

A COMPARISON OF FIRST GENERATION AND CONTINUING GENERATION STUDENTS AT FRESNO STATE

INTRODUCTION

Purpose

Nationally, first generation students (FGS) tend to be less academically prepared for college and have lower rates of academic success than continuing generation students (CGS) (Choy, 2001; Chen, 2005). This study seeks to determine if these characteristics hold true at Fresno State by comparing and contrasting our FGS and CGS populations.

Methodology

As is the standard practice, first generation and continuing generation status was determined by parental education level. In the literature, FGS is defined in multiple ways, most commonly as neither parent attended college or as neither parent earned a Bachelor's degree. In this study, students for whom neither parent had earned a Bachelor's degree are coded as first generation students (FGS). Those students for whom at least one parent had earned a four-year degree or higher were classified as continuing generation students (CGS). Students who did not have a response for either parent were eliminated from the analysis. If only one parent's education was reported, that value was used to classify the student as FGS or CGS. This determination was made based on evidence that more than 50% of the time, both parents had an equivalent education.

For various reasons, different student populations were used for each component of this research and, in most instances, descriptive statistics show the similarities and differences between groups. Demographic comparisons were made for all first-time freshmen and undergraduates where values were available. Academic preparation data utilized all first-time freshmen in order to correspond with the demographic data. High School GPA, SAT and EPT and ELM Scores are collected for new first-time freshmen only. For the student activity data, a sample of freshmen and seniors were surveyed in spring 2007 using the National Survey of Student Engagement (NSSE) instrument. Data from this survey were analyzed using an independent samples t-test. For the academic success measures, the research population includes new transfer students and students who entered as first-time full-time freshmen. The decision to utilize full-time freshmen only was made in order to correspond with standard methodologies or definitions required for federal reporting and used in previous Fresno State retention and graduation research. The number of new part-time freshmen is small (Fall 2008, N=91) and therefore unlikely to substantially change the mean, rates and patterns. Finally, although many of the comparisons are shown for a single year only, the patterns exist across multiple years. Multiple cohorts are shown for retention and graduation rates since these data are routinely tracked as performance measures in Fresno State's strategic plan.

DEMOGRAPHICS

Ethnicity (Table 1)

For first time freshmen and all undergraduates, Hispanic students were the most likely to be first generation and White students were the least likely. American Indians, African Americans, and Asians too are highly likely to be FGS.

Gender (Table 1)

There is no difference in gender between FGS and CGS. Both males and females are more likely to be FGS, but a slightly higher proportion of females than males are FGS.

Table 1								
Ethnicity and Gender of First and Continuing Generation Undergraduates								
Fall 2008								
	New Freshmen				All Undergraduate			
	First Generation		Continuing Generation		First Generation		Continuing Generation	
	#	%	#	%	#	%	#	%
Ethnicity								
Amer Indian	13	76%	4	24%	99	70%	43	30%
Asian	358	78%	101	22%	1738	74%	600	26%
Black	175	71%	71	29%	717	69%	320	31%
Hispanic	816	85%	139	15%	4668	85%	792	15%
Unknown	74	57%	56	43%	614	55%	506	45%
White	372	45%	457	55%	2572	46%	3010	54%
Sex								
Female	1102	71%	457	29%	6265	69%	2785	31%
Male	706	66%	371	34%	4143	62%	2486	38%

Note: There were 168 first time freshmen and 3566 undergraduate students who did not respond to parent education level questions resulting in them being excluded from the analysis.

ACADEMIC PREPARATION

SAT Scores (Table 2)

For first time freshmen, CGS averaged both a higher verbal and mathematics SAT score than FGS. The CGS SAT Comprehensive score averaged over 100 points higher than the FGS score. Continuing generation students were nearly twice as likely to take the SAT as first generation students. Taking the SAT usually is an indicator that students are anticipating enrolling in college and likely they are applying at multiple higher education institutions. Fresno State does not require the SAT for undergraduate admission. Therefore, it is plausible that either FGS were not planning early to attend college or that they intended only to apply locally or at other institutions that also do not require the SAT.

Table 2						
SAT Scores for First-time Freshmen*						
Fall 2008						
	First Generation			Continuing Generation		
	# of Students	Average	No SAT Score	# of Students	Average	No SAT Score
SAT						
Verbal	1600	438	12%	778	498	6%
Math	1602	458	11%	778	510	6%
Comp	1602	896	11%	778	1008	6%

High School GPA (Table 3)

The average High School GPA of FGS and CGS were nearly equivalent.

Table 3				
High School GPA for Fall 2008 First-Time Freshmen*				
	First Generation		Continuing Generation	
	# of Students	Average	# of Students	Average
Avg. HS GPA	1807	3.25	824	3.31

English and Mathematics Remediation (Table 4)

FGS needed both Mathematics and English remediation at substantially higher rates than CGS.

Table 4				
Fall 2008 First-Time Freshmen* Who Needed English and Math Remediation				
	First Generation		Continuing Generation	
	#	%	#	%
English**	1261	70%	394	48%
Math**	1092	60%	351	42%

****The percentages equal the portion of the total first generation or continuing generation that needed remediation.**

ACTIVITIES STUDENTS PARTICIPATE IN WHILE ENROLLED

According to the National Survey of Student Engagement (NSSE) administered at Fresno State (Table 5), freshman and senior FGS ask questions or contribute to class discussion less often than CGS students. FGS seniors spend less time than CGS seniors talking and working with faculty members. First generation students spend more hours than CGS providing care for dependents living with them and, for freshmen, commuting to class, while spending fewer hours in co-curricular activities (e.g., organizations, campus publications, student government, intercollegiate or intramural sports). FGS freshmen spend less time relaxing and socializing than CGS freshmen, and FGS seniors spend more hours per week working for pay off campus than do CGS seniors.

In class, FGS freshmen work with other students more often than CGS freshmen do. FGS freshmen are more likely than their CGS peers to prepare two or more drafts of their paper before turning it in. Compared to CGS freshmen, FGS freshmen rate the quality of academic advising higher and are more likely to believe the university helps them thrive socially and cope with non-academic responsibilities. All of these differences are small, but statistically significant.

Table 5
Mean Comparison between FGS and CGS*

NSSE Survey Item	Group	Freshmen				Seniors			
		N	Mean	Mean Difference	Effect size**	N	Mean	Mean Difference	Effect size**
Academic and Intellectual Experiences (In your experience at your institution during the current school year, about how often have you done each of the following? 1=never, 2=sometimes, 3=often, 4=very often)									
Asked questions in class or contributed to class discussions	FGS	354	2.51	-0.272	-0.35	331	2.87	-0.190	-0.22
	CGS	187	2.78			175	3.06		
Prepared two or more drafts of a paper or assignment before turning it in	FGS	354	3.08	0.283	0.27	331	2.52	0.085	0.09
	CGS	187	2.80			175	2.43		
Worked with other students on projects DURING CLASS	FGS	353	2.67	0.166	0.21	330	2.61	0.155	0.18
	CGS	186	2.50			175	2.46		
Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment	FGS	332	2.50	0.157	0.14	321	2.87	-0.235	-0.25
	CGS	181	2.34			168	3.11		
Talked about career plans with a faculty member or advisor	FGS	333	2.01	0.061	0.07	321	2.35	-0.181	-0.18
	CGS	181	1.94			168	2.53		
Discussed ideas from your readings or classes with faculty members outside of class	FGS	333	1.76	0.028	0.03	321	1.94	-0.196	-0.22
	CGS	181	1.73			168	2.14		
Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	FGS	327	1.46	0.015	0.02	316	1.63	-0.284	-0.29
	CGS	178	1.45			167	1.91		
Had serious conversations with students of a different race or ethnicity than your own	FGS	327	2.52	-0.246	-0.26	315	2.68	-0.246	-0.26
	CGS	177	2.76			167	2.92		
Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	FGS	326	2.46	-0.288	-0.29	317	2.60	-0.206	-0.21
	CGS	177	2.75			167	2.80		
Additional Collegiate Experiences (During the current school year, about how often have you done each of the following? 1=never, 2=sometimes, 3=often, 4=very often)									
Attended an art exhibit, play, dance, music, theater, or other performance	FGS	316	1.89	-0.203	-0.23	307	1.97	0.025	0.03
	CGS	178	2.10			166	1.95		
Exercised or participated in physical fitness activities	FGS	316	2.43	-0.412	-0.41	307	2.52	-0.325	-0.35
	CGS	178	2.84			166	2.85		
Participated in activities to enhance your spirituality (worship, meditation, prayer, etc.)	FGS	316	1.78	-0.404	-0.34	307	2.00	-0.317	-0.26
	CGS	178	2.19			166	2.31		
Time Usage (About how many hours do you spend in a typical 7-day week doing each of the following? 1=0 hrs/wk, 2=1-5 hrs/wk, 3=6-10 hrs/wk, 4=11-15 hrs/wk, 5=16-20 hrs/wk, 6=21-25 hrs/wk, 7=26-30 hrs/wk, 8=more than 30 hrs/wk)									
Hours per 7-day week spent working for pay OFF CAMPUS	FGS	303	3.02	0.014	0.01	299	4.87	0.792	0.31
	CGS	173	3.01			162	4.07		
Hours per 7-day week spent participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)	FGS	303	1.71	-0.270	-0.19	299	1.71	-0.276	-0.20
	CGS	173	1.98			162	1.98		
Hours per 7-day week spent relaxing and socializing (watching TV, partying, etc.)	FGS	302	3.54	-0.382	-0.22	296	3.28	-0.235	-0.16
	CGS	173	3.92			162	3.52		
Hours per 7-day week spent providing care for dependents living with you (parents, children, spouse, etc.)	FGS	301	2.07	0.362	0.29	296	3.23	0.671	0.28
	CGS	173	1.71			162	2.56		
Hours per 7-day week spent commuting to class (driving, walking, etc.)	FGS	301	2.62	0.321	0.35	296	2.54	0.118	0.13
	CGS	173	2.30			162	2.43		
Institutional Environment (To what extent does your institution emphasize each of the following? 1=very little, 2=some, 3=quite a bit, 4=very much)									
Institutional emphasis: Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	FGS	294	2.59	0.121	0.13	291	2.54	0.315	0.35
	CGS	170	2.47			160	2.23		

NSSE Survey Item	Group	Freshmen				Seniors			
		N	Mean	Mean Difference	Effect size**	N	Mean	Mean Difference	Effect size**
Institutional emphasis: Helping you cope with your non-academic responsibilities (work, family, etc.)	FGS	293	2.23	0.202	0.23	292	1.84	0.149	0.18
	CGS	171	2.02			160	1.69		
Institutional emphasis: Providing the support you need to thrive socially	FGS	294	2.37	0.202	0.23	292	2.05	0.130	0.16
	CGS	169	2.17			159	1.92		
Institutional emphasis: Attending campus events and activities (special speakers, cultural performances, athletic events, etc.)	FGS	294	2.45	0.008	0.01	292	2.48	0.195	0.21
	CGS	171	2.44			160	2.29		
Educational and Personal Growth (To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas? 1=very little, 2=some, 3=quite a bit, 4=very much)									
Institutional contribution: Writing clearly and effectively	FGS	291	3.02	0.089	0.10	287	3.21	0.213	0.23
	CGS	166	2.93			160	3.00		
Institutional contribution: Speaking clearly and effectively	FGS	291	2.95	-0.021	-0.02	287	3.08	0.236	0.26
	CGS	166	2.97			160	2.84		
Institutional contribution: Using computing and information technology	FGS	291	2.91	0.113	0.12	287	3.25	0.179	0.18
	CGS	166	2.80			160	3.08		
Institutional contribution: Working effectively with others	FGS	291	2.99	0.120	0.13	287	3.22	0.307	0.33
	CGS	166	2.87			160	2.91		
Institutional contribution: Understanding yourself	FGS	288	2.80	0.148	0.15	286	2.76	0.243	0.23
	CGS	163	2.65			159	2.52		
Institutional contribution: Understanding people of other racial and ethnic backgrounds	FGS	288	2.77	0.194	0.21	284	2.82	0.301	0.29
	CGS	162	2.58			159	2.52		
Institutional contribution: Solving complex real-world problems	FGS	288	2.63	0.199	0.23	286	2.66	0.105	0.11
	CGS	163	2.43			159	2.56		
Institutional contribution: Developing a personal code of values and ethics	FGS	288	2.61	0.102	0.10	286	2.62	0.214	0.21
	CGS	163	2.51			159	2.41		
Institutional contribution: Contributing to the welfare of your community	FGS	287	2.33	0.153	0.16	286	2.43	0.201	0.20
	CGS	163	2.18			159	2.23		
Academic Advising (1=poor, 2=fair, 3=good, 4=excellent)									
Overall, how would you evaluate the quality of academic advising you have received at your institution?	FGS	284	2.99	0.213	0.25	287	2.86	0.034	0.04
	CGS	163	2.77			159	2.83		

** This table includes only survey items in which there are significant differences between FGS and CGS in the areas relevant to this research purpose. Independent T tests are employed and the highlighted mean differences indicate the differences are significant at the significance level of 0.05.*

*** Effect size indicates the "practical significance" of the mean difference. It is calculated by dividing the mean difference by the standard deviation of the group with which FGS students are being compared. In practice, an effect size of .2 is often considered small, .5 moderate, and .8 large. A positive sign indicates that FGS students' mean was greater, thus showing an affirmative result for FGS students.*

ACADEMIC SUCCESS

First Term GPA (Table 6)

FGS freshmen earn a lower average first-term GPA at Fresno State than do CGS freshmen. Prior research developed by Fresno State's Retention Oversight Group, an ad-hoc committee formed to investigate and make recommendations about improving retention and graduation, demonstrated that the biggest predictor of first-term GPA is high school GPA. Since FGS and CGS have nearly equivalent average high school GPAs, we would expect that their average first-term GPAs would be equivalent as well. Since this is not the case, likely additional factors are negatively impacting FGS academic success during their first semester.

Table 6					
Comparison of 1st Term GPA					
First-Time Full-Time Freshmen CGS and FGS					
	Fall 2007			Fall 2008	
	N	1st Term GPA	N	1st Term GPA	
CGS	793	2.89	813	2.90	
FGS	1760	2.62	1919	2.67	

Retention Rates (Tables 7 and 8)

Based on cohorts fall 2003 through fall 2007, CGS are consistently retained into their second year at higher rates than FGS. Although the CGS FGS difference is smaller for transfer students (Table 8) than for those who enter as new freshmen (Table 7), the pattern remains the same. The prior research that was developed by the ROG committee found that the largest predictor of first-year freshmen retention was first-term GPA. As noted above, the descriptive data in this study does show that first generation freshmen earn a lower first-term GPA on average than their CGS counterparts. Given this difference, it is no surprise that FGS retention rates are lower as well.

Table 7															
Retention Rates for First and Continuing Generation Students Entering as Freshmen															
Fall 2003-Fall 2007															
	2003			2004			2005			2006			2007		
	#	Total	%	#	Total	%	#	Total	%	#	Total	%	#	Total	%
First Gen	1256	1512	83%	1142	1359	84%	1167	1465	80%	1271	1601	79%	1323	1642	81%
Cont. Gen	694	816	85%	681	769	89%	663	766	87%	694	823	84%	675	793	85%

Table 8															
Retention Rates for First and Continuing Generation Students Entering as Transfer Students															
Fall 2003-Fall 2007															
	2003			2004			2005			2006			2007		
	#	Total	%	#	Total	%	#	Total	%	#	Total	%	#	Total	%
First Gen	824	992	83%	701	815	86%	651	787	83%	644	773	83%	703	837	84%
Cont. Gen	461	531	87%	349	403	87%	365	425	86%	398	477	83%	388	454	85%
All New Transfers	1,478	1,759	84%	1,161	1,353	86%	1,151	1,373	84%	1,162	1,387	84%	1,192	1,410	85%

Graduation Rates

For first time freshmen as well as transfer students, CGS graduate at higher rates than FGS.

Table 9

**First and Continuing Generation First-Time Freshmen Graduation Rates
Fall 1998-Fall 2002 Cohorts**

	1998				1999				2000				2001				2002			
	CGS		FGS		CGS		FGS		CGS		FGS		CGS		FGS		CGS		FGS	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Entering Cohort	375		784		481		971		511		1037		545		963		655		1093	
Four Year	75	20%	81	10%	91	19%	101	10%	91	18%	99	10%	96	18%	120	12%	149	23%	126	12%
Five Year	162	43%	241	31%	202	42%	266	27%	231	45%	305	29%	242	44%	316	33%	301	46%	326	30%
Six year	205	55%	324	41%	255	53%	373	38%	283	55%	427	41%	299	55%	430	45%	365	56%	470	43%
Six +	228	61%	404	52%	296	62%	502	52%	328	64%	541	52%	352	65%	514	53%	429	65%	588	54%

Table 10

**First and Continuing Generation Transfer Student Graduation Rates
Fall 2001-Fall 2005 Cohorts**

	2001				2002				2003				2004				2005			
	CGS		FGS		CGS		FGS		CGS		FGS		CGS		FGS		CGS		FGS	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Entering Cohort	426		871		525		1040		622		1241		473		1020		505		946	
Three Year	209	49%	419	48%	240	46%	456	44%	297	48%	520	42%	237	50%	488	48%	244	48%	433	46%
Four Year	270	63%	526	60%	325	62%	617	59%	390	63%	687	55%	298	63%	642	63%				
Six Year	306	72%	586	67%	370	70%	703	68%	427	69%	773	62%								
Six +	316	74%	610	70%	384	73%	734	71%												

Educational and Personal Growth

Although the effect is small, the data from the NSSE survey indicates that FGS seniors are more likely than CGS seniors to report that Fresno State helped them write and speak clearly and effectively, use computing and information technology, work effectively with others, understand themselves and people of other racial and ethnic backgrounds, develop a personal code of ethics and values, and contribute to the welfare of the community (Table 5). An interesting finding, in light of some of these gains, is that both FGS freshmen and seniors were less likely than CGS students to have had serious conversations with someone from a different race, ethnicity, religious, or personal values background than their own. It is also the case that FGS seniors think Fresno State emphasizes contact between such groups more than CGS seniors believe it does.

DISCUSSION AND CONCLUSION

Fresno State's first generation students do follow the national trend. Our FGS enter college less academically prepared, participate less in university-sponsored activities, and are less likely to succeed academically than their CGS counterparts. While this research concludes that FGS succeed at lower rates, the NSSE survey findings show that those FGS who do achieve senior status feel as if they have grown more educationally and personally than CGS in areas such as communication, information technology, interpersonal skills, ethics, understanding of diverse backgrounds and contributing to the welfare of the community.

Previous research, conducted as part of Fresno State's ad-hoc Retention Oversight Group (ROG), found that students who have lower high school GPAs, earn lower first-term GPAs, and subsequently are retained at lower rates. In this study, the average FGS and CGS high school GPA is equivalent yet the average FGS first-term GPA is lower than that of CGS. The ROG research found that the largest secondary influence on GPA and first-year retention is participation in support groups such as EOP and CAMP, as well as enriching educational experiences such as community service and learning communities. However, the NSSE survey concluded that FGS spend less time participating in these types of activities and that they have more responsibilities at home such as dependent care and employment.

In an effort to improve first generation students' academic success, Fresno State implemented a new program designed to provide the kind of support and educational enrichment that research shows is beneficial. The First Year Experience (FYE) project, focusing on first-generation students, began in fall 2009 with 50 students and 8 faculty members. The FYE includes pedagogical and co-curricular activities that have been shown to help students succeed; i.e., learning communities, service learning and mentoring. By tracking this project's progress, and using findings to help shape the program for future cohorts, we may find the key to ensuring success not only for our continuing generation students but also for those who are their family's first generation to attend college.

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