FYE Completion and Term-to-Term Retention

An Analysis of Students Enrolled Spring 2007 – Fall 2007

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Executive Summary

The purpose of this analysis was to take a preliminary look at the retention of students who complete the First Year Experience seminar (FYE). The period of analysis included Spring 2007 – Fall 2007[1]. There were two questions of primary interest: (1) what percentage of students who complete FYE return the next semester? and (2) how do the retention rates of FYE completers compare with those of students who complete other courses?

What percentage of students who complete FYE return the next semester?

- 432 freshmen enrolled in FYE between Spring 2007 and Fall 2007; 68% (n=292) of these students successfully completed the class.

- 93.2% of freshmen FYE completers (n=292) re-enrolled the next semester compared with 37.1% of freshmen who enrolled in FYE but did not complete the class (n=140).

How does the retention of FYE completers compare with that of students who complete other courses?

- 93.2% of freshmen who completed FYE re-enrolled the next semester (272 out of 292 students) compared with 68.3% of freshmen in a Control group (9,781 out of 14,320), a 24.9% retention rate difference.

- When academic and demographic differences between the FYE and Control groups were statistically controlled through a logistic regression, FYE completion predicted a 21.1% retention rate gain.

How do the retention rates of Pre-Health FYE students compare with those from an equal number of randomly-selected Pre-Health students who complete other courses?

- 92.5% of Pre-Health freshmen who completed FYE re-enrolled the next semester (74 out of 80 students) compared with 75.0% of randomly-selected Pre-Health freshmen in a Control group (60 out of 80), a 17.5% retention rate difference.

- A logistic regression that statistically controlled for a variety of academic and demographic differences between the Pre-Health FYE and Control students revealed that FYE completion was uniquely associated with a next-term retention rate gain of 29.9%.

How do the retention rates of Arts & Science FYE students compare with those from an equal number of randomly-selected Arts & Science students who complete other courses?

- 93.8% of Arts & Science freshmen who completed FYE returned the following semester (90 out of 96 students) compared with 60.4% of randomly-selected Arts & Science freshmen in a Control group (58 out of 96), a 33.4% retention rate difference.

- When other academic and demographic variables were statistically controlled, FYE completion was associated with a next-term retention rate difference of 31.6%.

[1] Spring 2008 and Summer 2008 data were not included in this analysis because retention data were not yet available at the time of the analysis. Retention data for these terms will be available 30 days after the Fall 2008 semester.

Study Limitations and Questions for Future Research

- The present analyses are based only on the 292 students who completed FYE between Spring 2007 and Fall 2007, the first year that FYE was available. The characteristics of students who take the class will likely change as the course continues to expand. Subsequent retention rates will likely vary from those reported here. Therefore, present results are still very preliminary.

- This study only examines retention rates of students one term after they complete FYE. As more data become available, it will be important to look at long-term persistence and completion as well as other outcomes such as grades, satisfaction, and engagement.

- Present results may be affected by a self-selection bias. Students who enrolled in FYE chose to do so and may have characteristics that make them different than students who did not enroll in FYE. These characteristics may be contributing to the retention rate differences observed between FYE and Control students in this report.

- Analyses presented in this report are correlational in nature and do not imply causality. Because students self-selected to participate in FYE (and were not randomly-chosen to participate), it cannot be inferred that FYE completion causes higher retention. Instead, it can only be concluded that FYE completion is correlated (or associated) with higher retention.

Background & Purpose

As part of a Title III Strengthening Institutions grant from the U.S. Department of Education, Owens Community College has initiated a comprehensive retention effort aimed at students in their first 30 earned college credit hours. One grant initiative is a First Year Experience seminar (FYE) designed to help students transition to college by familiarizing them with key concepts/terms, introducing them to the college culture, and providing them with tools and skills that will help them to be successful students. The FYE course was introduced as an elective in the Spring of 2007 and became a requirement for all new Arts & Science students beginning with the 2008-2009 academic year.

The purpose of this analysis was to take a preliminary look at the retention of students who complete FYE. There were two questions of primary interest: (1) what percentage of students who complete FYE return the next semester? and (2) how do the retention rates of FYE completers compare with those of students who complete other courses?

STUDY 1

Methodology

Data

Data were drawn from the *Retention Database* created and maintained by the Office of Institutional Research. This database includes demographic, financial, program, and course enrollment data on students as of 30 days after the end of the term dating from Fiscal Year 2002 forward.

Sample

The primary sample included freshmen enrolled in FYE 121 during the Spring, Summer, or Fall of 2007. The control sample included freshmen who had never enrolled in FYE, but who successfully completed at least one course during the same time period. Successful completion was defined as receiving a grade of A, B, C, or D.

The analysis was conducted in the Summer of 2008. Data from students enrolled during Spring and Summer 2008 were not included because Fall 2008 retention data were not yet available at the time of the analysis.

Definition of Retention

For FYE students, next-term retention was defined as enrollment in at least one course during the semester immediately following FYE enrollment, with a special exception for summer. That is, a student was counted as retained if they took FYE in the spring and re-enrolled either summer or fall, if they took FYE in the summer and returned fall, or if they took FYE in the fall and returned spring. Next-term retention for Control students was defined as enrollment in at least one course during the semester immediately following the first term in which they successfully completed at least one course between Spring 2007 and Fall 2007 (again with a special exception for summer).

Data Limitations

Before presenting analyses and results, it is important to note that there are a number of limitations to the data that qualify any conclusions that may be drawn. First, because FYE is still relatively new, there is a limited amount of data available to analyze. Analyses presented here are based only on the 292 students who completed FYE during the first year that it was offered (Spring 2007 – Fall 2007). Therefore, results are still very preliminary. Second, and again because FYE is still relatively new, not enough time has lapsed to look at the long-term persistence or degree/certificate completions of FYE students. At this point, the best measure of retention available is next-term retention. Third, results may be affected by a self-selection bias. That is, students who enrolled in FYE chose to do so, and therefore, may have characteristics that make them different than students who did not elect to take FYE (e.g., they may be more motivated). These differences may be contributing to any retention rate differences observed between FYE and Control students. Fourth, analyses presented here are correlational in nature and do not imply cause. Because we did not conduct an experiment in which students were randomly-assigned to conditions, we can not infer that FYE is causing an effect on retention. The best that we can conclude is that FYE is correlated with some pattern of retention.

Results

What percentage of students who completed FYE returned the next semester?

A total of 432 freshmen enrolled in FYE 121 between Spring 2007 and Fall 2007. As can be seen in Table 1, 292 of these students successfully completed the class (68%) and 140 did not (32%). Of those who completed the class, 93.2% re-enrolled the next semester; of those who did not complete the class, 37.1% re-enrolled.

Table 1. Term-to-Term Retention of Freshmen FYE Completers and Non-Completers

	Completer	Non-Completer
# Retained	272	52
Total	292	140
% Retained	**93.2%**	**37.1%**

How do the retention rates of FYE completers compare with those of students who complete other courses?

The retention rates of FYE completers were compared with those from a control group of freshmen who had never taken FYE but who had successfully completed at least one course during the same time period as the FYE group (Spring 2007 – Fall 2007). As shown in Table 2, a significantly higher percentage of freshmen FYE completers returned the next semester (93.2%) than Control completers (68.3%), $\chi^2 = 82.31$, $p < .001$.

Table 2. Term-to-Term Retention of Freshmen FYE Completers and Control Completers

	FYE	Control
# Retained	272	9,781
Total	292	14,320
% Retained	**93.2%**	**68.3%**

Table 3. Characteristics of Freshmen FYE Completers and Control Completers

	Percent		Count	
Gender	**FYE**	**Control**	**FYE**	**Control**
Female	64%	40%	188	5,702
Male	36%	60%	104	8,618
Ethnicity				
American Indian/Alaska Native	0%	1%	0	95
Asian	1%	1%	2	142
Black, non-Hispanic	14%	10%	40	1,390
Hispanic	7%	4%	19	552
Not Hispanic or Latino	0%	0%	0	6
Native Hawaiian or Pacific Islander	0%	0%	0	17
Unknown	5%	5%	13	672
White, non-Hispanic	75%	80%	218	11,446
Campus				
Findlay	31%	17%	89	2,481
Toledo	70%	83%	203	11,839
School				
Arts & Sciences	33%	29%	96	4,126
Business & Information Systems	20%	11%	58	1,606
Health Sciences	35%	16%	102	2,328
Technology	6%	7%	18	1,031
Public Safety & Emergency Preparedness	5%	8%	13	1,201
Workforce & Community Services	1%	28%	4	3,981
None Assigned	0%	0%	1	47
Student Type				
Continuing	12%	48%	35	6,936
First Time	80%	32%	233	4,558
Guest	0%	0%	0	4
Non-Matriculating	0%	6%	0	832
Transfer	8%	14%	24	1,990
First Generation				
Yes	47%	21%	138	3,066
No	53%	79%	154	11,254
Grants				
Yes	43%	21%	126	2,947
No	57%	79%	166	11,373
Loans				
Yes	55%	24%	161	3,450
No	45%	76%	131	10,870
Scholarships				
Yes	21%	2%	61	327
No	79%	98%	231	13,993
Average Credit Hours	12.5	7.4	292	14,320
Average Age	21.3	26.6	292	14,320
Averate ACT English	16.6	18.8	163	4,125
Average ACT Math	17.7	19.2	163	4,126
Average ACT Reading	17.9	20.1	163	4,126
Average Compass Math	39.0	69.5	185	4,940
Average Compass Writing	56.1	69.5	185	4,940
Average Compass Reading	76.2	82.5	182	4,896
Total Dev Ed Hours	6.8	2.7	292	14,320
Term GPA	2.9	2.9	292	14,320

However, as illustrated in the shaded rows of Table 3, FYE and Control students differ on several characteristics other than their FYE enrollment. The FYE group has a higher proportion of females, a higher proportion of students from the Findlay campus, a higher percentage of students from the schools of Business & Information Systems and Health Sciences, a higher percentage of first-time students, a higher percentage of first generation students, a higher percentage of students on financial aid, a higher number of attempted credit hours (e.g., more full-time students), younger students, more previously completed developmental hours, and lower ACT and Compass scores. Many of these characteristics on which the FYE and Control groups were found to differ have been identified as significant predictors of retention in a number of published studies (e.g., Beeson & Wessel, 2002; Braunstein, McGrath, & Pescatrice, 2001; Caison, 2005, 2006; DesJardins, Kim, & Rzonca, 2003; Murtaugh, Burns, & Schuster, 1999; Perna, 1998; Tinto, 2004). Therefore, it cannot be concluded whether the difference in retention rates between FYE and Control students is associated with students' completion of FYE or perhaps to one of these other academic and demographic variables.

To control for academic and demographic differences between FYE and Control students and to identify the unique prediction of FYE to retention, a logistic regression was performed. Logistic regression is a multivariate statistical technique that is used to predict a dichotomous outcome (e.g., retained vs. not retained) based on multiple predictor variables (e.g., age, gender, etc.; Fox, 1997; Hair, Anderson, Tatham, & Black, 1995; Menard, 1995) and is widely used in medical research and the social sciences, including research on student retention (e.g., Braunstein et al., 2001; Caison, 2005, 2006; DesJardins, et al., 2003; Hendel, 2006; Fike & Fike, 2008; Schnell, Louis, & Doetkott, 2003).

In the present logistic regression analysis, the outcome variable was next-term retention (retained vs. not retained) and predictor variables included FYE (FYE completer vs. Control completer), gender, campus, school, student type (e.g., continuing, first-time, etc.), first generation status, grant recipient (yes vs. no), loan recipient (yes vs. no), scholarship recipient (yes vs. no), age, ACT English score, ACT math score, ACT reading score, Compass math score, Compass reading score, Compass writing score, total number of previously completed developmental hours, and current attempted hours. Because most students did not have both ACT and Compass scores, mean replacement was used for students with missing values (Hair et al., 1995).

Tests of model fit, indicated that the logistic regression model was a good fit to the data, $\chi^2 = 3{,}338.23$, $p < .001$ and explained 29% of the total variance in retention. Moreover, the odds-ratio of 5.38 for the FYE variable revealed that FYE completion was a significant predictor of next-term retention when all other predictor variables in the model were statistically controlled, $p < .001$.

In order to put into context the unique prediction of FYE to retention, an adjusted retention rate difference was calculated that reflects the difference in retention rates between the FYE and Control groups after differences in academic and demographic characteristics are statistically controlled. This was done by comparing the odds ratio for the FYE variable from the logistic regression analysis with the odds ratio for the FYE variable before the logistic regression was conducted (a beginning odds ratio).

The odds-ratio is a measure of the magnitude of the difference in odds of being retained between two groups, where the odds reflect the probability of an event occurring to it not occurring:

$$\text{Odds ratio} = \frac{\text{(prob. of event for group A) / (1 – prob. of event for group A)}}{\text{(prob. of event for group B) / (1 – prob. of event for group B)}}$$

Using this formula, the beginning odds ratio for the FYE variable was calculated as follows:

$$\text{Beginning Odds ratio} = \frac{(.932 / .068)\ (\text{FYE})}{(.683 / .317)\ (\text{Control})} = 6.36$$

If a beginning odds ratio of 6.36 results in a 24.9% retention rate difference, then the odds ratio of 5.38 for the FYE variable from the logistic regression can be used to calculate an adjusted retention rate difference by solving the following algebraic equation:

$$\frac{6.36}{5.38} = \frac{24.9\%}{X}$$

This equation results in an adjusted retention rate difference of 21.1%. Therefore, while the actual difference in retention rates between FYE and Control completers is 24.9%, if the two groups did not differ on any of the other seventeen academic and demographic characteristics that were examined, then it can be estimated that a retention rate difference of 21.1% would be observed.

STUDY 2

Results from the logistic regression analysis presented above suggest that FYE completion is associated with a higher retention rate than completion of other courses. However, two concerns that could be raised about this analysis are that (1) there were far more students in the Control group (n=14,320) than the FYE group (n=292), and (2) Health Science FYE and Control students were not matched on their pre-health vs. admitted-health status for selective programs. This second issue is particularly important given that 102 (or 35%) of FYE completers were from the School of Health Sciences, the highest number of any school. Therefore, two additional analyses were attempted: one comparing the next-term retention rates of Pre-Health FYE students with an even number of randomly-selected Pre-Health Control students, and one comparing the next-term retention rates of Admitted-Health FYE students with an even number of randomly-selected Admitted-Health Control students.

Data

Freshmen Pre-Health and Admitted-Health[1] students who completed at least one course on the Toledo-area campus between Spring 2007 and Fall 2007 were identified from the *Retention Database.* Only students from the Toledo-area campus were included in this analysis in order to attempt to create the most homogenous groups for comparison as possible. Students were assigned to the FYE group if they had completed FYE during that time period (n = 81); and students were assigned to the Control group if they had never enrolled in FYE but had successfully completed at least one other course during that time period (n = 1,871).

Results

To begin, a crosstab of FYE and Control students enrolled in Pre-Health vs. Admitted-Health programs was conducted. This analysis (included in Table 4 below) revealed that only 1 FYE student (or 1.2%) and 33 Control students (1.8%) were enrolled in an Admitted program. This outcome suggests that results of the initial logistic regression analysis were not due to a disproportionate number of Pre-Health or Admitted-Health students in the FYE or Control groups. In addition, the small number of Admitted-Health students does not permit a matched-control analysis at this time.

Table 4. Number and percentage of pre-health vs. admitted-health students in the Toledo sample

			FYE_Control		
			Control	FYE	Total
PRE_VS_ADMIT	A	Count	33	1	34
		% within FYE_Control	1.8%	1.2%	1.7%
	P	Count	1838	80	1918
		% within FYE_Control	98.2%	98.8%	98.3%
	Total	Count	1871	81	1952
		% within FYE_Control	100.0%	100.0%	100.0%

To analyze data from the Pre-Health students, a randomly-selected group of 80 Pre-Health Control students was identified using the random number function in Excel. Please note that while this "Matched" Pre-Health Control group is matched on students' pre-health vs. admitted-health-program status and on sample size; no attempt was made to match students on any other academic or demographic characteristics. A chi-square analysis was conducted comparing the percentage of retained Pre-Health FYE students with that of students in the Matched Pre-Health Control group. This analysis, which is depicted at the top of Table 5 on the next page, indicated that the Pre-Health FYE next-term retention rate was significantly higher (92.5%) than the Matched Pre-Health Control group (75.0%), $x^2(1) = 9.00$, $p = .003$.

However, as also can be seen in Table 5, additional chi-square and t-test analyses revealed that students in the Pre-Health FYE and Matched Pre-Health Control groups also differed significantly on eight other academic and demographic variables (shaded in gray). Therefore, at this point, it cannot be concluded whether the significant difference in retention rates between the Pre-Health FYE and Matched Pre-Health Control groups is related to students' completion of FYE or to one of these other academic and demographic differences.

Several attempts were made to try to match an equal number of Pre-Health FYE and Pre-Health Control students on as many academic and demographic characteristics as possible. However, these attempts were not successful in reducing the number of differences between the two groups.

To control for these academic and demographic differences statistically, a logistic regression analysis was conducted with next-term retention as the outcome variable and FYE, student type, scholarships, age, attempted credit hours, completed developmental education hours, and Compass reading, writing, and math scores as predictor variables. Results of this analysis revealed that FYE completion was a significant independent predictor of Pre-Health students' next-term retention, *Exp(B)* = 7.02, $p = .02$, and was associated with a 29.9% increase in retention rates.

Table 5. Characteristics of Pre-Health FYE and Matched Pre-Health Control students

	Pre-Health FYE	**Matched Pre-Health Control**	**Inferential Statistics**
Retained	92.5% (n = 74)	75.0% (n = 60)	$X^2(1) = 9.00$, $p = .003$
Student Type			$X^2(2) = 26.14$, $p < .001$
Continuing	17.5% (n = 14)	43.8% (n = 35)	
First Time	76.2% (n = 61)	36.2% (n = 29)	
Transfer	6.2% (n = 5)	20.0% (n = 16)	
Scholarship	27.5% (n = 22)	1.2% (n = 1)	$X^2(1) = 22.39$, $p < .001$
Ethnicity			$X^2(5) = 5.24$, $p = .387$
American Indian	0.0% (n = 0)	1.2% (n = 1)	
Asian	1.2% (n = 1)	0.0% (n = 1)	
Black	16.2% (n = 13)	21.2% (n = 17)	
Hispanic	7.5% (n = 6)	7.5% (n = 6)	
White	70.0% (n = 56)	58.8% (n = 47)	
Unknown	5.0% (n = 4)	11.2% (n = 9)	
Gender			$X^2(1) = 0.91$, $p = .339$
Female	90.0% (n = 72)	85.0% (n = 68)	
Male	10.0% (n = 8)	15.0% (n = 12)	
Major			$X^2(14) = 21.34$, $p = .093$
Pre-Culinary Arts Program	7.5% (n = 6)	0.0% (n = 0)	
Pre-Computed Tomography Certificate	0.0% (n = 0)	1.2% (n = 1)	
Pre-Dental Hygiene Program	11.2% (n = 9)	7.5% (n = 6)	
Pre-Dietetic Technology	1.2% (n = 1)	2.5% (n = 2)	
Pre-Health Information Technology	0.0% (n = 0)	1.2% (n = 1)	
Pre-Nursing (LPN/AND) Program	3.8% (n = 3)	6.2% (n = 5)	
Pre-Medical Assisting Program	2.5% (n = 2)	2.5% (n = 2)	
Pre-Medical Coding Certificate	0.0% (n = 0)	1.2% (n = 1)	
Pre-Massage Therapy Program	2.5% (n = 2)	3.8% (n = 3)	
Pre-Nursing Program	23.8% (n = 19)	40.0% (n = 32)	
Pre-Occupational Therapy Program	5.0% (n = 4)	1.2% (n = 1)	
Pre-License Practical Nursing Certificate	3.8% (n = 3)	6.2% (n = 5)	
Pre-Physical Therapist-Web	16.2% (n = 13)	6.2% (n = 5)	
Pre-Radiologic Technologies	21.2% (n = 17)	16.2% (n = 13)	
Pre-Surgical Program	1.2% (n = 1)	3.8% (n = 3)	
Admit Type			$X^2(6) = 4.41$, $p = .662$
Personal Interest	3.8% (n = 3)	5.1% (n = 4)	
Upgrade Skills	0.0% (n = 0)	1.3% (n = 1)	
Obtain a New Job	0.0% (n = 0)	2.5% (n = 2)	
Transfer	3.8% (n = 3)	1.3% (n = 1)	
Certificate	2.5% (n = 3)	3.8% (n = 3)	
Degree Needed to Transfer	1.3% (n = 1)	1.3% (n = 1)	
Degree Needed for Job	88.6% (n = 70)	84.8% (n = 67)	
First Generation	46.2% (n = 37)	43.8% (n = 35)	$X^2(1) = .101$, $p = .751$
Grant	41.2% (n = 33)	48.8% (n = 39)	$X^2(1) = .909$, $p = .340$
Loans	62.5% (n = 50)	56.2% (n = 45)	$X^2(1) = .648$, $p = .421$
Ave. Age	19.85 (n = 80)	25.80 (n = 80)	$t(1) = -5.61$, $p < .001$
Ave. Attempted CH	12.80 (n = 80)	9.74 (n = 80)	$t(1) = 5.34$, $p = .001$
Ave. Dev. Ed Hours	7.26 (n = 80)	4.76 (n = 80)	$t(1) = 3.07$, $p = .003$
Ave. Compass Reading	73.08 (n = 38)	81.78 (n = 49)	$t(1) = -2.80$, $p = .006$
Ave. Compass Writing	57.65 (n = 40)	70.04 (n = 49)	$t(1) = -2.17$, $p = .033$
Ave. Compass Math	38.15 (n = 39)	70.04 (n = 49)	$t(1) = -6.73$, $p < .001$
ACT Reading	17.72 (n = 57)	19.62 (n = 32)	$t(1) = -1.82$, $p = .076$
ACT English	16.44 (n = 57)	17.56 (n = 32)	$t(1) = -1.04$, $p = .300$
ACT Math	17.58 (n = 57)	17.62 (n = 32)	$t(1) = -0.06$, $p = .950$

STUDY 3

Results from Study 2 buttress results of the initial analysis to suggest that, during the first year that the course was offered, FYE completion was associated with higher next-term retention rates. In Study 1, it was found that students who completed FYE between Spring 2007 and Fall 2007 were more likely to be retained one semester later than students who completed other courses during the same time period. In Study 2, the same pattern of results was obtained for a subpopulation of equally-numbered Pre-Health FYE and Pre-Health Control students. In Study 3, the relation between FYE completion and retention was explored further by examining the next-term retention rates of an equal number of FYE and Control students from the School of Arts & Sciences, the school with the second highest number of FYE completers between Spring 2007 and Fall 2007 (n=96). Similar analyses were not performed for the other schools due to their small number of FYE completers during the study period (Business & Information Systems, n=58; Technology, n=18; Public Safety & Emergency Preparedness, n=13; Workforce & Community Service, n=4).

Data

Freshmen Arts & Science students who completed at least one course on either the Toledo- or Findlay-area campus between Spring 2007 and Fall 2007 were identified from the *Retention Database.* Students were assigned to the FYE group if they had completed FYE during that time period (n=96); and students were assigned to the Control group if they had never enrolled in FYE but had successfully completed at least one other course during that time period (n=4,126).

Results

A randomly-selected group of 96 Arts & Science Control students was identified using the random number function in Excel. A chi-square analysis was conducted comparing the percentage of retained Arts & Science FYE students with that of students in the Arts & Science Control group. This analysis, which is included in Table 6 on the next page, indicated that the Arts & Science FYE group had a significantly higher next-term retention rate (93.8%) than the Arts & Science Control group (60.4%), $x^2(1) = 30.19$, $p < .001$.

As depicted in the shaded rows of Table 6, however, follow up chi-square and t-test analyses revealed that Arts & Science FYE and Control students also differed on ten other academic and demographic variables. Therefore, it cannot be concluded from the analyses conducted thus far whether the higher retention rate for Arts & Science FYE students is related to their completion of FYE or to one of these other academic and demographic variables.

To control for these academic and demographic differences statistically, a logistic regression analysis was conducted with next-term retention as the outcome variable and FYE, student type, admit type, campus, scholarships, age, attempted credit hours, completed developmental education hours, and Compass reading, writing, and math scores as predictor variables. Results of this analysis revealed that FYE completion was a significant independent predictor of Arts & Science students' next-term retention, $Exp(B) = 9.39$, $p = .002$, and was associated with a 31.6% increase in retention rates.

Table 6. Characteristics of Arts & Science FYE and Arts & Science Control students

	Arts & Science FYE	Arts & Science Control	Inferential Statistics
Retained	93.8% (n = 90)	60.4% (n = 58)	$X^2(1) = 30.19$, $p < .001$
Student Type			$X^2(3) = 53.75$, $p < .001$
Continuing	7.3% (n = 7)	39.6% (n = 38)	
First Time	84.4% (n = 81)	33.3% (n = 32)	
Transfer	8.3% (n = 8)	20.8% (n = 20)	
Non-Matriculating	0.0% (n = 0)	6.2% (n = 6)	
Scholarship	14.6% (n = 14)	5.2% (n = 5)	$X^2(1) = 4.73$, $p = .03$
Ethnicity			$X^2(4) = 3.36$, $p = .50$
Asian	1.0% (n = 1)	0.0% (n = 0)	
Black	8.3% (n = 8)	10.4% (n = 10)	
Hispanic	3.1% (n = 3)	6.2% (n = 6)	
White	83.3% (n = 80)	76.0% (n = 73)	
Unknown	4.2% (n = 4)	7.3% (n = 7)	
Gender			$X^2(1) = 3.55$, $p = .06$
Female	61.5% (n = 59)	47.9% (n = 46)	
Male	38.5% (n = 37)	52.1% (n = 50)	
Major (28 different majors represented)			$X^2(27) = 37.14$, $p = .09$
Admit Type			$X^2(6) = 25.57$, $p < .001$
Personal Interest	31.2% (n = 30)	15.8% (n = 15)	
Upgrade Skills	5.2% (n = 5)	10.5% (n =10)	
Obtain a New Job	4.2% (n =4)	7.4% (n = 7)	
Transfer	14.6% (n = 14)	30.5% (n = 29)	
Certificate	1.0% (n = 1)	8.4% (n = 8)	
Degree Needed to Transfer	6.2% (n = 6)	9.5% (n = 9)	
Degree Needed for Job	37.5% (n = 36)	17.9% (n=17)	
First Generation	35.4% (n = 34)	30.2% (n = 29)	$X^2(1) = 0.59$, $p = .44$
Grant	39.6% (n = 38)	30.2% (n = 29)	$X^2(1) = 1.86$, $p = .17$
Loans	43.8% (n = 42)	35.4% (n = 34)	$X^2(1) = 1.39$, $p = .24$
Ave. Age	20.69 (n = 96)	24.56 (n = 96)	$t(190) = -3.56$, $p < .001$
Ave. Attempted CH	12.45 (n = 96)	8.57 (n = 96)	$t(190) = 6.98$, $p < .001$
Ave. Dev. Ed Hours	5.89 (n = 96)	2.72 (n = 96)	$t(190) = 4.83$, $p < .001$
Ave. Compass Reading	76.49 (n = 55)	84.90 (n = 42)	$t(95) = -3.10$, $p = .003$
Ave. Compass Writing	59.80 (n = 55)	71.27 (n = 44)	$t(97) = -2.17$, $p = .03$
Ave. Compass Math	43.04 (n = 55)	71.27 (n = 44)	$t(97) = -6.27$, $p < .001$
ACT Reading	18.90 (n = 50)	18.80 (n = 35)	$t(83) = 0.10$, $p = .92$
ACT English	18.02 (n = 50)	18.77 (n = 35)	$t(83) = -0.77$, $p = .44$
ACT Math	18.52 (n = 50)	19.31 (n = 35)	$t(83) = -0.98$, $p = .33$

Summary, Limitations, and Questions for Future Research

Results of the present studies revealed that the next-term retention rates of students who completed FYE during its first year of implementation (Spring 2007 – Fall 2007) were between 21% and 31% higher than those of students who completed other courses. These results do not appear to be related to other academic or demographic characteristics of FYE completers and reflects the available data in their entirety as well as subsets of data from Pre-Health and Arts & Science students.

One limitation of the present study is that, because FYE is still relatively new, it is based on only the 292 students who completed FYE during the first year that it was offered (Spring 2007 – Fall 2007). Since that time, FYE has been greatly expanded and is now required of all Arts & Science majors. With this expansion, there are likely to be changes in the characteristics of students who take the class and retention rates may fluctuate widely in future semesters. Therefore, results should be interpreted as still very preliminary at this time.

A second limitation of the present analysis is that it only involves an examination of retention one-semester after completing FYE. Enough time has not lapsed since FYE was introduced to look at the long-term persistence or degree/certificate completions of FYE students. However, it will be important to look at these and other outcomes (such as grades, satisfaction, and engagement, etc.) as the data become available.

A third limitation is that results may be affected by a self-selection bias. Students who enrolled in FYE chose to do so, and therefore, may have other characteristics that make them different than students who did not elect to take FYE (e.g., they may be more motivated). These differences may be contributing to the retention rate differences observed between FYE and Control students and cannot be ruled out without conducting a controlled experiment in which students are randomly-selected to participate in FYE.

Fourth, analyses presented here are correlational in nature and do not imply cause. Again, because we did not conduct an experiment in which students were randomly-assigned to conditions, we can not infer that FYE is causing an effect on retention. The best that we can conclude is that FYE is correlated with higher retention rates at this time.

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