPA scores, \( F (1, 615) = 31.71, p < .001 \), but not for spring 2000 enrollment, \( F (1, 660) = .12, \text{ ns} \). ANCOVA analysis with high school GPA as a covariate on the same outcomes revealed a similar pattern, with a significant main effect for spring 2000 college GPA, \( F (1, 624) = 98.34, p < .001 \), and not for spring 2000 enrollment, \( F (1, 668) = 2.63, p = \text{ ns} \). Thus, high school GPA and ACT were additionally covariates both for fall 1999 and 2000 semester GPAs and fall 2000 retention. Interestingly, results of a follow-up multiple regression analysis with college GPA and enrollment as separate outcome variables revealed that ACT scores and high school GPA jointly accounted for 27% of the variance in explaining spring 2000 college GPA, whereas only high school GPA significantly predicted spring 2000 enrollment; for both analyses FYE status was not a predictor. For enrollment in fall 2000 semester, both ACT and high school GPA were significant predictors, over and above FYE status again.
College Academic Performance

Independent sample *t*-tests were used to examine mean GPA differences between FYE and non-FYE students for fall 1999, spring 2000, and fall 2000 semesters. Semester GPAs for 550 (287 FYE and 263 non-FYE) continuously enrolled students for all three semesters were available for the analysis of fall 2000. Continuously enrolled students were those who experienced no break in enrollment during the study across two years. The analysis revealed no significant difference in college GPAs between FYE and non-FYE student groups continuously enrolled across three semesters (Table 1).

Table 1
Independent Samples *t*-test for Academic Performance Differences for Continuously Enrolled Students

<table>
<thead>
<tr>
<th>Status</th>
<th><em>n</em></th>
<th>Mean</th>
<th>Standard Deviation</th>
<th><em>t</em></th>
<th>df</th>
<th>Significance (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 1999 GPA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FYE</td>
<td>287</td>
<td>3.0721</td>
<td>.7346</td>
<td>1.840</td>
<td>548</td>
<td>ns</td>
</tr>
<tr>
<td>NFYE</td>
<td>263</td>
<td>2.9613</td>
<td>.6720</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring 2000 GPA</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FYE</td>
<td>287</td>
<td>2.9512</td>
<td>.7612</td>
<td>.542</td>
<td>548</td>
<td>ns</td>
</tr>
<tr>
<td>NFYE</td>
<td>263</td>
<td>2.9184</td>
<td>.6502</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall 2000 GPA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FYE</td>
<td>287</td>
<td>2.7521</td>
<td>.8852</td>
<td>.225</td>
<td>548</td>
<td>ns</td>
</tr>
<tr>
<td>NFYE</td>
<td>263</td>
<td>2.7357</td>
<td>.8150</td>
<td></td>
<td></td>
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<tr>
<td>Cumulative GPA</td>
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<td></td>
<td></td>
<td>1.264</td>
<td>548</td>
<td>ns</td>
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<tr>
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<td>.6492</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>NFYE</td>
<td>263</td>
<td>2.8870</td>
<td>.5926</td>
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</tr>
</tbody>
</table>

As depicted in Table 2, *t*-test analyses were undertaken to examine GPA change between semesters for both comparison groups. A significant difference in GPAs between the fall 1999 and spring 2000 and between spring 2000 and fall 2000 semesters was found; however, these differences were not associated with FYE completion.

The relationship between enrollment status and GPAs was
Table 2
T-test for GPA Differences Between Semesters by Enrollment Status

<table>
<thead>
<tr>
<th>Enrollment by Semester</th>
<th>Continuously Enrolled</th>
<th>Fall 1999</th>
<th>Spring 2000</th>
<th>Fall 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t</td>
<td>df</td>
<td>t</td>
<td>df</td>
</tr>
<tr>
<td>Fall 1999</td>
<td>3.019*</td>
<td>100.165</td>
<td>2.871*</td>
<td>93.851</td>
</tr>
<tr>
<td>Spring 2000</td>
<td>2.936*</td>
<td>96.989</td>
<td>2.791*</td>
<td>87.115</td>
</tr>
<tr>
<td>Fall 2000</td>
<td>2.744*</td>
<td>75.567</td>
<td>2.741*</td>
<td>75.931</td>
</tr>
</tbody>
</table>

*p < .001

also examined. The observed differences between the fall 1999 and spring 2000 GPAs were substantial between students who returned and those who did not enroll during the fall 2000 semester (Figure 1). GPAs for both semesters and both FYE groups were significantly different between returning and not returning groups, but again these outcomes could not be associated with FYE completion.

Figure 1. GPA by Enrollment Status and FYE Completion.
Retention Differences

This study used continued enrollment into spring and fall 2000 semesters as a retention measure. Chi-square tests were employed to ascertain differences in retention frequency between FYE completers and non-FYE students for the fall 1999 to spring 2000 and fall 1999 to fall 2000 semesters. There were 674 (362 FYE and 312 non-FYE) students (95%) enrolled through the spring 2000 semester and 577 (303 FYE and 274 non-FYE) students (81%) were enrolled continuously through the fall 2000 semester. In the study sample, 80% FYE and 83% non-FYE students returned to enter their second year of college. Retention differences between FYE and non-FYE students were not significant across either fall 1999 to spring 2000, spring 2000 to fall 2000, or fall 1999 to fall 2000 semesters.

Discussion

Conclusions and Implications

This evaluation study found that subject-based FYE course completion was not related to student GPA nor persistence over a two-year period. The new students who voluntarily enrolled in subject-based FYE courses did not achieve higher GPAs, despite entering with significantly higher ACT scores and high school grade point averages than non-enrollees. FYE students also did not persist in greater proportions than students who did not enroll in an FYE course. A significant difference in GPA, independent of FYE status, was found between semesters as academic performance decreased from fall 1999 through fall 2000. Overall students who enrolled for a second fall semester had significantly better academic performance than those who did not elect to return; however, FYE status was unrelated. Contrary to prior literature, our results do not strongly support the implementation of FYE courses in this subject-based iteration campus-wide for the purpose of improving student academic performance or persistence.

Studies (House & Kuchynka, 1997; Maisto & Tammi, 1991;
Sommers, 1997) that have shown positive outcomes for subject-based FYE courses have been focused on the departmental level. Campus-wide FYE courses such as the University 101 model used at the University of South Carolina that have demonstrated positive outcomes (Fidler, 1991; Fidler & Hunter, 1989; Fidler & Moore, 1996; Shanley, 1987) have not historically been subject-based. The differential organizational structures across campuses might suggest the most practical method under which an FYE intervention may be organized and implemented. At institutions that distribute students to degree colleges as pre-majors instead of providing services, such as advising through a university college, delivering FYE content via introductory courses is an attractive option. It is possible that the university’s FYE iteration did not incorporate the University 101 model’s academic success content.

Implementation of subject-based FYE at the University of Nevada, Reno was not fully campus-wide. Only 17 of the 65 academic departments elected to offer an FYE course. Programs that provide service courses such as general education or foundation courses for substantial numbers of non-majors may find minimal motivation to offer FYE content in introductory courses, especially when they serve a small number of their own majors. If other subject-based FYE course studies determine that higher GPAs or persistence are associated with course completion, departments would be better served to assess their intervention and gather data that would more precisely answer questions of value to them.

A conclusion of this study is that caution is warranted when considering an institution-wide implementation of first-year seminars based on departmental-level results. Additionally, our study participants differed initially on high school GPA and ACT scores, thus complicating a true comparison of academic success between college FYE and non-FYE students. One limitation of this study is that no strict standardization of presentation and FYE content existed across different FYE sections to assure valid comparison. Departmental decision-making processes, faculty experience with FYE content, and course-level outcome data may have shed light on students’ experiences in the course
but were not available for analyses in this study. Other subject-based FYE course measures similar to those used in other studies (e.g., credits attempted, dropped, or earned) may also have provided more information about the role of FYE courses in student academic success.

Clearly, uncontrollable elements presented limitations to this study. Not only was FYE course enrollment voluntary, but students in both groups also enrolled independently in additional courses each semester. The range of difficulty for courses between the study groups was assumed to be equivalent; however, differences in difficulty could have been an intervening variable. In addition, inconsistencies in grading (i.e., different standards for an ‘A’ or ‘B’ work across instructors, norm-referenced versus criterion referenced grading policies, or the effects of grade inflation on individual instructors) can contaminate their use as outcome measures.

Despite the limitations noted above, this study makes valuable contributions to the literature on FYE courses and suggests important implications for practice. Findings in this study were contrary to the assumption that providing new students with support in the form of FYE content will affect academic performance or persistence positively. Implementation of FYE without adequate attention to developing a cadre of knowledgeable, supportive faculty may be of little more value than no program at all. Our assumption, that entering students possessing higher college success predictors (ACT and high school GPAs) would continue to exhibit significantly higher outcomes, was called into question. It may be unacceptable to conclude that completion of an FYE course had a negative impact on student performance; however, this possibility exists. Swing (2002a) indicates that academic subject-based seminars were found to produce lower learning outcomes than other forms of FYE, but he (Swing, 2002b) also suggests that engaging pedagogy, more than content, may be the determining ingredient in desired outcomes surrounding FYE. The emergence of engagement as a potential proxy for learning has exhibited potential that may influence the type of FYE program best suited for an institution’s student body. Monitoring levels of engagement in subject-based courses could
provide an additional outcome measure and produce findings that would assist institutions in determining which form of FYE is best suited for their particular setting and needs. Another possibility is that the FYE course did nothing to enhance college student academic performance as those choosing this option may have already been highly motivated and intellectually competent students, thus suggesting a ceiling effect. Conversely, those with lower high school GPAs and ACT scores did not even opt for such a course, hence potential enhancement in academic success could not be indexed. The optimal way to test the effects of FYE courses would be using random assignment of students to classes, but this is not ethically possible. The best one can do is to have roughly equivalent comparison groups, but again, this is not feasible in many cases. Therefore, by standardizing the FYE implementation one can maximize identification of differences in student success if they exist.

Recommendations

Institutions contemplating implementation of any iteration of subject-based FYE are cautioned to ascertain the level of interest and commitment of their faculty, explore the issues related to content and coordination of such a program, provide staff development to involved faculty and, if implemented, design research, the results of which will answer questions for formative as well as summative decision making. Institutions are further cautioned to examine closely the administrative and coordination issues that may have placed limitations on the potential impact of the University of Nevada, Reno’s implementation of the FYE program and allow some time for the intervention to mature.

Faculty teaching subject-based FYE courses within a department should consider designing courses with standardized content elements similar enough to improve the potential for course fidelity across disciplines. A means to assess the content provided during each course should also be included and data should be analyzed to determine whether any significant differences in FYE content are presented. To this end, at least one departmental faculty member should take an active role in advising students to
enroll in an introductory, subject-based FYE course on campuses where new students (pre-majors) are assigned to degree colleges. Departments should identify one or more advisors from among potential FYE instructors to facilitate integration of prospective majors into the department. In addition, training faculty on the impact of student transition issues beyond their expertise is essential. Faculty need to be cognizant of the breadth of available student services, the offices and personnel providing ancillary services, and appropriate referral processes. Department-level analysis would permit more control over any unique characteristics related to course difficulty, content, and organization. Instruction of FYE courses by interested faculty with adequate FYE background should ameliorate course fidelity issues. This step would provide a basis for analysis of long-term performance measures useful in assessing student learning and persistence within context of individual departments or programs.

**Future Directions**

Additional data on entering students’ academic history may also prove helpful in future analysis. Assessing such factors as student motivation, potential for success, goals for education, and other such indices could be helpful in understanding which types of students are attracted to FYE curricula. A scheme similar to that employed by Adelman (1999) could provide data to construct an academic resource quotient that reflects, in addition to entrance exams, each student’s educational preparation. Such a measure would provide a finer level of discriminations for analysis. An additional independent variable would facilitate longitudinal examination of academic and persistence outcomes by differentiating among academic potential better than standardized entrance exam score.

A broader range of background characteristics should also be routinely gathered on all entering students to determine each student’s non-academic risk for persistence and academic success. Factors that can potentially contribute to student outcomes such as off-campus employment, first-generation status, and parent education as well those usually maintained for age and ethnicity
may prove useful for targeting students for participation in FYE. These factors can contribute to the institution’s understanding of students and their needs and drive decisions about appropriate allocation of resources.

References


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