

Female First-Generation College Students' (FGCS) Engagement in Effective Educational Practices: Understanding Their Unique Needs

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Abstract

The main objective of the current study is to assess if there are significant differences in background (ACT scores, family income, age, enrolment status, & residency), engagement in the effective educational practices (level of academic challenge, active and collaborative learning, student-faculty interactions, enriching educational experiences, and supportive campus environment) and desired college students' outcomes (GPA, satisfaction, & gain in general education) between female FGCS and female non-FGCS. The findings of this study show that, although female FGCS and female non-FGCS statistically differ in their background, they did not statistically differ in their engagement in four of the five effective educational practices and the proposed three desired student outcomes. The paper further provides some theoretical and practical implications of the study as well as indicates a possible future research direction.

Key words: Female, first-generation, engagement, GPA, gain in general education

Introduction

A college education is considered the key to achieving economic success and social mobility in American society. To compete globally, the U.S. needs students who are academically prepared and motivated to achieve success. Although increasing the number of students who earn postsecondary degrees and credentials is essential as college graduates have a wider range of career opportunities, earn higher salaries, and tend to live longer and healthier lives (Immerwahr, 2002; Institute for Higher Education, 2012), America's global rank in college completion among young adults is declining. The U.S. has fallen from 12th [in 2009] to 16th [in 2011] in the proportion of adults age 25 to 34 holding college degrees (de Vise, 2011: 1).

Nearly one in three adults (33 percent) held a bachelor's or higher degree (Ryan & Bauman, 2016). This suggests that the U.S. is losing ground in the global knowledge economy race because the gains in postsecondary attainment for other nations have increased at a significantly faster rate than those in the U.S. (McCormick & McClenney, 2012: 307). In spite of this decline, the importance of college enrollment has increased as more and more American jobs require postsecondary degrees. According to Carnevale, Smith, & Strohl (2010), by 2018, about 63 percent of jobs in the U.S. will require postsecondary education. As a result, President Barack Obama has made it a national priority to regain our number one position in college degree attainment rates by 2020. Like the president's commitment, the College Board has a goal of obtaining 55 percent college completion (an associate degree or higher) among 25 to 34-year-old Americans by 2025 (College Board, 2012).

While there is a need to improve college completion rates across the board, a student population that must be given special attention is current and potential female first-generation college students (FGCS). Thus, the focus of this study is on female FGCS. The term FGCS refers to students who are the first in their family to attend college. According to Williams & Butler (2010: 1), FGCS are "students whose parents have either not attended college or completed a college degree".

It must be noted, generally, that the number of female college students has increased substantially (Tessema, Ready, & Malone, 2012). For example, according to Hays, Kearney, & Cogburn (2009), in 2004, 57.5 percent of bachelors degrees and 58.9 percent of masters degrees were earned by women. Women do comprise the majority of college enrollments and have recently closed longstanding gender gaps in educational attainment (Sax & Harper, 2005; DiPrete & Buchmann, 2014). Besides, the proportion of women with a college degree more than tripled from 1970 to 2007 as women increasingly attained higher levels of education (U.S. Department of Labor, 2008: 1). According to DiPrete & Buchmann (2014), back in 1960, more than twice as many men as women between the ages of 26-28 were college graduates. In 1970, only 14 percent of young women between the ages of 26 and 28 had finished college, compared to 20 percent of men. But then a dramatic change occurred. While men's college completion rates slowed, women's skyrocketed. DiPrete & Buchmann (2014) further stated that between 1970 and 2010, men's rate of B.A. completion grew by just 7 percent, rising from 20 to 27 percent in those 40 years. In contrast, women's rates almost tripled, rising from 14 percent to 36 percent. Today women also earn 60 percent of all master's degrees and more than half of all doctoral and professional degrees.

As for ethnicity, while 65 percent of white female Americans graduate within six years, only 43 percent of female Indian American, 55 percent of female Hispanic, and 45 percent of female African Americans students do (NCES, 2016). When it comes to low-income, female first-generation college students (FGCS), who are more likely to be from ethnic minorities (African American, Latino, and Indian American), the picture is much worse. About 89 percent of the low income FGCS (most of them are female) did not graduate within six years (Engle & Tinto, 2008). A recent study by the NCES (2016) also shows that, while about 34 percent of white female Americans have a bachelor or higher degrees, only about 23 percent female African American, about 16 percent female Hispanic, and about 17 percent female American Indian have a bachelor or higher degrees.

Although generally female college students are doing quite well as compared to male students, the college persistence and graduation rates of female FGCS are lower than female non-FGCS (Nunez, 2013). Many studies have been conducted on college students' engagement. However, little rigorous research assessed if there is significant difference in background (ACT scores, income, age, enrollment status, & residency), engagement in effective educational practices (level of academic challenge, active and collaborative learning, student-faculty interactions, enriching educational experiences, and supportive campus environment) and desired college students' outcomes (GPA, college satisfaction, and gain in general education) between female FGCS and female non-FGCS. Only when female FGCS are studied specifically will we be able to understand their unique needs and challenges in engaging in effective educational practices. This study, therefore, intends to fill the research gap by examining these issues using a sample of 2838 students from a mid-sized public university.

Purposes of the study

This study intends to answer the following research questions:

1. To what extent female FGCS and female non-FGCS differ in their background (ACT scores, ethnicity, family income, enrollment status, residency, and age)?
2. To what extent female FGCS and female non-FGCS differ in desired student outcomes (GPA, satisfaction, & gain in general education)?

3. To what extent female FGCS and female non-FGCS differ in their engagement in effective educational practices and learning practices?

Literature Review

Student engagement is a domain of constructs that measures both the time and energy students devote to educationally purposeful activities and how students perceive different facets of the institutional environment that facilitate and support their learning (Kuh, 2001). Student engagement, then, is a function of how the student and institution interact (Schlinsog, 2010). According to the National Survey of Student Engagement (NSSE), there are five measures or benchmarks of student engagement in effective educational practices: level of academic challenge, active and collaborative learning, student-faculty interactions, enriching educational experiences, and supportive campus environment (NSSE, 2010). In this study, *student engagement* is conceptualized as the extent to which female FGCS are engaged in the five effective educational practices identified by the NSSE. NSSE assesses the extent to which students are engaged in empirically-derived effective educational practices and benefits obtained from their college experience (Kuh, 2001; Pike, 2013). The NSSE conducts ongoing research in the U.S. in order to assess the extent to which colleges and universities are participating in educational practices that are strongly associated with high levels of learning and personal development (McCormick & McClenney, 2012). McCormick and McClenney (2012: 324) emphasized that benchmarks of effective educational practices are not latent constructs, but are summative indices of a broad range of effective educational practices. The five benchmarks of student engagement have been termed by the NSSE as clusters of effective educational practices. As demonstrated above, higher student engagement in the five effective educational practices leads to more effective student outcomes such as higher levels of academic achievement, increased levels of college satisfaction, gains in general education, persistence in school, and improved graduation rates. However, there are noticeable gaps in student engagement levels in postsecondary education, especially among different college student groups (Pike & Kuh, 2005; Tessema et al., 2014; Terenzini et al., 1996).

Prior studies revealed that FGCS were found to have low levels of engagement in effective educational practices (Asrat, 2007; Pike & Kuh, 2005; Yazzie-Mintz, 2010; Terenzini, et al., 1996). Besides, FGCS are more likely than non-FGCS to be less academically prepared for college (ACT, 2016; Brachman, 2012), to be female and come from lower socio-economic status backgrounds (Bui, 2002; Ishitani, 2006; Engle & Tinto, 2008), to interact with teachers and guidance counselors less often (Nunez & Cuccaro-Alamin, 1998), to have more negative attitudes about their academic potential and report lower academic self-efficacy (Asrat, 2007), to record low levels of academic and social integration (Nunez & Cuccaro-Alamin, 1998; Tinto, 1993; Woosley & Shepler, 2011), to have low or moderate participation in campus activities (Choy, 2001), and to be disengaged in intellectual pursuits (Pike & Kuh, 2005). In addition, FGCS experience different college outcomes than their peers and these differences include lower GPAs, reduced persistence levels, higher dropout rates, lower gains in general education, lower levels of college satisfaction overall, and higher adjustment levels to college (Pike & Kuh, 2005; Terenzini, et al., 1996).

This study uses the conceptual model that drew on elements of Astin's (1984, 1993) input-environment-output (I-E-O) model and work of Pace (1984), Chickering and Gamson (1987), Kuh et al. (1991), Tinto (1993), and Kuh (2001) (see Figure 1). The original purpose of the model was to examine the impact of environmental variables on outcomes, accounting for background characteristics (Astin, 1993). Astin's model assesses "the impact of various environmental experiences by determining whether students grow or change differently under varying environmental conditions" (Astin, 1993: 7). Astin's (1993) Input-Environment-Output assessment model assumes that student outcomes are functions of three basic elements: inputs, environment and outcomes. *Input* describes any characteristic inherent to a student or descriptor present at the time of enrollment, *environment* characteristics include anything that happens to a student during college that could affect the outcome in question, and *outcomes* are the desired aims and objectives of the educational program (Astin, 1993).

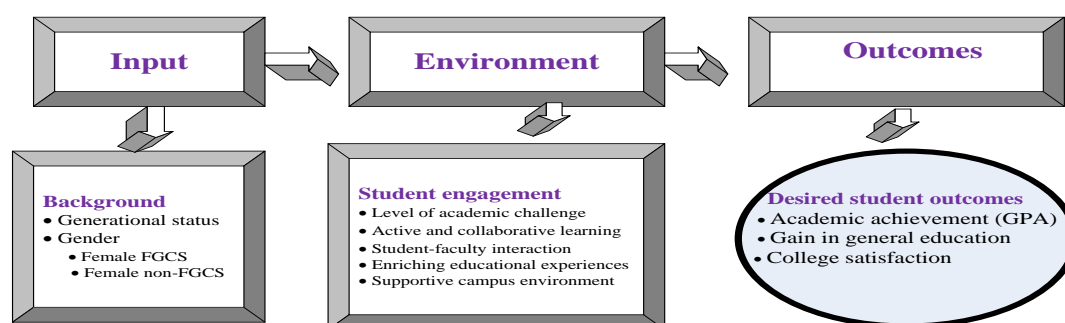


Figure 1: Adopted based on Astin's (1984, 1993) Input-Environment-Output Model

Research Methodology

Data used in this study are collected through the NSSE survey, which is a survey instrument used to gauge the level of student engagement at universities and colleges in the United States and Canada as it relates to learning. NSSE instruments were developed mainly on conceptual premises of Astin (1984), Pace (1984), and Chickering and Gamson (1987) that emphasize the quality of student effort, principles of good practices in undergraduate education and theory of student involvement as the foundation for student engagement in effective educational practices. The five benchmarks of effective educational practice are based on 42 key items from the NSSE survey that capture vital aspects of student engagement and experience (NSSE, 2012). For example, level of academic challenge (eleven-item scale), student-faculty interaction (six-item scale), active and collaborative learning (seven-item scale), enriching educational experiences (twelve-item scale) and *supportive campus environment* (six-item scale). In addition, the following measures are used: *academic achievement*, measured using actual GPA, *college satisfaction*, measured with 2 items, and *gain in general education*, measured with 4 items from the NSSE survey. The following measures are also dichotomous variables: family income (low-income or not), ethnicity (white or non), enrolment status (full time or not), and place of residence (living on campus or not).

The survey is administered to freshman- and senior-level students who have attended the institution for at least two terms. It is administered during the spring academic term. College students are asked to report the frequency with which they engage in the five effective educational practices using a simple Likert rating scale format. The NSSE has good psychometric properties in that it reliably measures educational practices that affect student outcomes (Carini et al., 2006; Kuh, 2001) and has good indicators of variance, univariate normality, internal reliability and validity (Ahlfeldt et al., 2005; Carini et al., 2006; McCormick & McClenney, 2012). Hence, it can be surmised that the NSSE data have acceptable levels of reliability and validity.

The data used in this study were based on a NSSE survey administered at a mid-sized U.S. university by the University's Institutional Planning, Assessment and Research Office in 2009 and 2011. The survey was administered during the spring term randomly to 2838 freshmen and senior-level students who had attended the institution for at least two terms. While 1,279 students responded to the survey in 2009; 1,559 students responded to the survey in 2011. 70 percent of the respondents were female, 37 percent were from low-income families, 56 percent were freshmen students, and 47 percent were first-generation students. Overall, the universe (U) profile mirrored the respondent population (R) for key demographics during the two-year survey (2009 & 2011), and students completing the survey had enough experience with the institution to render an informed judgment.

Findings

Table 1: Selected profile of sample

| Variables | | Female FGCS | | Female non-FGCS | |
|------------------|----------|-------------|------|-----------------|------|
| | | (n=946) | 100% | (n=1020) | 100% |
| College Standing | Freshman | 434 | 46 | 544 | 53 |
| | Senior | 512 | 54 | 476 | 47 |

Table 1 shows selected profile of the sample. In 2009 and 2011, 2838 students responded to the NSSE survey. Given the focus of this study, 1,966 female college students were extracted of whom 48 percent (n=946) were female FGCS and the rest 52 (n=1020) were female non-FGCS as shown in Table 1.

Table 2: Results of t-tests for female FGCS and female non-FGCS

| Variables | Female FGCS | | Female non-FGCS | | t-test | Cohen's d |
|---------------------------------|-------------|-------|-----------------|-------|---------------|--------------|
| | M | SD | M | SD | | |
| Level of academic challenge | 3.02 | 0.479 | 3.00 | 0.471 | 0.462 (.644) | 0.024 |
| Student-faculty interaction | 2.23 | 0.570 | 2.27 | 0.568 | 1.124 (.261) | 0.060 |
| Active & collaborative learning | 2.48 | 0.500 | 2.51 | 0.495 | -.869 (.385) | 0.046 |
| Supportive campus environment | 4.12 | 0.675 | 4.13 | 0.635 | -.088 (.930) | 0.005 |
| Enriching educ. experiences | 2.50 | 0.407 | 2.57 | 0.431 | -3.259 (.001) | 0.173 |
| General education | 3.17 | 0.649 | 3.17 | 0.614 | 0.203 (.839) | 0.011 |
| Satisfaction | 3.23 | 0.633 | 3.23 | 0.637 | 0.249 (.803) | 0.013 |
| GPA | 3.23 | 0.614 | 3.26 | 0.570 | -0.666 (.506) | 0.035 |
| Age | 20.05 | 2.028 | 19.77 | 1.853 | 2.762 (.006) | 0.150 |
| ACT scores | 22.55 | 2.965 | 23.66 | 3.339 | -6.639 (.000) | 0.352 |

Table 2 reports the results of t-tests of 10 variables: five effective educational practices, three desired students' outcomes, and two background variables. t-tests were conducted to determine if there are significant differences between female FGCS and female non-FGCS in the ten variables as shown in Table 2. The findings in Table 2 indicate that, female FGCS differ significantly from female non-FGCS in only three out of the ten variables: Enriching educational experiences, age, and ACT scores.

Table 3: χ^2 Results of test of independence

| Variables | χ^2 test | (P-value) |
|--------------------|---------------|--------------|
| Place of residence | 80.281 | 0.000 |
| Ethnicity | 396.461 | 0.000 |
| Enrollment status | 97.948 | 0.000 |
| Family income | 110.831 | 0.000 |

Next, we conducted χ^2 test of independence for the above four categorical variables. As depicted in Table 3, all variables were found to be statistically significant.

Discussion

The main objective of the current study is to assess if there are significant differences in background (ACT scores, income, age, enrollment status, & residency), engagement in the five effective educational practices (level of academic challenge, active and collaborative learning, student-faculty interactions, enriching educational experiences, and supportive campus environment) and desired college students' outcomes (GPA, satisfaction, & gain in general education) between female FGCS and female non-FGCS. To that objective, we have conducted a number of analyses (See Tables 1, 2, & 3).

This study shows that there are significant differences in background between female FGCS and non-FGCS (Table 3) in that, as compared to female non FGCS, female FGCS had low ACT scores, were older, enrolled as part-time, were from low-income family, live outside the campus environment, and non-white. Thus, our findings are in line with several previous studies in that, as compared to non-FGCS, FGCS tend to be ethnic minorities, female, and older (Chen, 2005; Terenzini, et al., 1996; Pike & Kuh, 2005), be less academically prepared for college (ACT, 2016; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008), have significant work and family responsibilities (Woosley & Shepler, 2011), be non-white (Lundberg, Schreiner, Hovaguimian & Miller, 2007; Green, 2015), be female (Korobova, 2012; NSSE, 2012), come from low-income families (Conley & Hamlin, 2009; Nunez & Cuccaro-Alamin, 1998; Choy, 2001; Ishtani, 2006; Engle & Tinto, 2008; Tessema et al, 2014), be enrolled as part time (Goldrick-Rab, 2006), and live outside the campus premises (Pike & Kuh, 2005; Terenzini et al., 1996). Thus, female FGCS and female non-FGCS differed significantly in terms of their characteristics/background.

The findings of this study also reveal that, although female FGCS and female non-FGCS statistically differ in background, they did not statistically differ in their engagement in four of the five effective educational practices and the three desired student outcomes (Table 2). This suggests that, generally speaking, female regardless of whether they are FGCS or not, tend to engage in the effective educational practices (See Table 2). For instance, although female FGCS have significantly low ACT scores, their college GPA is not significantly low (Table 2). One possible explanation is that, by and large, females regardless of whether they are FGCS or not, tend to be more serious and disciplined in their studies as compared to male students (Tessema et al, 2012). Females may feel more overwhelmed and be more stressed than males which could serve to fuel their commitment to perform well academically, resulting in higher grades (Sax & Harper, 2005; Carter & McClellan, 2000). Further, at college entry, female students place more value than men on the educational benefits of college (Ilias et al. 2008). According to Strayhorn and Saddler (2009), the source of gender differences extends back into the pre-college years, where women and men develop different values, confidences, aspirations, and patterns of behavior. The above findings suggest that female students may be more likely than male students to view education as a means to influence social change and advance themselves in the labor force. Green's (2015) study also noted that, for female African American college students, their racial and gender identity was a tool that was constantly used to motivate them to do better and be better, to work harder, and to always exemplify a positive model.

An interesting finding of this study is that, although female non-FGCS engage more than female FGCS in most of the five effective education practices, only one educational practice (enriching the undergraduate experience) was found to be statistically significant (Table 2). Put it differently, there was a significant difference in perceptions of female non-FGCS in enriching the undergraduate experience ($M: 2.58, SD: 0.43$) and that of female FGCS ($M: 2.5, SD: 0.41$), $t(1194) = -3.259, p = 0.001$. Enriching the undergraduate experience measures the extent to which students take advantage of college opportunities to enrich their educational experience. An enriched undergraduate experience can make learning more meaningful and, ultimately, more useful in a student's career development (NSSE, 2012). Moreover, internships, field experiences, community service, volunteer work and other related activities can provide female FGCS with opportunities to apply their knowledge. These activities are representative of an enriched undergraduate experience which is correlated with students' academic achievement and gains in general education (Carini et al., 2006; Joseph & Susan, 2002; Tessema et al, 2014). Female FGCS should be encouraged to participate in activities where they interact with individuals that hold differing values or viewpoints and/or that are different from them.

This study asserted that regardless of whether they are FGCS or not, students with low ACT scores are more likely to benefit from engagement. Previous studies asserted that student engagement had a compensatory effect for at-risk students in that it was found to have greater effect on the desired student outcomes to at risk students than non-at-risk students (Kuh, et, al., 2008; Lundberg et al., 2007; Pascarella et al., 2004). Thus, our finding can be explained by the fact that "student involvement during college is generally more important than student backgrounds or school attended when evaluating success in persisting to graduation.... High levels of student engagement are necessary for and contribute to collegiate success" (Kuh et al., 2005: 4).

Conclusions

This study concludes that, although female FGCS and female non-FGCS statistically differ in background (ACT scores, income, age, enrollment status, & residency), they did not statistically differ in their engagement in most of the effective educational practices (level of academic challenge, active and collaborative learning, student-faculty interactions, enriching educational experiences, and supportive campus environment) and the proposed three desired college students' outcomes (GPA, satisfaction, & gain in general education). Thus, an important implication of this study is that, given the effect of the engagement in the effective educational practices on the desired students' outcome, which subsequently influences college persistence and completion, colleges and universities should consider taking actions that could improve engagement of college students in general and that of the female FGCS in particular (Glazer, 2015; Kuh, 2008; Petty, 2014). For example, "NSSE surveys were designed to produce data that are meaningful and actionable... Most fundamentally, NSSE aims to transform research findings into a set of resources to help practitioners work their way through practical problems" (McCormick & McClenney, 2012: 330).

This study has important theoretical and practical implications. It can improve our understanding of the extent to which the two groups of female college students differ in their background, engagement, and desired students' outcomes. Like any survey study, this study has some limitations. First, there may be response bias although some authors have suggested the potential for common method bias should not necessarily invalidate a study's findings (e.g., Cohen-Charash & Spector, 2001). Second, this study was conducted in only one U.S. mid-sized university and thus, to generalize and validate the findings of this study, we suggest that a similar study be conducted in other universities, both in the U.S. and other parts of the world.

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