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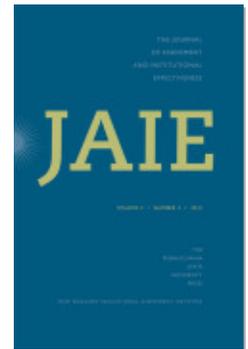
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## First-Year Experience: A Comparison Study

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### ABSTRACT

*In 2007 Southern Connecticut State University initiated a comprehensive First-Year Experience program to promote student engagement, improve academic competencies, and boost retention rates. The program included a revamped orientation, mandatory learning communities, increased academic support, and increased campus involvement. While all students participated in these components, only 50 percent of students were enrolled in a first-year seminar. Seminar participants demonstrated significantly higher rates of retention, higher GPAs, and more credits earned than nonseminar students. These effects were still evident after three years. This study identified a psychological-educational factor—future orientation—as an important factor for explaining the difference in outcomes.*

In 2007 Southern Connecticut State University (SCSU) initiated a comprehensive First-Year Experience (FYE) program intended to promote student engagement, improve students' academic competencies, and boost retention rates. The FYE program included, for all incoming freshmen, a revamped New Student Orientation, mandatory academic learning communities, increased academic support work, and increased opportunities for campus involvement. While all students participated in these components,

only 50% of students were enrolled in a First-Year Experience seminar; this provided an opportunity for the university to measure the impact of an FYE seminar on student success. The two groups of students were comparable in terms of their demographic profiles. Yet, the seminar participants demonstrated significantly higher rates of retention, higher GPAs, and more credits earned than students who did not participate in a seminar. Moreover, these effects were still evident after three years. This study identified a psychological-educational factor that is amenable to change—future orientation—as an important factor for explaining the difference in outcomes between the seminar and nonseminar students. Future orientation is the ability to conceive of one's own development and take actions in the here-and-now to achieve one's hoped-for future (Ben-Avie et al. 2003). Moreover, future orientation was key in predicting the probability of students staying at the university. As an institution, we have learned much about the profile of students who remain at our university; this knowledge serves as a valuable guide not only for our recruitment and enrollment processes, but also for what we do in the classroom and how best to support students' engagement in the co-curriculum.

## **Problems Confronting First-Time College Students**

The faculty and staff committee designing the First-Year Experience (FYE) program at Southern Connecticut State University relied heavily on research regarding characteristics of successful programs (Barefoot et al. 2005; Kuh, Kinzie, Schuh, Whitt, and Associates 2005; Pascarella and Terenzini 2005; Reason, Terenzini, and Domingo 2006). The research encompassed the review of FYE programs since the development of first-year seminars at the University of South Carolina in the 1970s and the development of the National Research Center for the Freshmen Year Experience (subsequently renamed the National Resource Center for the First-Year Experience and Students in Transition). Most researchers and higher education practitioners agree that the first year of college is critical for developing a foundation on which academic success and college persistence rest (Reason, Terenzini, and Domingo 2006). The benefits of FYE programs in helping students make successful transitions into college have long been recognized (e.g., Pascarella and Terenzini 2005).

By some reports, approximately 95% of colleges and universities offer some type of first-year experience to their incoming students. These programs

vary widely, from extended orientations to study skills classes to seminars with academic content. Yet, despite the near universality of FYE programs, the average first-to-second-year retention rate in U.S. colleges and universities in 2010 was 66.7%. For four-year colleges alone, the one-year retention rate was 72.9% (ACT 2010). Although there is some variability from year to year, these numbers have remained essentially unchanged over the past twenty years (ACT 2010). It is important, therefore, to identify specific student skills and behaviors that are likely to result in successful outcomes, including academic growth and retention. It is for this reason that it is important to examine students' learning and development from their initial transition to college through graduation.

### ***Transitioning to College***

For first-time college students, the developmental triumph occurs when they successfully transition to college life. As Hunter observed, "The first college year is not grade 13." She explained: "Making the transition from being a high school student to being a successful college student does not happen instantaneously, and it certainly does not occur by simple osmosis" (Hunter 2006, 4). For example, the strategies that the students learned in high school are not in themselves ineffective strategies. Those strategies, however, were developed in a context that is far different than the college classroom. Cole, Kennedy, and Ben-Avie observed, based on their analysis of data from the Beginning College Survey of Student Engagement (BCSSE) and National Survey of Student Engagement (NSSE), that "students seemed to continue to engage in behaviors that were successful for them in high school. However, these behaviors met only varying levels of success and often simply did not work well in college" (2009, 65).

### ***Maladaptive Responses***

In his classic psychological interpretation of higher education, Sanford noted that for some students "the strains of the first few weeks of college are so great that there are set in motion maladaptive responses which may lead to leaving college in the freshman year" (1962, 271). A helpful conceptual tool comes from classic child psychiatry. Noshpitz and King (1991) observed that this period of late adolescence is marked by increased choices that young people have to make. Which college to attend is one important choice and, once in college, the social group choice becomes pronounced.

They note, “Where choices are less determined, the range for decision making is much wider” (410). For students who have not had a great deal of experience in adapting to new situations, it would appear preferable to them to make as few choices as necessary. Hence, sticking to choices they made during high school or at orientation would outweigh other considerations. Unless the university disrupts this pattern, students may not take advantage of all the opportunities afforded by the learning environment.

## **Self-Regulation and Goal-Directed Activities**

Maladaptive behaviors emerge, in part, when students have yet to develop the level of self-regulation necessary for consistently practicing academic habits of mind. Academic habits of mind include time management, study habits, the process of inquiry that is common to all academic disciplines, and the self-advocacy that is the result of an orientation to the future. Ben-Avie (2008) noted that university students tend to drop out when they find themselves in a difficult situation and do not engage in goal-directed activities to resolve the situation. Consider students who accumulate high credit-card debt; one of the consequences is withdrawal from higher education (The State of Iowa 2000). Students need to hold a mirror to themselves, recognize that they cannot solve the problem on their own, and engage in goal-directed activities. So, too, with students who experience academic failure. Universities have academic resource centers, disability resource centers, writing centers, and so on. The problem is that the students have to act before the situation escalates beyond recovery. *Development is not a spectator sport.*

### ***Need for Orientation to the Future***

Developing the capacity to carry out goal-directed behavior emerges from an orientation to the future (Ben-Avie et al. 2003). The orientation of many students at risk of failure is marked by magical thinking (“Somehow, the project will get done in time”), by hoping for an external intermediary (“I’ll win the lottery”), and/or by the expectation that the future will remain largely the same as the present (“I’ll always live in a dangerous neighborhood”; “I wouldn’t know how to behave in such a fancy office”). All these beliefs can support habits of mind that are antithetical to academic success. Students who engage in magical thinking or are too overwhelmed by the

present frame are less likely to act in ways that will bring them closer to their hoped-for goals.

### ***Need for Instrumental (“Goal-Directed”) Actions***

The relationship between potential future outcomes and present behavior for students is captured in the following passage by Lens and Moreas:

*People with a long future time perspective . . . will experience less immediate satisfaction and more delayed satisfaction due to goal attainment (e.g., to become a nurse in two years vs. a medical doctor in seven years). However, the self-imposed delayed gratification that is inherent in long-term goal-setting cannot be reached by waiting. One usually has to perform a longer or shorter series of instrumental actions in order to achieve one’s goals. (1994, 27)*

College students’ “instrumental actions” or “problem-solving actions” enable them to effectively navigate on campus and take advantage of the education afforded to them by the university. On one side of the equation are the actions of the students. On the other side of the equation are instructional activities that promote students’ problem-solving and instrumental actions. Cifarelli, Goodson-Espy, and Chae explained that “instructional activities that allow students opportunities to share and defend their ideas for solving particular problems prior to actual solving help develop self-advocacy in students and contribute to a proactive sense of agency” (2010, 227). FYE programs have the potential to impact the trajectory of students’ learning and development so that students experience a sharp veer from the paths they were on as high school students.

### **Goal-Directed Actions to Manage Change**

The ability to anticipate and manage change, instead of fearing it, leads to the attainment of the highest levels of learning and development. As Pinner, in his seminal chapter, “The Crisis of the State Universities: Analysis and Remedies,” stated:

Education means openness to change. It means that we help the student to shed the conventional wisdom and enable him to make

rational choices by the use of information, insight, and sensitivity. It means, first of all, that we generate the willingness to change. We communicate excitement about the worlds of knowledge and of the arts, so that our students will want to expose themselves to unaccustomed experiences. (1962, 960)

When students are engaged in their learning and development, knowledge and understanding result. Once they understand, they become capable of performance or action (Shulman 2002). Shulman further explained that “Critical reflection on one’s practice and understanding leads to higher-order thinking in the form of capacity to exercise judgment in the face of uncertainty and to create designs in the presence of constraints and unpredictability” (38). The capacity to face uncertainty is of special value when students transition from high school to college life. One way in which universities can help students start right is by structuring the time for students to reflect on their actions and understanding, as in, for example, a first-year seminar.

### ***University Support for First-Time College Students***

Tinto and Pusser stated that “student success, especially for academically under-prepared students, requires academic and social support that is carefully aligned to student learning in the classroom” (2006). People working in the institution need to see how their work fits in with the larger “intentional structure,” to use Tinto’s phrase. The success of the process depends on the shared understanding that every interaction that the student has with a person on campus, regardless of position, either contributes to this process or disrupts it.

As Smart, Feldman, and Ethington noted at the National Symposium on Postsecondary Student Success,

Our collective findings . . . suggest that the advice provided students need not be constrained by students’ past or present personality profile, but rather can be grounded in a more developmentally and futuristically oriented perspective based on the broad repertoire of competencies and interests that students desire to develop as a result of their collegiate experiences . . . [focus] on what they hope to be rather on what they presently are. (2006, 17)

To promote student success, a university needs to focus on the students' future orientation and goal-directed actions to achieve that future—which are amenable to change—and not only on their “crystallized learning” or demographic profiles (Horn and Cattell 1966). As Ann Rancourt stated in the inaugural issue of this journal:

Many faculty in higher education have indicated for many years that they feel students are coming to college underprepared. Whatever knowledge and skills students are entering college with, the primary task of college faculty is to “move students’ skills in analysis and application to a much higher level” (AAC&U 2007, 31). It is our responsibility to identify our expectations and to find strategies that will move students to higher skill levels irrespective of the level at which they enter. (2010, 3)

Because youth and adult development are incremental processes, the success of an intervention may not be seen for several years. This is especially the case with a first-year experience “right start” type of intervention.

## **It's All about Relationships**

Students' relationships with others promote their engagement in educationally purposeful activities (Comer, Brown, and Ben-Avie 2004). These activities impact students' orientation to the present and to the future. Educationally effective universities, according to Kuh, channel students' energies toward appropriate activities and engage them at a high level in those activities (2001). Students develop the motivation to achieve in college and in life through their interactions with adults as they navigate through college, home, work, and recreational activities. Students, however, will decline to “channel” their energies and become engaged unless they have formed healthy relationships with faculty, staff, and peers. In particular, until students make learning their own, they need to be engaged with faculty who value learning. The relationship is important because it fosters students' emotional attachment to the knowledge (Ben-Avie et al. 2003).

## The First-Year Experience Program

At the heart of Southern's FYE program are learning communities built around a seminar, "INQ 101: Introduction to Intellectual and Creative Inquiry." The three-credit seminar is designed to help first-year students become engaged members of the university community. Seminars explore topics related to the meanings of higher education through a focus on the process of learning how to learn and cultivating academic habits of mind. Students practice the process of academic inquiry common to all university disciplines; they do so while exploring their reasons for seeking a university education and the choices they make as first-year university students. Complementing the Inquiry course is an English composition course that is designed specifically to develop the students' reading, writing, and critical thinking skills. Students move through these two courses together in groups of twenty, based on their registration at New Student Orientation. The aim is to encourage students to form connections and friendships with their peers, as well as with the faculty who teach these courses and the staff who support them. Inquiry instructors serve as the students' academic advisors throughout the first year.

Above and beyond the learning communities, the hallmark of the FYE program is the collaboration among Academic Affairs, Student Affairs, and such university resources as advisement, co-curricular programs, health and wellness, residential life, community-based initiatives, academic support services, and career planning.

Prior to the launch of the FYE program, the Office of Faculty Development offered university-wide forums on teaching first-year students, student engagement, interdisciplinary collaborations, and assessing student learning. Recruitment of faculty to teach the FYE seminar began with an open invitation for volunteers. The goal was for full-time faculty to teach all sections. During the pilot year, however, sections were taught by student affairs professionals who were adjuncts and by long-term adjuncts with the university as well as by full-time faculty. The summer before the launch of FYE, a three-day intensive workshop was offered to faculty teaching in the program. Topics included understanding first-year students, pedagogy and technology for first-year students, and curriculum design. Another component was team-building aimed at molding the FYE faculty into a learning community. Two follow-up sessions were held during each semester for faculty to share resources and problem-solve. The Writing Across the Curriculum committee also provided workshops specifically geared to teaching first-year students.

## Research Questions and Hypotheses

Three years after the implementation of the FYE program, marked increases in retention have been documented for the cohort of students who entered in the fall of 2007. The first-to-second-year retention rate for the class was 77.4%, a 5% increase from the previous year. The second-to-third-year retention rate was 62.6%, an increase of 4.4% from the previous year and the highest since the university started keeping track of those numbers with the Class of 1987. Finally, third-to-fourth-year retention was 58.2%, an increase of 4.2% from the prior year and another all-time high.

Although the FYE program was initiated in fall of 2007, there were not enough seminar seats for all entering students; approximately half of the students were assigned to an Inquiry seminar. In this study, we investigated the extent to which the FYE program, specifically the Inquiry seminar, was responsible for the positive changes in retention as well as for changes in other measures of student performance. We also examined whether the program impacted students' ability to undertake goal-directed actions, and whether these, in turn, impacted their academic learning. Therefore, the purpose of the study was to discern whether the students enrolled in the Inquiry seminar demonstrated higher levels of learning and development than the nonseminar students in the short and long term while controlling for potential confounders.

## Method

### *Sample and Data Collection*

The sample was comprised of 1,125 students, of which 561 (50%) participated in an Inquiry seminar and 564 did not. Students registered for one of the seminar sections at the New Student Orientation. As there were not enough sections to accommodate all the incoming first-year students, the students who were unable to enroll once these sections were filled were classified as nonseminar participants. Both groups were placed into learning communities and were provided with opportunities for academic support, community involvement, and co-curricular activities. Thus, the only difference between the two groups of students was that one group participated in a three-credit Inquiry seminar while the other group did not.

The university tends to attract students from nearby communities, and most of the students (approximately 63%) are commuters. Even many resident students are from the surrounding area; thus, the distance between the students' homes and the university is a potentially important variable. Forty-three percent of the 2007 entering class lived less than 20 miles from campus, 34% lived between 21 and 50 miles, and the rest lived farther away. Once again, the results of an independent T-test shows that the two groups of students did not differ in this regard ( $p = .264$ ). In terms of working on campus and off campus, the two groups did not differ in terms of number of hours worked, either on campus ( $p = .673$ ) or off campus ( $p = .076$ ).

The students' high school academic profile and participation in co-curricular activities were comparable in almost every way, including scores on the SAT and high school experiences. The students' high school academic profiles were gleaned from their responses to the Beginning College Survey of Student Engagement (BCSSE), which was administered at New Student Orientation. For example, the students' high school grades were similar ( $p = .852$ ). The courses that they took were similar, with the exception that the seminar students tended to have completed one more course in science. (The results of all the independent T-tests are presented in table 1.) They enrolled in AP courses at exactly the same rate. In terms of their verbal and math SAT scores, a statistically significant difference was not found ( $p = .315$  and  $.145$ ). Both groups of students spent the same amount of time preparing for class (e.g., studying, doing homework, rehearsing) ( $p = .893$ ) and participating in co-curricular activities ( $p = .281$ ). In terms of the students' high school percentile ranking, the two groups were identical. In summary, the seminar students were neither better nor less prepared than the nonseminar students.

### ***FYE Self-Assessment Surveys***

To study the impact of the new FYE program, measures of student success needed to be developed. Although we administered the National Survey of Student Engagement (NSSE) annually and found that it provided useful information, it did not afford the level of specificity needed to measure the various aspects of our FYE program. We needed measures that were tied more directly to the outcomes of the program, more explicitly linked to the academic habits of mind and self-advocacy themes that had been identified as important by the university.

TABLE 1. Comparison of seminar and nonseminar students: Beginning College Survey of Student Engagement (BCSSE)

Demographic Indicators	Group	N	Mean	Std. Devia- tion	Percentage of Total	Sig. (2-tailed)
Gender	NS <sup>a</sup>	476	1.64	0.481	1.64	0.002
	S <sup>b</sup>	498	1.73	0.445	1.73	
Mother's (or guardian's) education	NS	478	1.97	2.146	1.97	0.877
	S	499	1.99	2.122	1.99	
Father's (or guardian's) education	NS	473	2.09	2.366	2.09	0.857
	S	492	2.12	2.312	2.12	
High School Academic Performance						
From which type of high school did you graduate? Graduated from public high school% Public School	NS	485			48.20	
	S	504			51.80	0.360
What were most of your high school grades? Most of high school grades were B or higher	NS	481			48.80	
	S	502			51.20	0.880
Passed precalculus/trigonometry math class	NS	475			51.50	
	S	490			48.50	0.300
Passed calculus math class	NS	436			43.50	
	S	451			56.50	0.660
Passed probability or statistics math class	NS	436			52.00	
	S	450			48.00	0.160

(Continued)

(Continued)

TABLE 1. Comparison of seminar and nonseminar students: Beginning College Survey of Student Engagement (BCSSE)

	Group	N	Mean	Std. Deviation	Percentage of Total	Sig. (2-tailed)
Completed 4 or more years of English/literature	NS	485			49.10	0.164
	S	502			40.90	
Completed 4 or more years of math	NS	483			48.90	0.727
	S	500			51.10	
Completed 4 or more years of science	NS	483			45.00	0.001
	S	501			55.00	
Completed 4 or more years of history/social sciences	NS	481			49.60	0.690
	S	498			50.40	
Completed 4 or more years of foreign language	NS	483			43.20	0.060
	S	503			56.80	
Completed 4 or more advanced placement (AP) classes	NS	457			50.00	0.920
	S	469			50.00	
Completed 4 or more honors classes (not AP) taught at your high school	NS	471			51.60	0.450
	S	491			48.40	
Overall, how academically challenging was your high school?	NS	478	3.75	0.980	3.75	0.621
	S	498	3.78	0.928	3.78	
SAT Performance						
SAT score: Critical reading	NS	248	490.23	83.280	490.23	0.909
	S	265	491.04	78.626	491.04	

	Group	N	Mean	Std. Deviation	Percentage of Total	Sig. (2-tailed)
SAT score: Mathematical reasoning	NS	250	490.49	95.217	490.49	0.492
	S	269	484.94	88.581	484.94	
SAT score: Writing	NS	222	492.56	91.635	492.56	0.311
	S	224	501.15	86.887	501.15	
ACT score: Composite	NS	30	20.93	4.828	20.93	0.708
	S	37	21.38	4.786	21.38	
SAT composite score (SAT scores or ACT scores converted to SAT scale)	NS	253	988.55	151.504	988.55	0.834
	S	277	985.86	144.455	985.86	
Academic Preparation Scale: Student perception of their academic preparation	NS	481	6.5996	1.61274	6.5996	0.593
	S	499	6.6529	1.50705	6.6529	
Amount of college (university) expenses provided by scholarships and grants	NS	467	2.11	1.728	2.11	0.198
	S	492	2.27	1.975	2.27	
Amount of college (university) expenses provided by student loans	NS	465	2.82	1.956	2.82	0.080
	S	489	3.06	2.284	3.06	
Amount of college (university) expenses provided by parents/family	NS	464	3.27	1.803	3.27	0.424
	S	493	3.36	1.974	3.36	

<sup>a</sup> Nonseminar

<sup>b</sup> Seminar

## ***Sources for the Development of FYE Instruments***

The results of a previous longitudinal cohort study provided the groundwork for new instruments (Ben-Avie and Polka 2006). The longitudinal cohort study of the incoming class of 2004 revealed that the students who persisted at SCSU to their senior year had higher scores on NSSE items that measured the quality of their relationships with faculty, peer, and administrative offices than the students who withdrew. Hence, there was a focus on relationships in the FYE instruments. Another source was the conceptual framework articulated by the FYE committee. Thus, scales were designed to measure academic habits of mind (study skills, time management), the use of inquiry, which is common to all university disciplines, willingness to seek help when not thriving either academically or socially and emotionally, and future orientation and goal-directed actions to achieve the hoped-for future.

## ***The FYE Self-Assessments***

As the FYE program aims to help students get started in the right direction, the FYE Self-Assessments measure the nature and quality of the students' self-reported experiences during their first semester. The first self-assessment is a sixty-nine-item assessment focused on the relationship between the students' learning and development. The second self-assessment is a fifty-six-item assessment that measures behaviors and attitudes related to college success. The FYE Self-Assessments were administered by faculty to both all the students in Inquiry seminar and all the nonseminar students in English composition. The students were offered the option of excluding their responses from group analyses for research use.

## ***Factor Analysis Identified Scales***

The scales of the FYE Self-Assessments were derived by factor analysis. Each item response was expressed through a five-point Likert scale in which 1 meant "strongly disagree" and 5 meant "strongly agree." Factor analysis was conducted with a varimax rotation. The KMO measure of sampling adequacy of .74 and the Bartlett's test of sphericity at  $p < .001$  indicated that the data were suitable for factor analysis. Four scales, with acceptable reliability measures (Cronbach's alpha), eighteen values of 2 or

higher, and total variance explained of about 24%, were identified. The four scales were:

- *Time management and study skills* (Cronbach's alpha of .79). Sample items included "I find it hard to prioritize my time," and "My time using electronic means of social communication (e.g., Facebook, MySpace, Instant Messenger) is having a negative impact on my academic performance."
- *Importance of relationships and communication* (Cronbach's alpha of .71). A sample item was "Part of the coursework for all first-year students should include appropriate ways of communicating with professors via e-mail."
- *Inquiry and academic guidance* (Cronbach's alpha of .84). Sample items included "Since I started college, I have gained confidence in my ability to defend my position on an issue," and "I know where to find any resources on campus for help (anything from homework, computers, projects of any kind, and even just helpful advice for a sense of direction in any of my classes)."
- *Future orientation* (Cronbach's alpha of .74). Sample items included "Compared to the start of the semester, I now have a clearer sense of what I need to do in order to succeed academically," and "This semester, I have taken the initiative to learn more about the courses that I will need to take for my major."

### ***Validation and Reliability***

The self-assessments were validated by a process through which first-year students drafted items that were then reviewed by members of the FYE planning committee, FYE faculty, and strategic-planning work groups. Each year subsequently, the self-assessments have been modified based on the data as well as the addition of new scales that were requested by the different offices on campus. Student comments also informed the restructuring of the self-assessments, and faculty suggested new items.

In order to test for concurrent validity, we examined whether these factors were correlated with the *NSSE* benchmarks and discovered a partial correlation as shown in table 2. The FYE Self-Assessment factors, "Relationships," "Inquiry," and "Future Orientation," showed moderate correlations with three *NSSE* factors: "Academic Challenge," "Enriching Educational

Experience,” and “Supportive Campus Environment.” The “Relationships” factor correlated to a small degree with the factor, “Academic Challenge.” Although the “Time Management” factor had small correlations with only two factors, its negative relationship to all the NSSE factors was consistent with expectations. The FYE Self-Assessments specifically asked about topics that were not included in NSSE.

In order to determine whether the self-assessments met statisticians’ criteria for a reliable instrument, internal consistency reliability analyses were conducted (Cronbach’s alpha). Indeed, the reliabilities showed that the self-assessments were reliable and, thus, could be used for analyses: FYE Self-Assessment 1 (.867); FYE Self-Assessment 2 (.916); combined self-assessments (.926).

## Data Analysis

Independent T-tests were conducted to test whether the short- and long-term outcomes were differentiated by participation in the FYE seminar. Hierarchical multiple linear or logistic regression, as appropriate, was conducted to measure the relative contribution of conventional predictors (e.g., family income, SAT scores) to explained variance in this study’s outcomes. Classification trees were also run using the software tool, R, to explore the dataset and visualize decision rules for predicting retention. R is an open-source programming language and environment that is used to explore datasets in order to classify and predict.

## Results

Students who participated in the seminar had significantly higher semester and cumulative GPAs, earned more credits, and were retained at a higher rate than the nonseminar students. Table 3 shows that the seminar students had higher first-semester GPAs than the nonseminar students, and this pattern persisted for seven semesters ( $t_{[1216]} = -6.900, p < .001$ ). A similar pattern was observed for the number of credits earned. In fall 2010 the number of credits earned by the seminar students was still higher ( $t_{[1216]} = -4.157, p < .001$ ). Table 3 also shows that the one-year retention rate for the seminar students was 80%, compared to 74.7% for the nonseminar students. The retention advantage was maintained into the third year: seminar students returned at a higher rate than the nonseminar students ( $t_{[1216]} = -1.995, p = .046$ ).

TABLE 2. Pearson correlation coefficients, NSSE and FYE factors

	2	3	4	5	6	7	8	9
NSSE Factors								
1. Academic challenge	0.34**	0.42**	0.29**	0.42**	-0.09	0.14*	0.29**	0.29**
2. Active and collaborative learning		0.69**	0.47**	0.32**	-0.06	0.10	0.18**	0.24**
3. Student-faculty interaction			0.46**	0.47**	-0.17*	0.09	0.23**	0.31**
4. Enriching educational experiences				0.34**	-0.09*	0.11	0.32**	0.26**
5. Supportive campus environment					-0.09	0.12	0.33**	0.29**
FYE Self-Assessment Factors								
6. Time management and study skills						0.51**	0.01	-0.20**
7. Importance of relationships and communication							0.36**	0.09*
8. Inquiry and academic guidance								0.38**
9. Future orientation								

\* =  $p < .05$  | \*\* =  $p < .01$

TABLE 3. GPA, credits earned, and retention of seminar and nonseminar participants

	Nonseminar Students	Seminar Students	<i>t</i>	<i>p</i>
First-semester GPA	2.33	2.74	-8.626	<.001
Cumulative GPA (after 7 semesters)	2.38	2.70	-6.900	<.001
Earned credits after 1 semester	11.70	12.40	-3581	<.001
Earned credits after 7 semesters	63.8	72.3	-4.157	<.001
One-year retention	74.7%	80.0%	-2.616	.009
Two-year retention	59.4%	65.8%	-2.722	.007
Three-year retention	55.6%	60.4%	-1.995	.046

### **Predicting Long-Term Outcomes**

Hierarchical multiple regression analysis was conducted to investigate the long-term impact of crystallized learning (high school rank, SAT scores) and demographic data (family gross income) on student performance. In terms of parent adjusted gross income, the median income was \$75,145. The range was from 0 to \$197,504. We controlled for family gross income and factors that might affect GPA such as high school rank and SAT scores. In terms of gender 67% of the students in the incoming class were female. There were more female students in the seminar group than the nonseminar group. However, gender was subsequently eliminated because it did not prove significant in any of the analyses.

The hierarchical model predicted cumulative GPA (as of Spring 2010) from family gross income (block 1) as well as from SAT scores and high school rank (block 2). In this model, family gross income ( $\beta = .09$ ,  $t = 3.14$ ,  $p = .002$ ) explained 1% of the variance ( $F [1,1123] = 11.42$ ,  $p = .001$ ), while SAT scores ( $\beta = .17$ ,  $t = 5.78$ ,  $p < .001$ ) and high school rank ( $\beta = .21$ ,  $t = 7.18$ ,  $p < .001$ ) explained an additional 7.8% ( $F [3,1121] = 36$ ,  $p < .001$ ). The total adjusted  $R^2$  was .11. These analyses indicate that measures of crystallized learning and demographic data were relatively weak predictors of long-term learning and developmental outcomes. Thus, these variables

were not useful in understanding why the seminar students had more positive long-term outcomes than the nonseminar students.

Another regression analysis was conducted to determine the most important predictors of cumulative GPA. In this analysis, the psychological-educational factors were entered into the model. Not surprisingly, the students' own GPAs from previous semesters were important predictors. It is noteworthy that the factor measuring time management and study skills was also an important predictor ( $p < .001$ ). The factor that measures students' time management and study skills was associated with the factor that measures relationships and communication ( $r = .458, p < .001$ ).

### **Retention**

One purpose of the study was to discern whether the students enrolled in the Inquiry seminar had higher levels of retention than the nonseminar students. The results presented in table 3 (above) indicate that this indeed was the case. However, the results from the previous analyses did not provide an explanatory framework for understanding why the seminar students had an advantage that persisted for seven semesters. Consider that on one side of the equation is an intervention (the FYE seminar) and on the other side of the equation is an educational outcome (retention). We wanted to predict the probability that a student will stay at the university. Is a psychological-educational variable such as future orientation an important predictor? Since retention is a dichotomous variable (viz. stayed, left), a logistic regression model was conducted.

The model was derived from a classification tree finding. The classification tree defined a decisionmaking model for retention, and the root node was based on Future Orientation. If students score higher than 3.03 on this factor, then the probability of staying at the university is high. To further investigate this finding, we fit a logistic regression model with whether or not the student stays at SCSU as the response variable. Future Orientation was an independent variable as well as such goal-directed actions as "At least once this semester, I attended an FYE workshop (for example, "Math Success," "Disciplinary Disconnections," "Reading Behind the Scenes")" and "I would use, or have used university resources to help me deal with demands of college life." Given that cumulative GPA and SAT scores have traditionally served as important predictors of retention, these were also included in the model. As the location of the university is an important reason why students are attracted to the university, we also added to the

model the distance between the students' homes and the university. Previous research had indicated that the students' responses to an item that asked whether they intended to graduate from SCSU was an important predictor, so this item, too, was included in the model. The rest of the items on the self-assessments were excluded as along with high school rank and other demographic information (with the exception of verbal SAT).

The overall chi square for the model was 94.612 with a  $p$ -value  $< 0.001$ , meaning that the model is statistically significant for predicting the probability of students staying. The Nagelkerke  $R^2$  value was 0.406. For students who stayed, the model was 93% accurate (i.e., of the students whom the model predicted would stay, 93% actually stayed). Of particular note were the following odds ratios: The odds ratio for cumulative GPA was 5.624, meaning that holding other variables constant, the odds of a student staying at SCSU increases 5.624 times for each increase of 1 point in cumulative GPA. The odds ratio for Future Orientation was 4.315, meaning that holding other variables constant the odds of a student staying at SCSU increases 4.315 times for each increase of 1 point score in Future Orientation. (And the seminar students had significantly higher scores on this scale than nonseminar participants [ $t(1,640) = 4.77, p = .03$ ]).

Several FYE self-assessment items that were not included in the scales showed significantly different scores between seminar and nonseminar students (independent T-tests were conducted to explore differences). These items refer to some of the "teaching points" emphasized in the FYE seminar. In table 4, the comparison of the two groups' responses shows that the seminar students tended to be far more aware of campus resources to help them deal with the demands of college life than the nonseminar students. Moreover, they indicated that they were explicitly taught self-advocacy skills in the FYE seminar, how to solve problems that they may have with administrative offices, and what to do if they were not thriving academically. Most important, the seminar students tended to disagree at a far higher rate with the statement, "When I have a problem at this university, I have to deal with it alone." Because a third of the students in this incoming class were commuters ( $n = 415$ ), encouraging students to stay on campus and participate in co-curricular activities became a high priority of the FYE program. In table 4, it is seen that the seminar students disagreed at a higher rate that they tended to be on campus only when they had class. Furthermore, the FYE students joined a club on campus or participated in a performing arts or musical production at a higher rate; they also took the initiative to learn more about the special programs that the university offered (e.g., international study abroad). As another indicator of the students'

TABLE 4. Individual FYE self-assessment items

FYE Self-Assessment Item	Mean (SD)		Sig.
	Nonseminar	Seminar	
I would use or have used university resources to help me deal with demands of college life.	3.32(1.028)	3.52(.908)	$p = .020$
I know where to find any resources on campus for help (anything from homework, computers, projects of any kind, and even just helpful advice for a sense of direction in any of my classes).	3.70(.961)	3.86(.933)	$p = .030$
If I have some type of crisis, I know that there is a faculty or staff member at this university who will help me.	3.64(.951)	3.98(.829)	$p < .001$
It was easy for me to find out the name of my academic advisor.	3.03(1.203)	3.58(1.040)	$p = < .001$
When I have a problem at this university, I have to deal with it alone.	3.00(1.012)	2.72(.974)	$p = < .001$
I am being taught how to speak up for myself when my needs as a student are not being met.	3.38(.889)	3.64(.843)	$p = < .001$
I am being taught how to solve problems that I may have with administrative offices on campus.	2.91(.954)	3.35(.908)	$P < .001$
In my classes, I am being taught what to do if I am not thriving academically.	3.19(.937)	3.41(.838)	$p = < .002$
At least once this semester, I took advantage of an academic resource on campus (e.g., a study skills seminar, academic tutoring).	1.34(.473)	1.45(.498)	$p = .005$
At least once this semester, I attended an FYE workshop (e.g., "Math Success," "Disciplinary Disconnections," "Reading Behind the Scenes").	1.05(.219)	1.31(.463)	$p < .001$

(Continued)

(Continued)

TABLE 4. Individual FYE self-assessment items

FYE Self-Assessment Item	Mean (SD)		Sig.
	Nonseminar	Seminar	
This semester, I joined a club on campus or participated in a performing arts or musical production.	1.21(.406)	1.30(.461)	$p = < .005$
I tend to be on campus only when I have class.	2.94(1.436)	2.59(1.333)	$p = < .002$
This semester, I have taken the initiative to learn more about the special programs that Southern offers (e.g., International Study Abroad, internships).	2.73(1.027)	2.98(1.064)	$p = < .004$

Note: Nonseminar = 556, Seminar = 557

goal-directed actions in the here-and-now to attain their desired future, the seminar students tended to take advantage of workshops on such topics as study skills, “math success,” and “reading behind the scenes” at a higher rate than the nonseminar students.

## Discussion

This study investigated the short- and long-term impacts of a first-year seminar as part of a comprehensive FYE program. During the pilot year of the FYE program, only 50% of entering students participated in the seminar, providing an opportunity to study the seminar’s impact. As there were not enough sections to accommodate all the incoming first-year students, the students who were unable to enroll once these sections were filled were classified as nonseminar participants. Based on their high school academic profiles (e.g., grades, high school percentile ranking, enrollment in AP courses), SAT scores, participation in co-curricular activities, the seminar and nonseminar students were determined to be comparable. The seminar students were neither better nor less prepared academically than the nonseminar students.

Students who participated in the seminar had significantly higher semester and cumulative GPAs, earned more credits, and were retained at a higher rate than the nonseminar students. For example, three years after entering college, the retention rate among seminar students was 62.9% and was 56.9% for the nonseminar students. Measures of crystallized learning (high school rank, SAT scores) and demographic data (family gross income) were shown to be relatively weak predictors. Thus, a series of statistical analyses was conducted to determine the impact of psychological-educational factors.

The most important predictor of cumulative GPA, aside from the students’ own GPAs from previous semesters, was the psychological-educational factor, “Time Management and Study Skills.” This factor was associated with “Importance of Relationships and Communication.” GPA and another psychological-educational factor—“Future Orientation”—served as the keystone in the model used for predicting the probability of students staying at the university. For students who stayed, the model was 93% accurate. Such a high degree of accuracy suggests that the more we know about our students and their college careers, the more we will be able to develop an

early warning system that can inform successful intervention among the students most likely to leave.

Of course, time management and study skills predicted cumulative GPA, and GPA was in the model that predicted student retention. Moreover, it is not surprising that the factor that measured time management and student skills was related to the “relationships factor.” Students’ relationships with others promote their engagement in educationally purposeful activities. What is noteworthy is the critical finding of the study regarding the need for an FYE program that stretches students’ orientation toward the future. Because the psychological-educational factors are amenable to change, FYE programs are able to impact the trajectories of the students’ academic growth and retention.

Future orientation is the ability to conceive of one’s own development and take actions in the here-and-now to achieve one’s hoped-for future (Ben-Avie et al. 2003). Consistent with this definition, the Future Orientation scale included items reflecting students’ ability to advocate for themselves whenever they encountered problems, to become proactive with regard to their courses, and to gain an understanding of what they needed to do to succeed in college. In multivariate analysis, these abilities were associated with increased short- and long-term GPA as well as short-term earned credits to a much greater degree than were the effects of socioeconomic status and past student performance. These findings suggest that such skills may be the most critical to student success.

Skills and behaviors leading to future orientation were directly and indirectly targeted in the seminar. For example, while academic support workshops were available to all first-year students, the seminar students were more likely to participate in one or more such workshops. Most likely, this was because many seminar instructors required students to attend one or more such events. Thus, the simple availability of services did not ensure that students would take advantage of those opportunities even when information about the advantages of doing so was provided. This was also true of participation in co-curricular activities; many Inquiry instructors required students to sample out-of-class activities. Another potential critical difference between the two groups was the more intense level of academic advisement for the seminar students: Inquiry instructors served as academic advisors for the entire first-year for their seminar students and facilitated students’ transition to an academic advisor within the major. Anecdotal reports suggest that many students continue to maintain a relationship with and seek guidance from their Inquiry instructor well into

their second and third year. The impact of this advisement model warrants further investigation.

The FYE program aimed to improve student performance and development by imparting skills that are useful in the here-and-now yet also “enable an individual to seek goals, make decisions, explore options, solve problems, speak up for himself or herself, understand what supports are needed for success and evaluate outcomes” (Test, Aspel, and Everson 2006, 160). Such skills better enable students to navigate the increasingly complex university environment in which they are developing.

The findings of this study regarding increased retention and enhanced academic performance are consistent with the large body of research documenting the positive outcomes of first-year experience programs. However, as Pascarella and Terenzini point out, the processes and dynamics underlying the success of FYE programs are less clear and less frequently studied (2005). In this study, we also sought to identify and understand the factors that may support students’ retention at the university. Our preliminary model suggested that an orientation to the future and experience with acting intentionally early in one’s college career was strongly associated with success. Further testing and refinement of this model is planned with subsequent cohorts.

## **Institutional Lessons Learned**

Ongoing, comprehensive assessment of the program and wide dissemination of assessment results have helped faculty and staff not only to identify and better understand some of the factors that support students’ retention at the university, but also to use these findings to make data-based changes to the program. For example, linking the FYE program to an all-university initiative—our newly revised general education curriculum—promoted the success of the FYE program because it was not perceived as a “stand-alone” program unrelated to students’ academic achievement. More to the point, we learned the importance of making the first-year experience a solid academic program in which faculty were substantively invested. In this regard, the annual FYE Academy, a faculty development program, is very helpful. The academy also provides faculty with knowledge and skills to teach first-year students. Most of all, we learned, yet again, the importance of relationships. It became clear that the relationships forged between the faculty and student affairs staff contributed to the design and

implementation of the FYE program. Moreover, by registering groups of twenty students to courses linked together, learning communities emerged. The FYE program has become stronger over the last several years because findings such as these were widely reported throughout the university and used to improve the program.

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