

## The Effect of Ethnic Minority College Students' Engagement in Effective Educational Practices on GPA and College Satisfaction, the Case of a Mid-Sized U.S. University

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### Abstract

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*This study assesses the extent to which five effective educational practices (level of academic challenge, active and collaborative learning, student-faculty interactions, enriching educational experiences and supportive campus environment) are correlated with two desired college outcomes: GPA and college satisfaction at a mid-sized U.S. university. All five effective educational practices identified in the model show a positive effect in explaining both college satisfaction and GPA, and altogether explain about 27 percent of the variance in college satisfaction ( $R^2=.27$ ) and about 9 percent of the variance in GPA ( $R^2=.09$ ). ANOVA tests revealed a significant difference in GPA between ethnic minority students (mean=3.11) and non-ethnic minority students (mean=3.23). Implications of these findings and future research directions are discussed.*

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**Key words:** ethnic minority, college, engagement, satisfaction, GPA

### Introduction

As the economy has become more globalized, and the United States has shifted away from manufacturing toward a knowledge-based economy, postsecondary education has become an increasingly important determinate of economic success and prosperity (Institute for Higher Education, 2012). However, 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). 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 in the U.S. (McCormick & McClenney, 2012: 307). Despite 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, 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, 2011). The national college completion rate currently is 41.1 percent. However, at the current rate of progress, only 46 percent of Americans will have a college credential by 2025 (College Board, 2011). While there is a need to improve college completion rates across the board, a student population requiring special attention is current and potential low-income ethnic minority college students, whose college completion rates continue to fall well below the average (Nunez, 2013).

Despite access, college completion rates vary significantly by racial and socio-economic groups. While approximately 62 percent of white students enrolled in college have earned bachelor's degrees within six years, only 51 percent of Hispanic and 40 percent of African American and Indian American students have similarly achieved this goal (NCES, 2013). Among low income groups, graduation rates further decline. For instance, Rampell (2013) notes that only about 1 out of 10 Americans, whose parents were in the lowest income quartile, had obtained a four-year college degree by age 24; the comparable share for people from the highest quartile was about 7 in 10. Further, Engle & Tinto's study (2008) reveals that about 89 percent of low income, first-generation college students, who are more likely to be from ethnic minorities (Hispanic, African American, and Indian American), did not graduate within six years. The above figures clearly show that there are substantial socioeconomic and racial gaps in postsecondary success, beginning with enrollment and culminating with lower graduation rates.

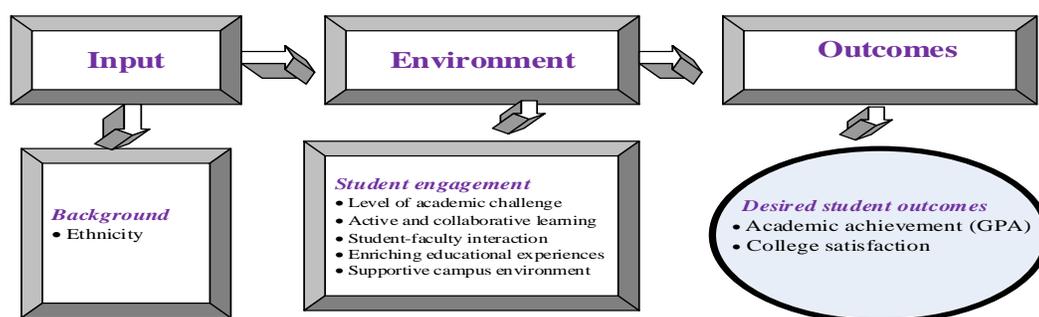
Although a number of studies have been conducted on college students' engagement, little rigorous research exists to assess the extent to which ethnic minority college students are engaged in effective educational practices and how these practices impact desired outcomes, namely achievement/GPA and satisfaction with college. This study, therefore, intends to fill the research gap by examining these issues using a sample of 2838 students from a midsized public University.

### Literature review

The focus of a small, but growing, body of research has focused on ethnic minority college students' experience during college and the effect these experiences have on their learning and development. Although student engagement is complex and multifaceted (Fredricks, Blumenfeld, & Paris, 2004), researchers have identified a number of indicators or predictors of student engagement such as student behaviors (e.g., time-on-task, attendance), student characteristics (e.g., self-efficacy), and institutional practice (e.g., class size, presence of technology) (Yazzie-Mintz, 2010). According to the National Survey of Student Engagement (NSSE, 2003), there are five measures 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. In this study, *student engagement* is conceptualized as the extent to which college students are engaged in the five effective educational practices identified by the NSSE. The NSSE survey 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 conceptual model used in the study draws on elements of Astin's (1984, 1993) input-environment-output (I-E-O) model and the work of Pace (1984), Chickering and Gamson (1987), Tinto (1993), and Kuh (2001) (see Figure 1). 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 (characteristics of the student at the time of initial entry to the institution or prior to enrollment), environment (anything that happens to a student during college as a result of various programs, policies, faculty, peers, and educational experiences to which the student is exposed), and outcomes (students' characteristics after exposure to the environment).

**Figure 1: Conceptual Framework**



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

Research on college students' engagement has indicated that engagement on effective educational practices is linked to many desired student outcomes (Astin, 1993; Carini et al., 2006; Ishitani, 2006; Pascarella & Terenzini, 2005). This study focuses on two salient outcomes: academic achievement (GPA) and college satisfaction.

### **Engagement and academic achievement (GPA)**

Academic achievement is often measured and represented by grade point average (GPA) (Astin, 1993). Although grades cannot be considered a perfect measure of student success, "GPAs are the lingua franca of the academic instructional world, the keys to students' standing and continued enrollment, to program and degree completion..." (Pascarella & Terenzini, 2005: 397). Students' GPAs are an important predictor of success in college (Pascarella & Terenzini, 2005) and are greatly influenced by involvement in the five effective educational practices (Korobova, 2012). Previous studies show that student engagement is significantly correlated with academic achievement/GPA (Fuller, et al., 2011; Carini et al., 2006; LaNasa et al., 2007; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008).

**Level of academic challenge** measures the amount of time and energy students invest in preparing for class, studying, reading, writing, rehearsing, etc., related to an academic program. Challenging intellectual and creative work is central to student learning and collegiate quality (Kuh, 2003). Prior studies show that level of academic challenge is strongly linked with academic achievement, gains in general education, persistence, and graduation (Carini et al., 2006; Pike & Kuh, 2005; Korobova, 2012). Based on the above research findings, the following hypothesis is proposed:

**H1a:** Level of academic challenge will be positively correlated with GPA.

**Active and collaborative learning** measures the extent to which students participate in class, interact with other students, and extend learning outside of the classroom. Students learn more when they are intensely involved in their education, engage in joint educational efforts with other students, are asked to think about and apply what they are learning in different settings, and collaborating with others in solving problems or mastering difficult material that helps prepare students to deal with unscripted problems they will likely encounter, both during and after college (Astin, 1993; Pascarella & Terenzini, 2005). Active and collaborative learning is linked with higher grades, gains in general education, course completion measures as well as long-term persistence and degree completion (Carini et al., 2006; McClenney, Marti & Adkins, 2010; Fuller, et al., 2011). Thus, the following hypothesis is proposed:

**H1b:** Active and collaborative learning will be positively correlated with GPA.

**Student-faculty interaction** measures the extent to which students and faculty communicate about academic performance, career plans, course content and assignments. Students learn firsthand how experts think about and solve problems by interacting with faculty members inside and outside the classroom (Astin, 1993; Kuh, 2001). The greater the quantity and quality of engagement between faculty and students, the greater likelihood the student will integrate more fully into the academic life of the institution and continue enrollment to graduation (Pascarella & Terenzini, 2005). Student-faculty interaction is related to desired student outcomes such as academic achievement, college satisfaction, and persistence (Astin, 1993; Chickering & Gamson, 1987; Pascarella & Terenzini, 2005; Carini et al., 2006; McClenney, et al., 2010; Tinto, 1993). Based on the above research findings, the following hypothesis is proposed:

**H1c:** Student-faculty interaction will be positively correlated with GPA.

**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). Additionally, internships, field experiences, community service, volunteer work and other related activities provide students 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). Thus, the following hypothesis is proposed:

**H1d:** Enriching the undergraduate experience will be positively correlated with GPA.

**Supportive campus environment** measures students' perceptions of their campus and assesses their use of advising, counseling, and other services. When students perceive their institution's environment to be supportive of their intellectual efforts, they are more likely to exhibit gains in important areas such as critical and analytical thinking as well as learning effectively (Kuh, 2001; Korobova, 2012).

Students perform better and are more satisfied at colleges that are committed to their success as well as to the working and social relations across different groups on campus (Kuh, 2008; Jenkins, Miyazaki, Janosik, 2009). Based on the above research findings, the following hypothesis is proposed:

**H1e:** Supportive campus environment will be positively correlated with GPA.

### **Engagement and college satisfaction**

Satisfaction is a well-researched topic in both academic and non-academic (workplace) settings. In academic institutions, satisfaction refers to the degree to which students are satisfied with their college experience. Student satisfaction with the college environment is vital as it “covers the students’ subjective experience during the college years and perceptions of the value of educational experience” (Astin, 1993: 273). Given the importance of student satisfaction levels at higher educational institutions, there has been a growing interest in examining factors affecting students’ satisfaction (Elliott & Healy, 2001; Peters, 1988; Billups, 2008) at both individual and organizational levels (Cranny et al., 1992; Tessema et al. 2012). Several researchers have measured the levels of student satisfaction in order to examine accountability reporting and self-improvement purposes across departments and colleges; others have examined student satisfaction to determine if satisfaction ratings of college programs and services are associated with the satisfaction of the overall college experience. Still others have investigated student satisfaction factors related to issues such as student retention and attrition. Student satisfaction is of compelling interest to colleges and universities as they seek to continually improve the learning environment for students, meet the expectations of their constituent groups and legislative bodies, and demonstrate institutional effectiveness (Eyck, Tews & Ballester, 2009; Witowski, 2008). Despite the many studies assessing college satisfaction, little research has been conducted to examine the correlations between effective student engagement practices and college satisfaction, particularly among ethnic minority students.

College satisfaction is a separate and significant educational outcome considering the time and energy students invest in attending college (Kuh, 2003). The more students engage in the five effective education practices, the more likely they are to express greater satisfaction with the university (Laanan & Zhang, 2011). As student engagement activities increase, satisfaction with the educational experience increases (Korobova, 2012; NSSE, 2013). Otsu (2008) found that overall student satisfaction with the campus was predicted by how satisfied students were with campus services and interpersonal relationships. Based on the above research findings, the following hypotheses are proposed:

**H2a:** Level of academic challenge will be positively correlated with college satisfaction.

**H2b:** Active and collaborative learning will be positively correlated with college satisfaction.

**H2c:** Student-faculty interaction will be positively correlated with college satisfaction.

**H2d:** Enriching educational experiences will be positively correlated with college satisfaction.

**H2e:** Supportive campus environment will be positively correlated with college satisfaction.

### **Engagement and ethnic minority college students**

As indicated earlier, ethnic minority college students have been found to have low levels of engagement, which in turn may lead to lower levels of GPA and college satisfaction. In addition, ethnic minority college students are more likely than non-ethnic minority college students to be less academically prepared for college (Brachman, 2012; ACT, 2013), to be female and come from lower socio-economic status backgrounds (Ishitani, 2006; Engle & Tinto, 2008, Bui, 2002), 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), to have more negative attitudes about their academic potential and report lower academic self-efficacy (Asrat, 2007), to be first-generation college students (Chen, 2005; Pike & Kuh, 2005), to interact with teachers and guidance counselors less often (Nunez & Cuccaro-Alamin, 1998), and to be disengaged in intellectual pursuits (Pike & Kuh, 2005). Ethnic minority college students experience different college outcomes than their peers; these differences include lower GPA’s, 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). Overall, these students were found to have low levels of engagement in effective educational practices (Asrat, 2007; Pike & Kuh, 2005; Yazzie-Mintz, 2010, Terenzini, et al., 1996). Thus, the following hypotheses are proposed:

**H3a:** Low-income will be negatively correlated with GPA.

**H3b:** Ethnicity will be negatively correlated with college satisfaction.

**H3c:** Low-income ethnicity minority students will more likely to have lower GPA.

**H3d:** Low-income ethnicity minority students will more likely to have lower satisfaction.

## Research design and methodology

The measures that will be used in the analyses of ethnic minority college students' engagement of the effective educational practices are the 42 items comprising the five NSSE benchmarks (level of academic challenge, student-faculty interaction, active and collaborative learning, enriching educational experiences and academic achievement) (NSSE, n.d). *The Level of Academic Challenge* is an eleven-item scale in which students report about the time they spend preparing for class, the amount of reading and writing they have done, and institutional expectations for academic performance. *The Student-Faculty Interaction* scale consists of six items where students report on the extent of their interaction and discussions with faculty members and advisors inside and outside of class; they also report on the extent of prompt feedback on academic performance and work with faculty on research projects. *Active and Collaborative Learning* is a seven-item scale measuring the extent of students' class participation, the degree to which they have worked collaboratively with other students inside and outside of class, and the amount of tutoring and number of community-based projects in which they have been involved. *Enriching Educational Experiences* is a scale with twelve items probing the extent of students' interaction with those of different racial or ethnic backgrounds or with different values or political opinions, their use of information technology, and their participation in activities such as internships, community service, study abroad, and co-curricular activities. *Supportive Campus Environment* is a six-item scale measuring the extent to which students feel that the campus helps them succeed academically and socially; assists them in coping with nonacademic responsibilities; and promotes supportive relations among students and their peers, faculty members, and administrative personnel and offices. The measures that will be used in the analyses of the proposed two desirable student outcomes include *academic achievement*, measured using actual GPA, and *college satisfaction* measured with 2 items from the NSSE survey. While the above two desirable student outcomes are treated as dependent variables, the five dimensions of effective educational practices are treated as independent variables.

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. In 2009, 1279 students responded, and, in 2011, 1559 students participated. Seventy percent of the respondents were female, 37 percent were low-income, 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. Survey questions focused on recent common experiences of student engagement. The respondents were asked to report the frequency with which they engaged in the five effective educational practices using a simple Likert rating scale format. Students also provided information about their background, such as gender, age, parent's education status (generation status), enrollment status, and race or ethnicity.

### Statistical Analysis

In conducting this study, several statistical analyses were conducted such as descriptive statistics (e.g., mean and standard deviations) and correlations, regression analysis and one way ANOVA tests.

### Results

Table 1 shows means, standard deviations, and correlations of all variables in the study. As reported in the correlation matrix of Table 1, the relationship between each of the five effective educational practices and the two desired educational outcomes (college satisfaction and GPA) as well as two demographic factors (race/ethnic and family income) are shown. Although there are positive relationships among all educational engagement practices with college satisfaction and GPA, the extent of the relationship varies. Each educational practice examined had a low to moderate positive correlation with college satisfaction (between .13 and .50) and GPA (between .15 and .26). The highest significant correlation found was between supportive campus environment and college satisfaction at .50.

The alpha coefficients for the five educational practices: Level of academic challenge, active and collaborative learning, student-faculty interactions, enriching educational experiences, and supportive campus environment were 0.77, .73, .68, .81, and 0.88 respectively, which can generally be considered satisfactory (Henson, 2001).

**Table 1: Statistical Description and Correlation Matrix**

N	Variables	Mean	SD	1	2	3	4	5	6	7	8	9
1	Level of academic challenge	3.0	.48									
2	Active & collaborat. learning	2.3	.58									
3	Student-faculty interaction	2.5	.51	.48**								
4	Enriching educ. experiences	4.1	.68	.37**	.56**							
5	Supportive campus envirtm.	2.5	.44	.34**	.27**	.38**	.24**					
6	College satisfaction	3.23	.65	.22**	.13**	.26**	.19**	.50**				
7	GPA	3.22	1.71	.20**	.23**	.17**	.26**	.15**	.10**			
8	Race/ethnicity		1.3	-.01	.05	-.04	.08**	-.08**	-.07**	-.02		
9	Family income		.48	-.05	-.02	-.03	-.05	-.02	0	-.05	-.01	

\*Correlation is significant at the 0.05 level (2-tailed); N=2838.

\*\*Correlation is significant at the 0.01 level (2-tailed); N=2838.

Table 2 shows the results of the regression analysis, which demonstrates the extent to which the 5 effective educational practices explain college satisfaction and GPA. As shown in Table 2, while all five effective educational practices identified in the model show a positive effect in explaining college satisfaction, three of the variables (student faculty interaction, enriching educational experiences, and supportive campus environment) show statistically significant positive impact in explaining college satisfaction and are greater than or equal to  $\beta=.08$ . The 5 factors altogether explain about 27 percent of the variance in college satisfaction. In addition, while all five effective educational practices identified in the model show a positive effect in explaining GPA, three measures (level of academic challenge, active and collaborative learning, and enriching educational experiences) show statistically significant positive impact in explaining college satisfaction and are greater than or equal to  $\beta=.09$ . The 5 factors altogether explain about 9 percent of the variance in GPA.

**Table 2: Results of Regression Analyses on college satisfaction & GPA<sup>a</sup>**

Variables	College satisfaction	GPA
Level of academic challenge	.05	.11***
Active and collaborative learning	.01	.09***
Student-faculty interaction	.10***	.02
Enriching educational experiences	.08***	.18***
Supportive campus environment	.46***	.00
F	87.26***	22.54***
R	.52	.29
R <sup>2</sup>	.27	.09

Notes: <sup>a</sup> Standardized Regression Coefficients are reported; \*\*\*  $p < .001$ ; N=2838.

Next, ANOVA tests were conducted as shown in Table 3, to determine if there is a significant difference between college satisfaction and GPA of the ethnic minority from non-ethnic minority (white) college students. The findings in Table 3 show that, while there is statistically significant differences in GPA of ethnic minority college students ( $M=3.11$ ,  $SD=1.6$ ) and that of the non-ethnic minority college students ( $M=3.24$ ,  $SD=1.7$ ) ( $F(1, 2,673) = 4.8$ ,  $p < 0.001$ ); there is no significant differences in college satisfaction of ethnic minority ( $M=3.21$ ,  $SD=.65$ ) and that of the non-ethnic minority college students ( $M=3.23$ ,  $SD=.64$ ).

**Table 3: Effects of race/ethnicity on college satisfaction and GPA**

Desired college outcomes	College students	Mean	SD	ANOVA test		
				t	df	Sig.
GPA	Ethnic minority students	3.11	1.6	2673)		0*
	Non-ethnic minority students	3.24	1.7			
College satisfaction	Ethnic minority students	3.21	.65	2671)		
	Non-ethnic minority students	3.23	.64			

## Discussion

This study assesses the extent to which five effective educational practices (level of academic challenge, active and collaborative learning, student-faculty interactions, enriching educational experiences, and supportive campus environment) are correlated with two desired student outcomes, namely college satisfaction and GPA. The Correlation Matrix (Table 1) showed that all five educational practices (predictor variables) examined had a low to moderate positive correlation with college satisfaction and GPA. The above findings are consistent with the predicted relationships and provide support for the model. Thus, the findings support hypotheses 1a-e and 2a-e. Further, the findings support most previous studies (e.g., McClenney, Marti & Adkins, 2010; Fuller, et al., 2011; Laanan & Zhang, 2011; Kuh et al., 2007; Korobova, 2012). The highest positive correlation was found between supportive campus environment and college satisfaction. This finding is consistent with previous research by Otsu (2008) who found that overall student satisfaction with the campus was predicted by how satisfied students were with campus services and interpersonal relationships. The correlation matrix also showed that race/ethnicity was inversely related to supportive campus environment and college satisfaction. This appears to demonstrate a greater need for supportive campus activities that are inclusive of diverse individuals as well as diverse viewpoints particularly for racial and ethnic minority students.

The regression analysis shown in Table 2 revealed that the five effective educational practices altogether explain about 27 percent of the variance in college satisfaction and about 9 percent of the variance in GPA. As previously indicated, students' college satisfaction is an important measure for both students and higher educational institutions. For college students, higher college satisfaction is crucial for it positively influences their motivation to work more in their educational activities. This is because other factors being equal, satisfied individuals are likely to be willing to exert more effort than unsatisfied individuals (Özgüngör, 2010, Tessema, et al. 2012). Hence, satisfied students (with college experience) are likely to exert more effort in their educational studies by becoming more involved in their coursework and institution and taking actions such as regularly attending their classes. For higher educational institutions, higher students' college satisfaction is critical for it to improve retention rate (Schreiner, 2009), recruitment efforts (Hermans, Haytko, & Mott-Stenerson, 2009), and institutional effectiveness due to the fact that student satisfaction has been considered as indirect measure of effectiveness (Moro-Egido & Panadés, 2008). Put it differently, satisfied students are more likely to be committed and continue their studies than unsatisfied students, who are likely to be less willing to regularly attend classes, and are more likely to quit their studies (Jamelske, 2009; Borden, 1995). Students must be satisfied with their college overall experience in order to promote and support their higher educational institution as a student and as an alumnus. In this competitive market, satisfaction with services may make the difference in student selecting higher educational institutions and maintaining sufficient funding from state legislatures for public institutions.

In this study, three variables (student faculty interaction, enriching educational experiences and supportive campus environment) are significant in predicting college satisfaction. For students to be satisfied, it is important for them to feel connected with faculty members. Faculty should be encouraged to provide timely feedback and to engage in discussions with students both inside and outside the classroom. Involving students in research projects with faculty so that students can foster more interaction and develop more critical thinking skills should positively impact student's satisfaction with the institution. This connection and satisfaction with the institution, not only benefits the student's learning, but could enhance a student's educational experiences and help foster student involvement in internships, co-curricular activities, community service and study abroad participation. All of these activities lead to success not only in persisting in college and graduating, but can have a positive impact in student's becoming initially employed and possible future career growth opportunities.

Enriching educational experiences is also significant for both satisfaction and positively impacting a student's GPA. Students should be encouraged to participate in activities where they interact with individuals that are different from them and/or that hold differing values or viewpoints. Involvement in activities both inside and outside the classroom leads to more satisfaction and has a positive impact on a student's grade. Grades, as a proxy for academic achievement, are many times used as a measure for future success by employers when conducting job interviews and hiring upon graduation. As a result, enriching educational experiences should be a priority in institutions as it benefits not only the student, but also can be used by the institution as a measure of student satisfaction or successful delivery of programs.

A supportive campus environment, also, has a positive impact on a student's satisfaction with college. It is imperative, in this respect, that college's not only support students, but that students are aware of what these supporting measures are in their institution. For example, for tutoring to be effective, students have to be encouraged to participate and know where and when they can receive the help they need. Similarly, if students have questions about their program, they need to know where to go to get help. In these cases, well-informed tutors and knowledgeable advisors would provide support that students are requesting. This can be a larger problem for ethnic minority students as they tend to be academically less prepared (Brachman, 2012; ACT, 2013), and come from lower income first-generation backgrounds (Bui, 2002; Chen, 2005, Pike & Kuh, 2005). They may not be as familiar with supportive services offered because they have previously been found to possess low or moderate participation in campus activities (Choy, 2001), and/or may be uncomfortable asking for help because they have been found to interact less often with teachers and guidance counselors (Nunez & Cuccaro-Alamin, 1998). Orientation programs in which supportive services are discussed may be particularly helpful in educating all students, but particularly ethnic minority students, about university processes that they otherwise may not be familiar with.

Further, a student's GPA is positively impacted by their involvement in classroom activities as well as their involvement working on co-curricular or community based projects. Simply attending class is not enough for student's to be satisfied with their college experiences. This can be a larger problem for low-income minority students that may be working trying to support themselves, and their families while in college (Woosley & Shepler, 2011). Universities may want to consider funding more on-campus work opportunities where students may be encouraged to conduct meaningful work with faculty on research and/or community projects. This would, not only have a positive impact on GPA, but the student-faculty interaction that would result could positively impact the student's satisfaction level with the institution. Finally, the level of academic challenge does positively impact GPA. It is not surprising that the time and energy students invest in their own learning will lead to greater academic achievement.

In addition, this study reveals a statistically significant difference in GPA of ethnic minority students (who are more likely to be low-income) and non-ethnic minority college students as shown in Table 3. Our findings are consistent with several prior studies in that, low-income, ethnic minority college students, unlike higher income students, tend to be less academically prepared for college (Kuh, et al., 2008), work while in college (Tessema, Ready, & Astani, 2012; Thayer, 2000), have significant work and family responsibilities (Woosley & Shepler, 2011), are first-generation, and will leave college without returning (Conley & Hamlin, 2009; Ishitani, 2006). As a result, low-income ethnic minority college students are less likely than their higher income student counterparts to be successful in graduating from a higher educational institution as they are more likely to encounter academic, financial, professional, cultural and emotional difficulties (Conley & Hamlin, 2009; Nunez & Cuccaro-Alamin, 1998). Thus, the characteristics of low-income students have been shown to be risk factors that negatively affect the chances of success in higher education for this population. As a result, low-income students are described as being at greater risk with respect to both persistence and degree attainment (e.g., Chen, 2005; Choy, 2001; Institute for Higher Education Policy, 2012; Nunez & Cuccaro-Alamin, 1998; Aspelmeier, Love, McGill, Elliott, Pierce, 2012; Ishitani, 2006). In the case of ethnic minority students (who are more likely to be lower income), the impact is widened.

The current study also shows that, generally speaking, ethnic minority college students were found to have low levels of engagement, which in turn may lead to lower levels of college satisfaction. This is not surprising given the fact that the characteristics of low-income, ethnic minority college students. This study also supports most previous research in that, the characteristics of ethnic minority college students have been shown to be risk factors that negatively affect the chances of success in higher education for this population, i.e., low-income ethnic minority college students are described as being at greater risk with respect to both persistence and degree attainment (e.g., Chen, 2005; Choy, 2001; Aspelmeier, Love, McGill, Elliott, Pierce, 2012; Ishitani, 2006).

The above studies are also supported with the most recent NCES (2013) report that while 62 percent of white students who start college have earned bachelor's degrees within six years, only about 40 percent of African American, about 51 percent of Hispanic, and about 40 percent Indian American students do. The aforementioned challenges make low-income, ethnic minority college students a critical but complicated population to serve without new and innovative approaches (Conley & Hamlin, 2009).

### Conclusions, limitations, and future research directions

This study concludes that, although there are many factors that affect college satisfaction, engagement in the so called 'five effective educational practices' was found to be important and was positively correlated with college satisfaction and GPA. The findings from our analysis can help universities in enhancing the above two desired student outcomes, which subsequently influence persistence and graduation (e.g., Astin, 1993; Ishitani, 2006; Pascarella & Terenzini, 2005; Pike, 2013) for all students in general and the ethnic minority in particular. This is because student engagement had a compensatory effect for at-risk students (Carini et al., 2006; Kuh, et al., 2008). Engagement can be particularly beneficial to those groups of students least prepared for higher education. Hence, an important implication of the present study is that, if colleges and universities are to improve students' retention and graduation rates, they should consider taking actions to support the five educational practices in order to improve academic achievement and levels of satisfaction, which subsequently influences college persistence and completion. As remarked by McCormick and McClenney (2012: 330), "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."

This study concludes that, although engagement in the so called 'five effective educational practices' cannot guarantee higher levels of college satisfaction and GPA, its absence (lower engagement) adversely impacts both college satisfaction and GPA. This suggests that while students' engagement plays a particularly important role in improving both college satisfaction and GPA outcomes, it should not be perceived as the only factor that affects the two desired college outcomes.

While this study is an important step forward in understanding the extent to which five educational practices are correlated with two desired student outcomes, namely colleges satisfaction and GPA, as well as the effect of ethnicity on GPA and college satisfaction, it also leaves some questions open for future research. This study was conducted in only one U.S. mid-sized university. Hence, in order 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. In addition, a larger sample size would better be able to ascertain differences between ethnic minority groups and examine possible differences in gender across groups. Perhaps, not all groups are similarly impacted. Additional research is needed to examine the robustness of the findings and generalizations. Like any survey study, there may be response bias. However, some authors have suggested the potential for common method bias should not necessary invalidate a study's findings (e.g., Cohen & Spector, 2001).

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