



Project
MUSE[®]
Scholarly journals online

Thomas G. Greene
JE C. Nathan Marti
Kay McClenney

The Effort–Outcome Gap: Differences for African American and Hispanic Community College Students in Student Engagement and Academic Achievement

Little in higher education seems more intractable than the access and achievement gaps between ethnic groups. White students consistently outdistance African Americans and Hispanics in both enrollment and academic performance (Bailey, Jenkins, & Leinbach, 2005; Cook & Cordova, 2006; Price, 2004). African American and Hispanic college students typically exhibit greater academic risk than their White counterparts; they are more likely to be first in their families to attend college (Bailey et al., 2005; Nunez & Cuccaro-Alamin, 1998), they are more likely to begin college academically under-prepared and in need of financial assistance, they are more likely to juggle full-time work and family responsibilities with their studies (Horn & Premo, 1995), and they are more likely to confront institutional and cultural barriers (Harris & Kayes, 1996; Rendon, 1994; Zamani, 2000). They also perform below their non-minority peers academically in terms of grades, persistence, and goal completion (Harvey, 2001; Price, 2004; Swail, 2003). Despite the negative relationships between minority status and academic performance, African American and Hispanic students report being more engaged in college than their White peers (CCSSE, 2005; Hu & Kuh, 2002; Swigart & Murrell, 2001).

Thomas G. Greene is Associate Vice-President of Enrollment & Student Services at Sacramento City College. C. Nathan Marti is Associate Director of Research and Data Analysis at the Community College Survey of Student Engagement. Kay McClenney, a Sid W. Richardson Endowed Fellow, is Director of the Community College Survey of Student Engagement at the Community College Leadership Program, the University of Texas at Austin.

The Journal of Higher Education, Vol. 79, No. 5 (September/October 2008)
Copyright © 2008 by The Ohio State University

Student engagement represents the effort, both in time and energy, students commit to educationally purposeful activities as well as the institutional conditions that encourage students to engage in such practices (Kuh, 2001). A large body of evidence highlights the positive effect that student engagement has on desired outcomes in college (Astin, 1993a, 1993b; Chickering & Gamson, 1987; Kuh, Kinzie, Schuh, & Whitt, 2005; NSSE, 2000, 2003; Pascarella & Terenzini, 2005). Recent studies suggest that engagement may be particularly important for minority and academically underprepared first-year college students (Cruce, Wolniak, Seifert, & Pascarella, 2006; Kuh, Kinzie, Cruce, Shoup, & Gonyea, 2007).

The primary aim of the study is to understand the relationships between minority status and student engagement and minority status and academic outcomes in two-year colleges. Specifically, this study seeks to determine whether students from various racial and ethnic groups attending two-year colleges differ in the amount of time and energy they devote to educationally effective practices and to determine the extent to which this investment, net of the effect from various pre-college variables, contributes positively to desired outcomes. The focus of this examination is limited to community college students, who as a group are more likely to be in the ethnic minority (Bailey et al.) and possess greater academic risk than their four-year peers (Horn & Nevill, 2006). While voluminous work documents the positive impact of student engagement on academic outcomes, minimal student engagement research has been conducted in community colleges, particularly that which focuses on minority student achievement and persistence (Pascarella, 1997; Townsend, Donaldson, & Wilson, 2004). Contributions to understanding the engagement–outcome relationship for African American and Hispanic students attending community college, therefore, have important implications for educational leaders and policy experts concerned with eliminating the racial disparities in educational attainment.

Racial Disparities in Educational Attainment

One of the most unrelenting challenges confronting higher education is a participation and achievement gap between ethnic groups. For example, U.S. Census Bureau data indicate 60.6% of Asian and 42.8% of White, compared to 32.7% of African American and 24.8% of Hispanic, 18- to 24-year-olds were enrolled in degree-granting institutions in 2005. The National Center for Education Statistics reports that between 2001 and 2003, an average of 66.4% of White students transitioned to college

immediately after completing high school in contrast to only 57.2% of African American and 54.2% of Hispanic high school graduates (NCES, 2005). Bailey et al. recently reported that only 7.9% of African American and 15.4% of Hispanic students who began at community colleges between 1995 and 1996 (compared to 24% of their Asian and 17% of their White counterparts) completed at least an associate degree within six years. African American and Hispanic community college students were also found to have transferred to four-year colleges at lower rates (24% and 16%, respectively) than Asian and White students (47% and 32%, respectively) where they were less likely than these peers to earn a bachelor's degree (NCES, 2005).

The U.S. Department of Education identifies seven characteristics that increase students' risk of not succeeding in college: delaying post-secondary enrollment, receiving a GED or not completing high school, being financially independent of one's parents, being a single parent, having dependents other than a spouse, attending college part-time, and working full-time (Horn & Premo, 2005). In 1999–2000, the average number of risk factors for all undergraduates was 2.2. For African Americans and Hispanics, the average was 2.7 and 2.4, respectively (Horn, Peter, & Rooney, 2002). Possession of any one risk characteristic greatly increases a student's chance of leaving college without a credential, and for students who possessed two or more risk characteristics, only 25% eventually earned a degree or certificate (Bradburn, 2002). Community college students, generally, contend with more academic risk than their four-year peers. They are more likely, for example, to be financially independent, single parents, attend college part-time, and work full-time (Hoachlander, Sikora, & Horn, 2003; Horn & Nevill, 2006). Further, students who begin postsecondary education at a community college generally arrive less academically prepared and require transitional support especially in the areas of reading and mathematics more than their four-year peers (Bailey et al.). Almost 60% of community college students, compared to 25% of students in four-year colleges or universities, require at least one year of developmental coursework (Adelman 2005; Horn and Berger 2004). African Americans attending community colleges are almost twice as likely as their White peers to enroll in at least one developmental course where they and other developmental students were 39% less likely than their prepared counterparts to persist and earn a degree or certificate (Wirt et al., 2004).

Literature points to numerous institutional barriers as potentially important contributors to the disparities in educational attainment for many minority college students (Harris & Kayes, 1996; Rendon, 1994; Zamani, 2000). Racially indifferent or non-inclusive campus climates

(Cabrera et al., 1999; Townsend, 1994), negative or non-existent academically-substantive relationships with faculty (Astin, 1993a; Pascarella & Terenzini, 2005), and/or culturally monolithic classroom practices are cited often as barriers to minority student retention (Pascarella, Edison, Nora, Hagedorn, & Terenzini, 1996; Schwitzer, Griffin, Ancis, & Thomas, 1999). Minority students' perceptions of ethnocentrism or racial discrimination on college campuses provide further insights. African Americans, for example, often consider racism to be ubiquitous on college campuses (Allen, 1992) and, not surprisingly, they report experiences of stereotyping and prejudicial treatment by faculty to a greater degree than their White peers (Ancis, Sedlacek, & Mohr, 2000). Within campus environments that are perceived by African American students to be discriminatory and unreceptive, the empirical evidence suggests that their academic and intellectual development, social experiences, and institutional commitment are adversely affected (Cabrera et al., 1999; Love, 1993; Townsend, 1994). Such environments have also been shown to adversely affect their academic achievement (Prillerman, Myers, & Smedley, 1989; Smedley, Myers, & Harrell, 1993). Other research (Cabrera et al., 1999; Lee, 2001; Love, 1993; Townsend, 1994) suggests that college faculty who lack a requisite level of cross-cultural skills, or worse, who are indifferent and/or discriminatory in their interactions with minority students, can create significant barriers for minority student persistence. Curricular choices and methods of delivery also influence the success of minority undergraduates. In particular, predominantly White college faculty have been found to display culture-bound pedagogical approaches: a one-size-fits-all style of teaching that may not be effective with the diverse learning styles of students in the ethnic minority (Sanchez, 2000).

Harris and Kayes (1996) attribute such experiences to a cultural incongruence that can exist at the core of predominantly White institutions—in their Eurocentric programs, services, and mindset—citing such incongruence as a significant barrier to retention and success for minority students. These institutional barriers, combined with minority students' heightened levels of academic risk as they enter college, have been used to explain academic achievement disparities between students of color and their White counterparts (Hudson, 2003; Jacobson, Olsen, Rice, Sweetland, & Ralph, 2001; Szelenyi, 2001).

Student Engagement

Success in college, in terms of learning and academic achievement, also depends upon students' level of engagement (NSSE 2000, 2003), or

the quality and quantity of effort related to their interaction with faculty (Pascarella, 1980; Pascarella & Terenzini, 1978, 2005) and peers (Astin, 1993a; Kuh, Vesper, & Pace, 1997; Pascarella & Terenzini, 2005); their participation in active and collaborative learning environments (Astin, 1993a, 1993b; Chickering & Gamson, 1987; Tinto, 1994); and the amount of time they study and utilize college resources (Pascarella & Terenzini, 2005). Related studies have explored how students' level of engagement and self-reported gains interact with the dynamics surrounding race and ethnicity (DeSousa & King, 1992; MacKay & Kuh, 1994; Watson & Kuh, 1996). Findings that suggest African American and Hispanic students report being more engaged in substantive educational activities than White students are of particular interest to the current study. Swigart and Murrell (2001), for example, find that African-American community college students reported personal, social, and academic gains that were greater than their White counterparts' as a result of putting more effort into class assignments, involving themselves in class discussions, and using college services such as the library and computer technology. Interpreting a study comparing African American and White university students, DeSousa and Kuh (1996) attribute greater African American gains to greater social and academic-related effort. And with the exception of Asian Americans, all minority students represented in a study by Hu and Kuh (2002) were found more likely than Whites to be engaged at higher-than-average levels. Results from the Community College Survey of Student Engagement (CCSSE, 2005) were similar in that students of color reported higher levels of engagement than their White peers. Research suggests that high engagement may be particularly important to the success of minority and under-prepared college students. Cruce et al. (2006) and Kuh et al. (2007) recently reported that engagement had compensatory effects for historically underserved and minority students; net of controls for prior academic achievement and other variables, they found that African American and Hispanic college students achieved and/or persisted at higher levels than their White counterparts as their engagement increased.

Purpose of Study

This study seeks to determine whether students from various racial and ethnic groups attending two-year colleges differ in the amount of time and energy they invest in educationally effective practices, and to determine the extent to which this investment, net of the effect from various pre-college and other variables, contributes positively to desired outcomes. Two research questions provided guidance in seeking to bet-

ter understand these relationships. First, do African American and Hispanic students in community college invest more time and energy in educationally effective practices than their White counterparts? Second, do the academic outcomes of African American and Hispanic students differ from their White counterparts?

Methodology

Participants

Participants were sampled in the 2002, 2003, or 2004 administrations of the Community College Student Report (CCSR), the survey instrument of the Community College Survey of Student Engagement (CCSSE). The CCSR is administered each spring to participating colleges using a uniform sampling and administration procedure. The *CCSSE national sample* includes all participants from all participating colleges that met eligibility.¹ Five Florida community colleges participated in the survey in 2002, 3 in 2003, and all 28 in 2004. Of the 28,194 students from Florida colleges in the CCSSE national sample, 3,824 students provided an identification number that could be matched to the Florida Department of Education Student Database (FDES) and who were enrolled for at least one class in the spring semester of 2004. Participants were required to have identical data for sex and race on their CCSR responses and the FDES. Participants were also excluded if data were missing on variables included in the models, with the exception of pre-college achievement scores that were imputed to have complete data on all included variables.² The 3,143 participants who remained following exclusions comprised the *study sample* and were used in all analyses reported herein. No attempt was made to impute variables that were demographic in nature or not reasonably imputed from existing data, and therefore, not well suited for imputation methods. Demographics for the study sample, the CCSSE national sample, and the statewide Florida population data are provided in Table 1. Population data were obtained from the 2004 Integrated Postsecondary Student Database (IPEDS). A very close match between the study sample and the CCSSE national data set on all demographic characteristics indicated that there was no relationship between the demographics and participants' willingness to provide an identification number. There were disparities in age, race, and enrollment status whereby participants in the study sample were more likely to be younger, be White, and be full-time students. The disparity between full-time students in the study sample and the population was expected as classes are sampled rather than students. This provides greater opportunities for full-time students to be

sampled as they participate in more courses than do part-time students. Analysis of IPEDS data showed higher concentrations of older and minority students in large colleges located in densely populated areas. Because samples were designed to be representative within institutions, the sample-to-population ratio was smaller in large colleges despite these colleges having larger samples and the sample-to-population ratio was larger in small colleges as a greater proportion of the overall student body was required to have a representative sample in smaller colleges. Because the sample-to-population ratio was smaller in colleges with large minority populations, the study sample was disproportionately White. We were concerned with the extent to which these variables impact model specification, and we were not attempting to estimate population totals in which case a mismatch in sample to population proportions would have been more problematic. Thus, by including variables that represent demographic disparities in our models, we were able to correct for the potential bias of over representing some demographic variables relative to the population from which they were drawn.

Sampling

A stratified random cluster sample scheme was used in which each class section is a cluster. Sampled classes are randomly selected from a

TABLE 1
Demographics of the Study Sample, the CCSSE National Sample, and Florida Population Data

Demographic	Sample	All CCSR respondents	Population
Age			
18 to 19	26.61%	27.25%	22.58%
20 to 21	23.16%	25.88%	19.88%
22 to 24	14.13%	14.42%	16.23%
25 to 29	11.74%	11.20%	13.83%
30 to 39	13.78%	11.87%	15.14%
40 to 49	7.66%	6.68%	8.80%
50 and over	2.92%	2.70%	3.52%
Race			
Native American	0.50%	1.58%	0.43%
Asian-American	1.63%	2.63%	2.85%
African-American	13.83%	13.08%	17.95%
White	75.17%	73.15%	58.76%
Hispanic	8.86%	9.55%	20.02%
Enrollment status			
Part-time	36.35%	35.01%	64.03%
Full-time	63.65%	64.99%	35.97%
Sex			
Males	36.39%	39.83%	39.01%
Females	63.61%	60.17%	60.99%

list of all courses offered for academic or institutional credit during the term of survey administration at an institution. While cluster sampling's primary disadvantage is increased standard errors, the concern is offset by the feasibility of collecting larger amounts of data, which decreases standard errors as a function of increased sample sizes (Levy & Lemeshow, 1999). The in-class administration process used for the CCSR substantially increases sample sizes and thus justifies the implementation of cluster sampling. The stratification was conducted at three levels based upon the time of day at which the class begins: (1) 11:59 a.m. and earlier, (2) 12:00 p.m. to 4:59 p.m., and (3) 5:00 p.m. to 12:00 a.m. Stratification ensured that the number of courses in each time period in the study sample of classes was proportional to the number for that time period in the population of classes.

Administration

Survey administration took place in the classrooms during regularly scheduled class meeting times and was not announced to the students in advance. The survey was administered by either the faculty member teaching the course or by a campus representative. Survey administrators were given a script that they read to students in each classroom. The script instructed students to complete all items on the survey and reminded them that the survey is about their experiences at the college where the survey is being administered.

Data Sources

Data were obtained from two sources. Responses to the Community College Student Report (CCSR) administered to students in the spring of 2002, 2003, or 2004 represented the first source. The CCSR is designed to measure student engagement, and the items examined in the current analysis pertain to time spent on activities that previous research has shown to be related to desirable educational outcomes. A complete copy of the survey can be obtained at http://www.ccsse.org/aboutsurvey/CCSR_2004.pdf. The reliability of the CCSR has been evaluated previously using data from the CCSSE national sample (Marti, in press).³ Furthermore, these constructs have demonstrated predictive validity for a number of outcome variables in data from the CCSSE national sample (McClenney & Marti, 2007).

The Florida Department of Education Student Database provided the second data source. Access to the Florida Department of Education Student Database was obtained with permission from the Florida Department of Education for use in conducting validation research on the CCSR. Records were matched to CCSR surveys for which students pro-

vided a valid ID. The Florida Department of Education database consisted of course, completion, demographic, financial aid, acceleration tests, entry and exit placement tests, and program of study records.⁴

Dependent Variables

This study analyzed five dependent variables in separate models. Three of the five variables represented engagement factors that were a composite of items on the CCSR. The factors, *class assignments*, *academic preparation*, and *mental activities*, were established in a previously published factor analysis (Marti, in press). Table 2 provides a complete description of the variables that comprise the factors. In addition, course grades and pass/fail outcomes for courses were analyzed. Letter grades obtained from course-level records in the Florida Department of Education Database were converted to conventional numeric values as follows: A = 4, B = 3, C = 2, D = 1, and F and unsatisfactory were assigned values of zero. Other letter grades (e.g., incomplete, pass) were treated as missing and thus excluded from grades analysis. Grades of C or better, pass, and satisfactory were coded as pass, and grades of D, F, “unsatisfactory,” withdrawals, and incompletes were coded as zero. The two academic variables were analyzed across all courses and were analyzed for two subsets of courses. Developmental courses, defined as all courses below college-level offered for institutional credit, represented the first subset. Gatekeeper courses, defined as the first college-level course in English and mathematics, represented the second subset. Three courses met the gatekeeper definition: freshman composition skills, intermediate algebra, and college algebra.

Independent Variables

The primary aim of the study is to understand the relationships between African American and Hispanic status and student engagement and academic outcomes. Race was dummy coded for the four available minority classifications, African American, Hispanic, Asian American, and Native American. To control for the numerous demographic variables known to be correlated with academic attainment, we used retention risk characteristics or close proxies where they were unavailable (Horn & Premo, 1995). These included delaying postsecondary enrollment, receiving a GED or not completing high school, being financially independent of one’s parents, being a single parent, having dependents other than a spouse, attending college part-time, and working full-time (see Table 3). Financial independence is the only factor that is not present in our database and thus not included in the models. However, parents’ educational level is introduced as this variable is often a proxy for

TABLE 2
Engagement Factors

Factor	Item and response scale with standardized factor loading in parentheses
Class assignments	<p>Variable composed of three survey items. A four-item response scale (<i>Never, Sometimes, Often, Very Often</i>) is used for the following college activities:</p> <ul style="list-style-type: none"> • Made a class presentation (.51) • Prepared two or more drafts of a paper or assignment before turning it in (.62) • Worked on a paper or project that required integrating ideas or information from various sources (.76)
Mental activities	<p>Variable composed of six survey items. A four-item response scale (<i>Never, Sometimes, Often, Very Often</i>) is used for the following college activity:</p> <ul style="list-style-type: none"> • Worked harder than you thought you could to meet an instructor's standards or expectations (.42) <p>A four-item response scale (<i>Very little, Some, Quite a bit, Very much</i>) is used for the following mental activity items:</p> <ul style="list-style-type: none"> • Analyzing the basic elements of an idea, experience, or theory (.68) • Synthesizing and organizing ideas, information, or experiences in new ways (.77) • Making judgments about the value or soundness of information, arguments, or methods (.73) • Applying theories or concepts to practical problems or in new situations (.77) • Using information you have read or heard to perform a new skill (.64)
Academic preparation	<p>Variable composed of four survey items. A five-item response scale (<i>None, Between 1 and 4, Between 5 and 10, Between 11 and 20, More than 20</i>) is used for the following academic preparation items:</p> <ul style="list-style-type: none"> • Number of assigned textbooks, manuals, books, or book-length packs of course readings (.55) • Number of written papers or reports of any length (.56) <p>A seven-item response scale (<i>Ranging from 1 to 7, with scale anchors described: (1) Extremely easy (7) Extremely challenging</i>) is used for the following item:</p> <ul style="list-style-type: none"> • Mark the box that best represents the extent to which your examinations during the current school year have challenged you to do your best work at this college (.35) <p>A six-item response scale (<i>None, 1-5 hours, 6-10 hours, 11-20 hours, 21-30 hours, More than 30 hours</i>) is used for the following time allotment item:</p> <ul style="list-style-type: none"> • Preparing for class (studying, reading, writing, rehearsing, doing homework, or other activities related to your program) (.50)

socioeconomic status as well as serving as a proxy for first-generation status. In addition to the impact of demographic risk factors, students who begin postsecondary education at a community college generally arrive less academically prepared and require transitional support, especially in the areas of reading and mathematics (Bailey et al.). We thus included pre-college achievement measures. In addition, we introduced

total credit hours earned at the college to control for the amount of time that participants have spent at the college and thus have had opportunities to engage in measured engagement behaviors. This variable is globally correlated with engagement variables (McClenney & Marti, 2007), and because it may largely represent increased opportunities to engage, it is an important control.

TABLE 3
Independent Measures

Measure	Definition
Pre-college achievement	The earliest available reading, writing, and mathematics placement scores were used to construct placement scores for each of these areas. Florida accepts the following placement tests: American College Testing Program (ACT), Enhanced ACT, Computerized Placement Test, American College Testing Program (ASSET), Enhanced ASSET College Entrance Examination Board (MAPS), Scholastic Aptitude Test, and SATI. Each subtest from each of the tests was converted to a <i>z</i> score.
Hours employed	Time working was based on responses to the CCSR item stem, “About how many hours do you spend in a typical 7-day week doing each of the following?” Students responded using the following response options: none; 1-5 hours; 6-10 hours; 11-20 hours; 21-30 hours; and more than 30 hours.
Credit hours enrolled	Enrollment was a continuous variable derived from the total number of credits attempted in the semester. Clock hours were converted to semester hours and developmental credit hours were included in this variable. We elected to treat enrollment as a continuous variable, as dichotomizing the variable would only reduce the amount of available information about students’ academic load.
Single parent proxy	Single parent status was derived from two items on the CCSR. Students were asked, “Are you married?” and “Do you have children who live with you?” Respondents who indicated they were not married and they did have children who lived with them were assigned a value of one, and those who were married or did not have children who lived with them were coded as zero.
Have children	Students were asked, “Do you have children who live with you?” Respondents were coded as one if they had children who lived with them and zero if they did not have children who lived with them.
High school dropout	Participants who did not have a high school graduation date, or had a high school graduation date after the age of twenty, were assigned a value of one and other participants were assigned a value of zero.
Delayed entry to college	Delayed entry was derived by subtracting the date at which students began at the college where they took the CCSR from their eighteenth birthday. Students who began college prior to their eighteenth birthday were assigned a value of zero.
Parent’s education	Respondents were asked to report their mothers and fathers’ highest levels of education. The “Unknown” response option was treated as missing data. The higher value was selected to represent parental education.
Total credit hours earned at current college	Respondents reported credit hours completed at the college that they attended, not including courses in which they were currently enrolled.

Data Analysis

All analysis models were constructed with the hierarchical linear models (HLM). HLM models accommodate nested data structures such as multiple observations from the same individual (Raudenbush & Bryk, 2002). For models with outcomes representing a continuous underlying distribution, the identity link function was used to model linear relationships and for models with binomial outcomes, the nonlinear logistic link function was used to model the probability of responses limited to two values. All continuous variables were mean-centered around grand means. HLM models allow for the use of, and provide a common framework for the analysis of, all available data.

All outcomes derived from the CCSR were modeled with two levels as there is only a single measure per student. Level-1 represented student data while level-2 represented institutional data. All course-level outcomes (e.g., course grades, course completion) were modeled with three levels: course-, student-, and institutional-level. Models contained the following variables: indicator variables for African American, Hispanic, Asian American, and Native American status; pre-college achievement in reading, writing, and mathematics; hours employed; credit hours enrolled; single parent; have kids; high school dropout; delayed entry to college; parent's education; and total credit hours at current college. In models limited to developmental students, pre-college achievement measures in reading, writing, and mathematics were excluded as these variables were used as criteria to select individuals for inclusion in developmental coursework.

Table 4 contains a correlation matrix of the independent and dependent measures. Because grade and pass/fail measures have multiple measures per individual, these variables were collapsed into a single value so that they could be correlated with variables with a single measure per individual. Grade was computed as a grade-point average and pass/fail outcomes were computed as a proportion of courses completed. In the correlation matrix, term GPA and credit hour correlations were weighted by the number of credit hours attempted in the semester. This allowed the term GPA and the proportion of credit hours completed from students taking larger loads to be more heavily weighted than those taking lighter loads. The correlation matrix is presented primarily for the interpretation of the variables contained in the models. There are 187 unique correlations in the table, thus, inferences based on correlations with p values at the .05 and .01 level should be done with caution as chance levels would produce 9.4 significant effects at the .05 level, 1.9 significant effects at the .01 level, and 0.2 significant effects at the .001 level. While we have concerns about Type I error, we present p values as we believe these concerns are outweighed by the importance of presenting the numerous relationships between independent variables in the models.

TABLE 4
Correlation Matrix of Variables Used in Study

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
1. Term GPA†		.62***	.03	.04	.08***	-.16***	-.05**	-.01	.01	.19***	.20***	.17***	-.07***	-.03	-.09***	.03	.03	.14***	.03	.06***
2. Credits enrolled†			.04*	.08***	.09***	-.18***	-.04*	-.02	.01	.28***	.28***	.19***	-.06**	.02	-.04*	.08***	.07***	.19***	.00	.11***
3. Class assignments				.41***	.37***	.04*	-.04*	.00	.03	-.04*	-.06**	-.05***	-.00	.18***	.04*	.02	-.01	-.03	.01	.10***
4. Academic preparation					.35***	.06**	.02	.02	.03	-.03	-.04*	-.07***	-.12***	.26***	.06**	.11***	.05**	.04*	-.01	.08***
5. Mental activities						.05**	.04*	.00	.03	-.03	.01	-.02	-.01	.06***	.06**	.09***	.03	.04*	-.03	.10***
6. African American							-.14***	-.03	-.06***	-.23***	-.20***	-.14***	-.06**	.02	.11***	.10***	-.02	-.01	-.08***	.00
7. Hispanic								-.02	-.05**	-.08***	-.10***	-.03	.01	.02	-.02	-.05**	-.03	-.04*	-.02	-.01
8. Native America									-.01	-.03	-.02	-.02	-.05**	.03	-.03	.01	.00	.02	-.00	-.02
9. Asian American										-.07***	-.03	-.07***	-.07***	.01	-.03	-.02	-.01	-.01	-.01	.03
10. Reading placement											.67***	.32***	.01	.00	-.03	.04*	.07***	.12***	.06**	-.06**
11. Writing placement												.37***	.01	.02	-.03	.01	.08***	.06***	.07***	-.06***
12. Mathematics placement													.03	.02	-.08***	-.13***	.06**	-.09***	.12***	.03
13. Employment														-.22***	.01	-.04*	.02	-.03	-.01	.03
14. Credit hours															.00	-.12***	.01	-.17***	.09***	-.01
15. Single parent																.63***	.02	.06***	-.10***	-.04*
16. Have kids																	.04*	.30***	-.19***	.05**
17. High school dropout																		-.09***	-.03	.10***
18. Delayed entry to college																			-.18***	-.02
19. Mother's education																				
20. Total credit hours																				

† Correlations weighted by credit hours attempted in semester.

Results

Table 5 presents results for the full HLM models for the engagement outcomes: class assignments, academic preparation, and mental activities. African American students reported higher levels of engagement than White students on the class assignments factor ($d^5 = 0.14$), academic preparation factor ($d = 0.19$), and mental activities factor ($d = 0.18$). Hispanic students did not differ significantly from White students on the class assignments factor or the academic preparation factor, but did report higher levels of engagement on the mental activities factor ($d = 0.17$). Asian American students reported higher levels of engagement than White students on the class assignments factor ($d = 0.26$) and the mental activities factor ($d = 0.21$). In addition to race variables, mathematics placement was negatively associated with the class assignments factor and credit hours enrolled in the current semester while hours employed, and total credit hours were positively associated with the class assignments factor. Further, mathematics placement, hours employed, and single parent proxy were negatively associated with academic preparation, and credit hours enrolled in the current semester, total credit hours, having kids, high school dropout status, and delayed entry to college were positively associated with academic preparation. Lastly, reading placement scores, credit hours enrolled in the current semester, total credit hours, and having kids were positively associated with the mental activities factor.

Table 6 presents results for the full HLM models for academic outcomes. African American students had lower course grades ($d^6 = 0.15$) and were less likely than White students to pass courses (OR = 0.73). Hispanic students had lower course grades ($d = -0.08$), but were as likely as White students to pass courses. Asian American students were less likely than White students to pass courses (OR = 0.68). African Americans had lower course grades in developmental courses ($d = -0.13$), but were as likely as White students to pass these courses. African American had lower course grades in gatekeeper courses ($d = -0.07$), but were as likely as White students to pass these courses. In addition to race variables, GPA was negatively associated with hours employed, credit hours enrolled that term, and the single parent proxy, in addition to being positively associated with reading placement, writing placement, mathematics placement, having kids, delayed entry to college, and total credit hours prior to the current semester. Passing courses was negatively associated with hours employed, credit hours enrolled that term, and the single parent proxy, in addition to being positively associated with mathematics placement, having children, delayed entry to college, and total

TABLE 5
Engagement Outcomes HLM Models

	Class assignments		Academic preparation		Mental activities	
	Beta	Sig.	Beta	Sig.	Beta	Sig.
Intercept	0.502	***	0.492	***	0.543	***
African American	0.028	*	0.020	*	0.047	***
Hispanic	0.018		0.008		0.035	*
Native American	0.012		0.011		0.015	
Asian American	0.062	**	0.027		0.058	***
Reading placement	0.004		−0.001		0.016	***
Writing placement	−0.003		−0.003		0.002	
Mathematics placement	−0.015	**	−0.010	***	−0.007	
Hours employed	0.006	*	−0.004	**	0.001	
Credit hours enrolled	0.012	***	0.011	***	0.004	***
Single parent proxy	0.007		−0.024	*	0.001	
Have kids	0.018		0.049	***	0.035	**
High school dropout	−0.007		0.018	**	0.008	
Delayed entry to college	0.000		0.001	**	0.001	
Parental education	0.001		0.001		−0.002	
Total credit hours	0.001	**	0.000	**	0.001	***

credit hours prior to the current semester. The only non-race effect for developmental course grades was a negative association with the single parent proxy. There were no variables significantly related to passing developmental courses. Gatekeeper course GPA was negatively associated with the single parent proxy and positively associated with credit hours enrolled in the current semester, mathematics placement, and delayed entry to college. Mathematics placement was positively associated with passing gatekeeper courses: the only variable associated positively with this outcome.

Discussion

Overall results were consistent with the findings from previous research: African American students reported being more engaged and demonstrated generally lower academic outcomes than their White peers. Results for the Hispanic community college students exhibited a weak consistency with previous findings. Hispanic students exhibited higher levels of engagement only on the Mental Activities factor, and Hispanic students earned significantly lower grades than their White counterparts.

TABLE 6
HLM Models

	Academic outcomes						Developmental courses						Gatekeeper course					
	Grades		Pass		Grades		Pass		Grades		Pass		Grades		Pass			
	Beta	Sig.	Beta	OR	Beta	Sig.	Beta	OR	Beta	Sig.	Beta	OR	Beta	Sig.	Beta	OR	Sig.	
Intercept	2.92	***	1.72	5.57	2.44	***	1.17	3.21	2.37	***	0.81	2.25	2.37	***	0.81	2.25	***	
African American	-0.34	***	-0.34	0.71	-0.24	*	-0.04	0.96	-0.18	*	-0.05	0.95	-0.18	*	-0.05	0.95		
Hispanic	-0.09	*	-0.04	0.96	-0.55		-0.16	0.85	0.03		0.22	1.24	0.03		0.22	1.24		
Native American	-0.22		-0.39	0.68	-†		-†		0.47		-0.35	0.70	0.47		-0.35	0.70		
Asian American	-0.07		-0.29	0.75	0.31		0.70	2.02	0.32		1.02	2.77	0.32		1.02	2.77		
Reading placement	0.08	***	0.05	1.05					0.10		0.06	1.06	0.10		0.06	1.06		
Writing placement	0.09	***	0.03	1.03					0.10		0.05	1.06	0.10		0.05	1.06		
Mathematics placement	0.09	***	0.18	1.19					0.16		0.17	1.18	0.16	*	0.17	1.18	*	
Hours employed	-0.04	**	-0.07	0.93	-0.02		-0.00	1.00	-0.04		-0.04	0.96	-0.04		-0.04	0.96		
Credit hours enrolled	-0.01		-0.01	0.90	-0.01	*	-0.02	0.98	0.03	*	0.02	1.02	0.03	*	0.02	1.02		
Single parent proxy	-0.28	***	-0.61	0.54	-0.40		-0.65	0.52	-0.27	*	-0.41	0.67	-0.27	*	-0.41	0.67		
Have kids	0.20	***	0.35	1.42	0.28	*	0.29	1.34	0.18	*	0.34	1.40	0.18	*	0.34	1.40		
High school dropout	0.03		0.07	1.07	0.06		0.39	1.48	0.08		0.13	1.14	0.08		0.13	1.14		
Delayed entry to college	0.02	***	0.03	1.03	0.02		0.01	1.01	0.02	**	-0.00	1.00	0.02	**	-0.00	1.00		
Parental education	0.00		0.03	1.03	0.05		0.10	1.11	0.02		0.04	1.04	0.02		0.04	1.04		
Total credit hours	0.00	*	0.00	1.00	-0.00		0.00	1.00	-0.00		-0.01	0.99	-0.00		-0.01	0.99		

† Insufficient cases for model for estimation convergence.

For African American students, a select number of features emerged from these results that, in light of existing research, suggest that their self-reported levels of engagement may represent an Effort–Outcome Gap—the result of having to put forth more effort in attempting to compensate for a pervasive combination of academic and institutional barriers to educational success. The Effort–Outcome Gap (EOG) reflects the possibility that African American students are working harder to persist and achieve educational goals that their peers, who generally are less academically “at-risk” and who face fewer institutional barriers, can reach with less effort and engagement.

Compensating for Underpreparedness and Other Academic Risk

Greater academic underpreparedness associated with African American students may be one possibility that accounts for the EOG. Results from the current study (see Table 4) indicate that African American students reported lower pre-college achievement in reading, writing, and mathematics, and demonstrated lower academic achievement.

These results suggest that African American students may be more likely to enter community college far behind their better prepared and lower-risk counterparts and therefore must travel a greater distance and expend more effort in striving to persist and achieve the same educational goals. Having to travel a *greater distance* appears consistent with findings that showed the average time-to-degree for community college students who previously enrolled in a developmental course was two semesters longer than for students who did not need transitional support (Kolajo, 2004). Having to *expend more effort* parallels previous research (Hu & Kuh, 2002; Swigart & Murrell, 2001), including the national findings from the Community College Survey of Student Engagement that indicated academically underprepared students were more likely than their prepared peers to “*Write more papers or reports . . . Work harder than they thought they could . . . and talk about career plans with an instructor or advisor* (CCSSE, 2005 p. 2).” Linkages between developmental education and supplemental instruction, specialized skill labs (Flyr, 2000; Perin, 2004), and compulsory learning communities also lend support to the EOG, as these innovations suggest success in developmental education often requires a considerable amount of additional effort on the part of academically underprepared students. In having to cover more ground, moreover, one might speculate that there also is an opportunity to realize greater gains. Several previous studies have found that African American students reported gaining more from college than their White peers, particularly in academically-related areas as the pos-

sible pay-off for devoting higher levels of effort toward achieving their educational goals (CCSSE, 2005; DeSousa & Kuh, 1996; Swigart & Murrell, 2001).

Differences in remediation needs and academic risk levels may partially explain why the EOG was not present in the self-reported experiences of Hispanic students to the extent that it was found in African American students. Hispanics were found to be better prepared and less at-risk academically than their African American peers. As a group, moreover, the characteristics of Hispanics in this study may not be representative of community college Hispanic students more generally. Florida is comprised of a proportionately large Cuban and Puerto Rican population relative to the rest of the nation; Florida Puerto Ricans, specifically, tend to be better educated and possess a greater command of the English language than other Puerto Ricans who do not reside in Florida (EDRFL, 2005). Similar differences in student characteristics also may partially explain the absence of the EOG at four-year colleges (Kuh et al. 2007). Four-year college students, as a group, tend to be academically better prepared and possess less risk than their two-year peers (Hoachlander et al., 2003; Horn & Nevill, 2006).

Considering these differences, it is possible that the EOG is associated only with the most academically underprepared and at-risk of college-going students, those who must travel the farthest to achieve their educational goals. So demanding may be this journey that students' high levels of effort as well as their self-reported gains (CCSSE, 2005) and cognitive development (Cruce et al., 2006) do not translate immediately into measurable improvements in academic outcomes.

While the EOG effectively describes the findings presented herein, it does not fully explain why minority students report working harder for lesser academic outcomes. The extenuating aspects considered thus far were controlled for in the analytic models and the additional variance accounted for by minority status indicates an effect beyond risk characteristics and academic underpreparedness. There are at least three potential possibilities that we believe deserve further research. First, institutional climates that require minority students to employ a wider range of attributes should be considered as a possible explanation for why minority students exhibit weaker academic outcomes. Second, the higher levels of engagement reported by minority students may reflect a survivor effect whereby only highly engaged students survive long enough to be measured. Third, the possibility that the minority students have a different understanding of the survey instrument could result in different measurement results for essentially comparable behavior.

Considering a Wider Range Of Student Attributes in Navigating Institutional Barriers

The EOG may be partially the result of minority students employing a wider range of attributes to achieve their educational goals. To succeed academically in predominantly White colleges requires different skills for minority students than for majority students (Sedlacek 2003, 2004). Applying Sternberg’s (1985,1986) intelligence typology, Sedlacek (2003, 2004) suggests that minority students, in having to navigate culturally non-inclusive environments, devote considerable time and effort developing and employing “Contextual Intelligence”—adaptive skills such as coping with racism, maintaining a positive self-concept, and developing supportive relationships. Majority students, who by contrast face fewer cultural barriers, are able to devote the bulk of their energies to developing and employing “Componential Intelligence”—abilities involving interpreting and categorizing information in a well-defined, structured format such as test-taking, quantitative reasoning, etc.

Within predominantly White colleges and universities, these componential attributes tend to associate more closely with traditional measures of academic progress than do contextual attributes. Students whose societal experience differs from the traditional male-oriented, White middle class experience may be at a distinct disadvantage in such environments, should the time and effort required to ‘adapt’ come at the expense of developing and exercising their componential abilities. It is possible therefore, that while African Americans in this study are engaging at high levels in effective educational practices, doing so involves a significant investment of contextual effort, leaving less available time and energy for exercising their componential abilities.

For Hispanic students, it is possible that any ethnic/racial barriers related to ethnocentrism and/or discrimination, if present, were not as pervasive as they were for African Americans. Ancis et al. (2000), for example, suggest that Hispanics may be less susceptible to racism and discrimination due to their physical characteristics and/or higher levels of acculturation as part of their explanation of why Latino college students did not perceive as much racism and discrimination on college campuses as did their African American counterparts.

Reflecting Only the Survivors

The fact that the CCSSE sample was obtained in classrooms during the spring semester restricts the study sample to students who have exhibited at least some success. For the vast majority of students in the

study sample, this was not their first semester; and, by their presence in the classroom, they demonstrated that they had persisted past the census date for the spring semester. It is possible, therefore, that the results of this study reflect the perceptions of generally more engaged minority students—those, for example, who are better equipped in terms of their cognitive and affective attributes, individual and familial socio-historical positions, support structures, and institutional learning environments to have thus far *survived* and persisted in college. Data from 27 “round one” institutions participating in the national Achieving the Dream initiative indicate that 14% of the entering fall term students who start at a two-year college either drop out or do not earn any academic credits during the first academic term. These data further indicate that African American and Hispanic students persist in college to the second academic term and second year at lower rates than their White peers.

In light of the evidence that during the first and second semester minority students are more likely to drop out of college than their White counterparts, it is possible that African American students, as a whole, are not more engaged: rather, only the most highly engaged persist. However, should this be the case, it would indicate that a higher level of engagement is required, or at least advantageous, in order for African American students to persist in their college education.

Interpretation Differences

Alternatively, differences in how survey items are interpreted may be responsible for the EOG. It is possible that minority students rate a putative behavior as occurring more frequently than would majority students. This would suggest that African American and/or Hispanic students may have a somewhat different concept of what it means to be highly engaged than their White counterparts. Students’ culturally derived beliefs, values, and behaviors have frequently been shown to influence their preferred approach to learning (Sanchez, 2000) as well as their perceptions of the learning environment (Ancis et al., 2000; Harris & Kayes, 1996). It is possible, therefore, that these same characteristics influence students’ perceptions related to the time and energy they put into achieving their educational goals. This also would support the possibility that a cultural incongruence separates African American students and puts them at a disadvantage, academically, relative to their White counterparts.

Implications for Practice and Research

The findings associated with the EOG have significant implications for both community college policy and practice. Excluding the possibil-

ity of interpretation differences, the findings challenge attempts to attribute differences in the academic outcomes of African American students to lower levels of effort. Alternatively, we maintain students' higher levels of effort invite greater institutional responsibility—for channeling the extra effort reported by African American students into the most engaging educational practices, for improving the campus climate, and for lowering other institutional barriers to students' success. The fact that too many underprepared students drop out of community college within the first semester—even more during the first year—further suggests that community colleges would do well to engage all students early and often in the practices that matter most—those that research suggests most closely align with quality educational outcomes (Kuh, Kinzie, Shuh, & Whitt, 2005). Some of the front-door best practices that community colleges continue to implement include bridge-programs (Chaney, Muraskin, Cahalan, & Goodwin, 1998), intended to acclimate recent and higher-risk high school graduates to the postsecondary environment through intensive academic and orientation experiences; the strategic placement of welcome centers and other inescapable intake services (McClenney & Greene, 2005); the requirement that first-time students meet with an advisor, attend an orientation session (Elliot & Healy, 2001; Seidman, 1991) and participate in mandatory assessment and placement in reading, writing, and mathematics (Boylan, Bliss and Bonham, 1997; Roueche & Roueche, 1993). Beyond front-door best practices, research suggests that community college students, particularly African Americans, would benefit from participation in a student success course (Stovall, 2000). Community colleges are increasingly mandating that their new and/or developmental education students take a student success course, often as part of a learning community (ATD, 2005). The findings associated with the EOG also highlight the importance of emerging efforts to more effectively support the success of underprepared students. The Achieving the Dream Initiative, a national effort to improve the achievement and success of community college students—particularly low-income students and students of color—is monitoring the implementation of a number of strategies focused on improving developmental education including revamping the developmental education curriculum; incorporating skills for success and motivation into the developmental curriculum; integrating supplemental instruction, tutoring, and study groups into developmental courses; researching and utilizing new technologies for developmental math; and creating task forces of faculty, staff, and students at colleges that focus on improving developmental education (ATD, 2005).

This study suggested the existence of an EOG but did not disentangle the effect from other possible phenomena. Examining the engage-

ment–outcome relationship based on first-time-in-college status, gender, age, and levels of academic preparedness, etc.—may help further explain this effect. In fact, there are suggestions in the models presented herein that there are other risk characteristics, such as being a developmental student and having children, that may also be associated with EOGs. This study represents a “snapshot” of the engagement–outcome relationship and needs to be examined over time. Longitudinal studies will help determine how engagement is related to the successful completion of educational milestones over time.

It is important to note that this study represents one of many steps that must be taken in order to understand better the relationship between student engagement and educational outcomes for students in community colleges, particularly in regard to identification of the educational practices that matter most to enhancing the success of African American, Hispanic, and other students who have been underserved and underrepresented in higher education historically. Subsequent research in this area should continue to focus on the changeable conditions that surround learning, exploring in detail the alterable student and institutional characteristics that demonstrate the greatest potential for enhancing student engagement and success.

Notes

¹Exclusion criteria for the CCSSE national sample include respondents not indicating whether they were part-time or full-time students, which is the basis of a weighting scheme for reporting institutional results; respondents did not indicate that it was the first time they had taken the survey, which ensures that the same respondent’s data is not included more than once; the respondents were less than eighteen years of age and data was thus not usable without parental consent; or the survey form was not returned in the class packet to which it was assigned.

²There was 99.4% agreement in the two data sources on sex variables and 45 participants had missing data on one or both of the two data sources. There were five race categories that overlapped between the CCSR and FDESD data sources: Asian or Pacific Islanders, Black, Hispanic, American Indian, and White. There was 96.6% agreement in race classification across the two data sources, 192 participants who had missing data on one or both of the two data sources, and 82 CCSR respondents who reported “Other” for race and were thus excluded. There were a total of 432 cases that were excluded due to a failure to match or missing data on sex and race. There were 378 cases that were missing one or more of the variables included in the models, resulting in a study sample containing 3,143 participants. Missing data for reading, writing, and mathematics placement tests were imputed using SAS PROC MI where available. Standardized subtest scores, developmental needs in reading, writing, and mathematics were obtained from the CCSR, and cumulative GPA. There were 575 respondents missing the reading subtest, 551 missing the writing subtest, and 555 missing the mathematics subtest.

³The reliability and validity of the CCSR has been evaluated previously using data from the CCSSE national sample. Those analyses demonstrate a reliable set of constructs underlying questions on engagement behavior have been demonstrated as reliable (Marti, in press). The reliability of the instrument is primarily derived from a confirma-

tory factor analysis (CFA) that demonstrates that factor analytic models adequately represent underlying constructs. Models demonstrated that the factor structure had good model fit using the combinatorial cutoff of RMSEA < .06 and SRMR < .09. Tests of measurement invariance were evaluated using Δ RMSEA to compare unconstrained and constrained models in multiple-group CFA. These analyses demonstrated that there were not differences in the measurement model across administration years, across males and females, and across part- and full-time students.

⁴The acceleration, completion, financial aid, and program tables were not used in the present analysis. Acceleration records contained information on acceleration exams; however, this table contained records for less than 10% of the participants. Completion data were not used because an insufficient time had elapsed between the time that the survey was conducted and expected degree completion dates. Data on program of study was not used as it had no theoretical relevance to academic or engagement outcomes. Complete financial aid data were only available for students entering college after 2004, and the partial data that were available did not contain information on dependent status and family contribution, making the interpretation of aid types and amount untenable. Placement data contained records on scores and dates of standardized pre-college placement exams and the College-Level Academic Skills Test (CLAST) that measures academic skills at the award of an associate in arts degree and for admission to upper-division status in Florida state universities. CLAST tests were not used as insufficient time for degree completion had elapsed between data collection and the most recent CLAST data. Demographic data contained information on race, sex, disability status, transfer status, class level, first-time-in-college status, incarceration status, residency status, immunization status, high school graduation data, and various summary statistics for previous coursework. Most variables coded for very low frequency demographic characteristics (e.g., incarceration status) and were thus not utilized. Race, sex, and delayed entry to college derived from high school graduation dates were used as control variables in all models. Course records contained data on all courses completed, including grades, credit hours, hour type, dates, course number, section number, and various course characteristics (e.g., dual enrollment).

⁵All reported values of Cohen's d are the mean difference between two groups divided by the pooled standard deviation.

⁶Effect sizes for GPA were weighted by credit hours to give greater weight to students who enrolled in greater numbers of courses and thus more closely approximate the HLM models.

References

- Adelman, C. (2005). Educational "Anticipations" of traditional age community college students: A prolegomena to any future accountability indicators. *Journal of Applied Research in the Community College*, 12(1), 93–107.
- Allen, W. R. (1992). The color of success: African American college student outcomes at predominantly White and historically Black public colleges and universities. *Harvard Educational Review*, 62(1), 25–43.
- Ancis, J. R., Sedlacek, W. E., & Mohr, J. J. (2000). Student perceptions of campus climate by race. *Journal of Counseling and Development*, 78, 180–185.
- Astin, A. (1993a). How are students affected? *Change*, 25(2), 44–50.
- Astin, A. (1993b). What matters in college. *Liberal Education*, 79(4), 4–17.
- ATD (2005). *Strategies at Achieving the Dream colleges*, from <http://www.achievingthedream.org/CAMPUSSTRATEGIES/STRATEGIESATACHIEVINGTHEDREAM-COLLEGES/default.tp>.

- Bailey, T. R., Jenkins, D., & Leinbach, D. T. (2005). *What we know about community college low-income and minority student outcomes*. New York, N.Y.: Community College Research Center, Columbia University.
- Boylan, H. R., Bliss, L. B., & Bonham, B. S. (1997). Program components and their relationship to student performance. *Journal of Developmental Education, 20*(3), 2–4.
- Bradburn, E. M. (2002). *Short-term enrollment in postsecondary education: Student background and institutional differences in reasons for early departure, 1996–98*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Cabrera, A. F., Alberto, F., Nora, A., Terenzini, P. T., Pascarella, E. T., & Serra, H. L. (1999). Campus racial climate and the adjustment of students to college: A comparison between white students and African-American students. *The Journal of Higher Education, 70*(2), 134–160.
- CCSSE (2005). *Engaging students, challenging the odds: 2005 findings*. Community College Survey of Student Engagement. Austin, TX: The University of Texas at Austin.
- Chaney, B., Muraskin, L. D., Cahalan, M. W., & Goodwin, D. (1998). *Helping the progress of disadvantaged students in higher education: The federal student support services program*. Washington, DC: US Department of Education.
- Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin, 39*(7), 3–7.
- Cruce, T. M., Wolniak, G. C., Seifert, T. A., & Pascarella, E. T. (2006). Impacts of good practices on cognitive development, learning orientations, and graduate degree plans during the first year of college. *Journal of College Student Development, 47*, 365–382.
- Cook, B. J. & Cordova, D. I. (2006). *Minorities in Higher Education*. Twenty-second annual status report. American Council on Education. Washington, D.C.
- DeSousa, J. D., & King, P. M. (1992). Are White students really more involved in collegiate experiences than Black students? *Journal of College Student Development, 33*, 363–369.
- DeSousa, J. D., & Kuh, G. D. (1996). Does institutional racial composition make a difference in what black students gain from college? *Journal of College Student Development, 37*, 257–267.
- EDRFL (2005). *Characteristics of students by place of birth & language spoken in the home: Florida public schools, grades PK-12, 2003–04 school year*. Tallahassee, FL: Office of Economic & Demographic Research.
- Elliot, K. & Healy, M. (2001). Key factors influencing student satisfaction related to recruitment and retention. *Journal of Marketing for Higher Education, 10*, 1–11.
- Flyer, M. (2000). Assistance center helps students make the grade in Nebraska. *Community College Week, 12*(24), 1–3.
- Harris, Z. M., & Kayes, P. (1996). *New statewide regional initiative on creating inclusive educational communities for minority students*. Paper presented at the Annual Convention of the American Association of Community Colleges, Atlanta, Georgia.
- Harvey, W. B. (2001). *Minorities in Higher Education 2000–2001: Eighteenth Annual Status Report*. Washington, DC: American Council on Education.
- Hoachlander, G., Sikora, A. C., & Horn, L. J. (2003). *Community college students: Goals, academic preparation and outcomes* (NCES Publication No. 2003-164). Washington, DC: National Center for Education Statistics.

- Horn, L. J., & Berger, R. (2004). *College persistence on the rise? Changes in 5-Year degree completion and postsecondary persistence rates between 1994 and 2000*. (NCES 2005-156). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Horn, L. J., & Nevill, S. (2006). *Profile of undergraduates in U.S. postsecondary education institutions: 2003–04, with a special analysis of community college students* (NCES Publication No. 2006-184). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Horn, L. J., Peter, K., & Rooney, K. (2002). *Profile of undergraduates in U.S. postsecondary education institutions: 1999–00* (NCES Publication No. 2002-168). Washington, DC: National Center for Education Statistics.
- Horn, L. J., & Premo, M. D. (1995). *Profile of undergraduates in U.S. postsecondary education institutions: 1992–93* (NCES Publication No. 96–237). Washington, DC: National Center for Education Statistics.
- Hu, S., & Kuh, G. D. (2002). Being (dis) engaged in educationally purposeful activities: The influences of student and institutional characteristics. *Research in Higher Education, 43*, 555–575.
- Hudson, L. (2003). Racial/ethnic differences in the path to a postsecondary credential. *Education Statistics Quarterly, 5*(2), 129–133.
- Jacobson, J., Olsen, C., Rice, J. K., Sweetland, S., & Ralph, J. (2001). *Educational Achievement and Black-White Inequality* (NCES Publication No. 2001-061). Washington, DC: National Center for Education Statistics.
- Kolajo, E. F. (2004). From developmental education to graduation: A community college experience. *Community College Journal of Research and Practice, 28*, 365–371.
- Kuh, G. D. (2001). *The National Survey of Student Engagement: Conceptual framework and overview of psychometric properties*. Indiana University, Center for Postsecondary Research. Bloomington, IN.
- Kuh, G. D., Kinzie, J., Cruce, T. M., Shoup, R. & Gonyea, R. M. (2007, Revised). *Connecting the dots: Multi-faceted analyses of the relationships between student engagement results from NSSE, and the institutional practices and conditions that foster student success*. Bloomington, IN: Indiana University Center for Postsecondary Research.
- Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2005). *Student Success in College: Creating conditions that matter*. San Francisco: Jossey-Bass.
- Kuh, G. D., Vesper, N., & Pace, C. R. (1997). The development of process indicators to estimate student gains associated with good practices in undergraduate education. *Review in Higher Education, 38*, 435–454.
- Lee, W. (2001). Toward a more perfect union: Reflecting on trends and issues for enhancing the academic performance of minority transfer students. *New Directions for Community Colleges, 114*, 39–44.
- Levy, P. S., & Lemeshow, S. (1999). *Sampling of populations: Methods and applications*. New York, NY: John Wiley & Sons, Inc.
- Love, B. J. (1993). Issues and problems in the retention of Black students in predominantly White institutions of higher education. *Equity and Excellence in Education, 26*, 27–33.
- MacKay, K. A., & Kuh, G. D. (1994). A comparison of student effort and educational gains of Caucasian and African American students at predominantly white colleges and universities. *Journal of College Student Development, 35*, 217–223.

- Marti, C. N. (in press). Dimensions of student engagement in American community colleges: Using the community college student report in research and practice. *The Community College Journal of Research and Practice*.
- McClenney, K. M., & Greene, T. G. (2005). A tale of two students: Building a culture of engagement in the community college. *About Campus*, (10) 3, 2–7.
- McClenney, K. M. & Marti, C. N. (2007). Exploring relationships between student engagement and student outcomes in community colleges: Report on validation research. Retrieved March 1, 2007 from the Community College Survey of Student Engagement Web site: [http://www.ccsse.org/publications/CCSSE Working Paper on Validation Research December 2006.pdf](http://www.ccsse.org/publications/CCSSE%20Working%20Paper%20on%20Validation%20Research%20December%202006.pdf).
- NCES (2005). *The condition of education 2005*. Washington, DC.: U.S. Department of Education. National Center for Education Statistics.
- NSSE (2000). *National benchmarks of effective educational practice*. National Survey of Student Engagement. Bloomington, IN: Indiana University Center for Postsecondary Research.
- NSSE (2003). *Converting data into action: Expanding the boundaries of institutional improvement*. National Survey of Student Engagement. Bloomington, IN: Indiana University Center for Postsecondary Research.
- Nunez, A., & Cuccaro-Alamin, S. (1998). *First generation students: Undergraduates whose parents never enrolled in postsecondary education*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES).
- Pascarella, E. T. (1980). Student-faculty informal contact and college outcomes. *Review of Educational Research*, 50, 545–595.
- Pascarella, E. T. (1997). It's time we started paying attention to community college students. *About Campus* (January/February), 14–17.
- Pascarella, E. T., Edison, M., Nora, A., Hagedorn, L., & Terenzini, P. T. (1996). Influences on students' openness to diversity and challenge in the first year of college. *Journal of College Student Development*, 67, 174–195.
- Pascarella, E. T., & Terenzini, P. T. (1978). Student-faculty informal relationships and freshman year educational outcomes. *Journal of Educational Research*, 71, 183–189.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research*. San Francisco: Jossey-Bass.
- Perin, D. (2004). Remediation beyond developmental education: The use of learning assistance centers to increase academic preparedness in community colleges. *Community College Journal of Research and Practice*, 28, 559–582.
- Price, D. (2004). Defining the gaps: Access and success at America's community colleges. In K. Boswell & C. Wilson (Eds.), *Keeping America's Promise: A Report on the Future of the Community College*. Denver: Education Commission of the States.
- Prillerman, S. L., Myers, H. F., & Smedley, B. D. (1989). *Stress, well-being and academic achievement in college*. Newbury Park, CA: Sage.
- Raudenbush, S. W., & Bryk, A. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Beverly Hills, CA: Sage.
- Rendon, L. I. (1994, February). *A systematic view of minority students in educational institutions*. Paper presented at the Social Education Foundation Panel on Educational Opportunity and Postsecondary Desegregation, Austin, TX.
- Roueche, J., & Roueche, S. (1993). *Between a rock and a hard place: The at risk student in the open door college*. Washington, DC: American Association of Community Colleges, The Community College Press.

- Sanchez, I. M. (2000). Motivating and maximizing learning in minority classrooms. *New Directions for Community Colleges*, 112, 35–44.
- Schwitzer, A. M., Griffin, O. T., Ancis, J. R., & Thomas, C. (1999). Social adjustment experiences of African American college students. *Journal of Counseling and Development*, 77, 189–197.
- Sedlacek, W. E. (2003). Alternative admissions and scholarship selection measures in higher education. *Measurement and Evaluation in Counseling and Development* 35, 263–272.
- Sedlacek, W. E. (2004). Why we should use noncognitive variables with graduate and professional students. *The Advisor: The Journal of the National Association of Advisors for the Health Professions*, 24 (2), 32–39.
- Seidman, A. (1991). The evaluation of a pre/post admissions/counseling process at a suburban community college: Impact on student satisfaction with the faculty and the institution, retention, and academic performance. *College and University*, 66, 223–232.
- Smedley, B. D., Myers, H. F., & Harrell, S. P. (1993). Minority-status stresses and the college adjustment of ethnic minority freshman. *The Journal of Higher Education*, 64, 434–452.
- Sternberg, R. J. (1985). *Beyond IQ*. London: Cambridge University Press.
- Sternberg, R. J. (1986). *What would better intelligence tests look like?* In *Measures in the college admissions process* (p. 146–150). New York: College Entrance Examination Board.
- Stovall, M. (2000). Using success courses for promoting persistence and completion. *New Directions for Community Colleges*, 112, 45–54.
- Swail, W. S. (with Redd, K. E., and Perna, L. W.). (2003). *Retaining minority students in higher education: A framework for success*. ASHE-ERIC Higher Education Report No. 2. Washington, DC: The George Washington University, School of Education and Human Development.
- Swigart, T. E., & Murrell, P. H. (2001). Factors influencing estimates of gains made among African-American and Caucasian community college students. *Community College Journal of Research and Practice*, 25, 297–312.
- Szelenyi, K. (2001). Minority student retention and academic achievement in community colleges. *ERIC Digests*, ED451859.
- Tinto, V. (1994). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.
- Townsend, B. K. (1994). How universities successfully retain and graduate Black students. *Journal of Negro Education*, 27, 89–125.
- Townsend, B. K., Donaldson, J., & Wilson, T. (2004). Marginal or monumental? Visibility of community colleges in selective higher education journals. *Community College Journal of Research and Practice*, 29, 123–135.
- Watson, L., & Kuh, G. D. (1996). The influence of dominant race environments on student involvement, perception, and educational gains: A look at historically Black and predominantly White liberal arts institutions. *Journal of College Student Development*, 37, 415–424.
- Wirt, J., Choy, S., Rooney, P., Provasnik, S., Sen, A., & Tobin, R. (2004). *The condition of education 2004: Indicator 18. Remediation and degree completion*. Washington, DC: US Department of Education, National Center for Education Statistics.
- Zamani, E. (2000). Sources of information regarding effective retention strategies for students of color. *New Directions for Community Colleges*, 112, 95–104.