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Publisher: Routledge

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The Journal of Educational Research

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/vjer20>

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Published online: 24 Mar 2014.

To cite this article: Gabrielle Maria D'Lima, Adam Winsler & Anastasia Kitsantas (2014) Ethnic and Gender Differences in First-Year College Students' Goal Orientation, Self-Efficacy, and Extrinsic and Intrinsic Motivation, *The Journal of Educational Research*, 107:5, 341-356, DOI: [10.1080/00220671.2013.823366](https://doi.org/10.1080/00220671.2013.823366)

To link to this article: <http://dx.doi.org/10.1080/00220671.2013.823366>

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Ethnic and Gender Differences in First-Year College Students' Goal Orientation, Self-Efficacy, and Extrinsic and Intrinsic Motivation

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ABSTRACT. Critical ethnic and gender gaps exist in college retention and graduation rates. Early achievement motivation may play an important role in student persistence. A sample of undergraduates completed surveys tapping motivation at the beginning ($n = 591$) and end ($n = 232$) of their first semester in college. African American and Caucasian students were more academically self-efficacious than Asian American students. Self-efficacy increased over the semester and was higher for male than female students at both time points. African American and Asian American students were initially more extrinsically motivated than Caucasian students; however, by the end of the semester, all ethnic groups were similar on extrinsic motivation. Female students were more extrinsically motivated and mastery oriented than male students who were more performance oriented. Performance goal orientations were negatively associated with grade point average whereas mastery orientation, intrinsic, and extrinsic motivation were positively associated with academic performance. Implications for higher education are discussed.

Keywords: achievement motivation, ethnic and gender differences, goal orientations, intrinsic/extrinsic motivation

Ethnic minority youth are less likely to enroll, persist, and complete college compared to Caucasian students in the United States. Among 18–24-year-olds, Hispanic American and African American students trail behind Asian American and Caucasian students in college enrollment rates. Only one third of African American and one quarter of Hispanic American students participated in postsecondary education in 2004 compared to almost half of Caucasians and approximately two thirds of Asian Americans (National Center for Educational Statistics, 2004). Moreover, minority students earned less than 200,000 baccalaureate degrees (about 22% of all undergraduate degrees conferred in 2002–2003) compared to Caucasians earning 1,026,114 degrees (about 70% of all undergraduate degrees conferred; National Center for Education Statistics, 2005,

2007). Further, ethnic differences in completion rates can be seen in the discrepancies between 6-year completion rates for a 4-year bachelor's degree, which was highest for Asian/Pacific Islander (69%) and Caucasian students (62%) compared to Hispanic (50%), Black (39%), and Native American (39%) students (National Center for Educational Statistics, 2012).

Given that one in four college students will leave the university during or after freshman year (American College Testing, 2009; National Center for Educational Statistics, 2004), the first year of college is crucial for predicting student adjustment and academic trajectories. Students who drop out of college tend to be the ones who are not performing well academically (Kirby & Sharpe, 2001). Performance in college, particularly in the first semester, is a strong predictor of eventual college retention (DeBerard, Spielman, & Julka, 2004). Although the institutional climate and access to supportive student services can make a difference (Pascarella, 1984), the freshman year of college is generally difficult for students as they are adjusting to the new expectations of college, balancing a variety of responsibilities with desired extracurricular activities, figuring out how to manage their time effectively, feeling academically unprepared and low in academic self-efficacy, and worrying about financial matters (Whitbourne, 2002). It is, therefore, essential for researchers to examine the early motivational profiles of ethnically diverse, first-year college students as such profiles may be related to student performance, retention, and eventual completion of college. Understanding early student motivation may help in providing instruction in a manner that will support students' motivation to successfully complete their college education.

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Motivation can be defined as a synthesis of personal goals, emotions, beliefs, and values about particular tasks. Ford (1992) stated that motivation involves the selective direction (e.g., creating a goal), selective energization (e.g., becoming inspired or driven to complete the goal), and selective regulation (e.g., maintaining or quitting) of goals. Various aspects of achievement motivation have been explored by researchers using a variety of different theoretical perspectives (Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006). Motivation is not unidimensional (Ryan & Deci, 2000); many aspects of motivation exist and we have chosen to focus on goal orientation, self-efficacy, and intrinsic/extrinsic motivation.

Goal Orientation

Goal orientation refers to a conglomerate of goals, beliefs, and attitudes that define an individual's primary reason for engaging in an academic activity or the central goals that he or she is trying to achieve in the academic arena (Ames, 1992). Three commonly investigated types of goal orientations have been investigated: mastery, performance-approach, and performance-avoidance (Elliot & Church, 1997; Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002; Hsieh, Sullivan, & Guerra, 2007; Senko & Harackiewicz, 2002). An individual with a strong mastery orientation has as a primary goal to increase their skills and competence and to master and learn new material (Senko & Harackiewicz, 2002). Mastery goal orientation has been linked with multiple positive outcomes such as higher academic performance as measured by grade point average (GPA), more comprehensive understanding of material, and use of more efficient and self-regulated learning strategies (Ames, 1992; Hsieh et al., 2007; Senko & Harackiewicz, 2002).

In contrast to mastery goal orientation that focuses on effort and its role in competence development, the performance goal orientations focus more on a student's ability (Ames, 1992). The primary goal of students with a strong performance-approach orientation is the desire to surpass peers in performance and gain positive judgments of their proficiency from others (Senko & Harackiewicz, 2002). Performance-avoidance goal orientation is similar to performance-approach in that the emphasis is on maintaining perceptions of one's ability, but persons with strong performance-avoidance orientations are primarily motivated by not looking inferior to their peers and not expending much effort in academic tasks for fear that failure after trying hard would indicate low ability (Elliot & Church, 1997). Performance goals can sometimes be considered effective in the college environment in which students strive to achieve high grades and outperform peers (Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000). Performance-avoidance goal orientation has been found to predict poor academic performance (Hsieh et al., 2007). Despite being associated with work avoidance, performance orientations have been

linked in some cases to rehearsal study strategies, initial and midsemester performance expectations, final course grade, GPA, and subsequent (3 months) GPA (Harackiewicz et al., 2000).

Intrinsic and Extrinsic Motivation

Intrinsic motivation refers to the degree to which an individual engages in a task or activity for its own sake because the task is inherently interesting and pleasurable (Conti, 2000; Klinger, 2006; Ryan & Deci, 2000). On the other hand, extrinsic motivation refers to the context in which a task or activity is completed by an individual primarily for external reasons, for example, obtaining rewards or avoiding punishments (e.g., money for grades, praise or criticism from a parent or teacher, winning or losing a bet, losing a scholarship for poor grades; Klinger, 2006; Ryan & Deci, 2000). Individuals can have both intrinsic and extrinsic reasons for completing a task (Klinger, 2006). Intrinsic and extrinsic motivations share integral roles for students' success in college. Intrinsic motivation shares a positive significant relationship with lecture engagement, SAT scores, mastery goals, academic performance, and meaningful cognitive engagement (Church, Elliot, & Gable, 2001; Conti, 2000). Extrinsic motivation has been positively linked with academic performance (Conti, 2000), but has also been associated with shallow cognitive engagement (Walker, Greene, & Mansell, 2006) and poor autonomy in college students (Conti, 2000).

Academic Self-Efficacy

Academic self-efficacy refers to a student's perceived capability to achieve a certain proficiency level on a given academic task (Meece, Glienke, & Burg, 2006). Bandura (2006) emphasized self-efficacy as an influential trait in individuals' adjustment to change, which indicates the importance of self-efficacy during the first-year of college. Self-efficacy is perhaps best understood in the context of social cognitive theory, which states that people are influenced based on their unique personal qualities, behaviors, and environmental conditions (Schunk & Meece, 2006). Academic self-efficacy moderates the perception of whether an academic task should be judged a threat or considered a challenge (Zajacova, Lynch, & Espenshade, 2005). Students with high self-efficacy tend to persevere in the presence of challenges (Bandura, 2006).

Researchers have found academic self-efficacy to be a stronger predictor of college academic performance than high school GPA and demographic variables (Zajacova et al., 2005). Self-efficacy is positively correlated with mastery goal orientation but unrelated to performance orientations (Clayton, Blumberg, & Auld, 2010). Higher levels of academic self-efficacy are associated with better effort regulation and time-study management (Clayton et al., 2010). Students with higher levels of confidence

in their abilities also tend to be highly engaged in high school (Caraway, Tucker, Reinke, & Hall, 2003) and better adjusted to college (Ramos-Sanchez & Nichols, 2007). Furthermore, higher levels of academic self-efficacy correlate with academic success as measured by GPA (Hsieh et al., 2007; Kitsantas & Zimmerman, 2009) and particularly translate into higher first-year college academic performance (Klomegah, 2007; Zajacova et al., 2005).

Gender Differences in Motivation

Male college students have been found to report more adherence to performance goal orientations than female college students (Cavallo, Potter, & Rozman, 2004). However, female college students' mastery goal orientation has been shown to decrease over an academic semester, whereas male college students' mastery goal orientation increases (Cavallo et al., 2004). Studies examining gender differences in students' intrinsic and extrinsic motivation have reported mixed results. Green and Foster (1986) found women to be more intrinsically motivated than men according to classroom curiosity levels. On the contrary, other studies have found women to be more extrinsically motivated (Boggiano, Main, & Katz, 1991; Davis, Winsler, & Middleton, 2006). Boggiano et al. (1991) indicated that female students were more extrinsically motivated specifically by adult approval than men. College women have been found to outperform men as a group, and to receive more extrinsic rewards historically from parents and teachers than boys, which may be one explanation for female students being more extrinsically motivated than men (Davis et al., 2006). Gender differences in self-efficacy have been found to vary by age and by the specific academic subject area under investigation (Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2004; Wigfield et al., 1991). However, previous research has indicated that male college students report significantly higher academic self-efficacy than female college students (Cavallo et al., 2004).

Ethnic Differences in Motivation

Motivation is crucial for all students at this early point in their academic careers, but perhaps even more so for certain minority groups. However, surprisingly little published research on ethnic group differences in college student motivation exists. The majority of research related to motivation in college students has utilized relatively homogenous, mostly Caucasian, samples.

African American motivation. Race centrality has been suggested to influence and correlate with African American students' academic self-efficacy (Okech & Harrington, 2002; Rodgers, 2008). Although students from all ethnic backgrounds are subjected to their peers' negative labeling and mockery as a result of academic success, African American students who are performing well academically

are exclusively subjected to the accusation of not "being Black" (Witherspoon, Speight, & Thomas, 1997). Rodgers (2008) explained that academically gifted African Americans face a common predicament of assimilating their racial and cultural identity with cognitive ability, which is frequently accompanied by stigma. African American students can experience isolation and identity issues from the lack of peer support geared toward positive academic aims (Steinberg, Dornbusch, & Brown, 1992; Witherspoon et al., 1997). African American (and other minority) students who are reminded of negative stereotypes for performance associated with their ethnic group membership or who experience ethnic stigma or discrimination show higher academic anxiety and lower intrinsic motivation compared to majority children or minorities who experience less stigma (Chavous et al., 2003; Fuligni, 2001; Gillen-O'Neel, Ruble, & Fuligni, 2011; Reyna, 2000). Research examining the motivational characteristics of African Americans finds their academic self-efficacy is positively related to both mastery and performance goal orientations (Long, Monoi, Harper, Knoblauch, & Murphy, 2007). African Americans reported higher academic self-efficacy than Latino/Hispanic American and Asian American students (Edman & Brazil, 2007). Additionally, past literature shows that these students have higher levels of academic self-efficacy than Caucasians, even when the academic performance of African Americans is worse than Caucasian students (Graham, 1994). Edman and Brazil (2007) found academic self-efficacy was, however, not correlated with academic performance for African American students.

Latino/Hispanic American motivation. Research focusing on Latino students has discovered social support and university comfort are strongly correlated with academic persistence (Gloria, Castellanos, Lopez, & Rosales, 2005). In a qualitative study by Hernandez (2000), Latino students expressed that their reasons for remaining in college came largely from family's encouragement and fear of parental disappointment, followed by advice and camaraderie of friends and peers, as well as positive relationships with faculty and staff. The desire to succeed in college was one of the most influential factors on college success as reported by Latino students along with a sense of self-efficacy (Hernandez, 2000). Indeed, self-efficacy is positively correlated with college retention (Gloria et al., 2005). Student motivation acts as a facilitator for college success and graduation. Academic self-efficacy beliefs and achievement motivation are strongly related to college GPA and retention (Edman & Brazil, 2007; Lotkowski, Robbins, & Noeth, 2004). In a study by Gordon Rouse and Austin (2002), Hispanic students were more socially motivated than Caucasian students. Hispanic students with high GPAs were less socially motivated than African Americans with high GPAs, but Hispanic students with low GPAs were more socially motivated than African Americans with low GPAs. Steinberg and colleagues (1992) found

that Latino/Hispanic and African American students performed less satisfactorily in high school and were less likely to give credit to their own hard work for academic success, and claimed that their parents had lower academic standards relative to Asian Americans.

Asian American motivation. Asian American students generally perform relatively well as a group in college and have strong graduate rates (National Center for Educational Statistics, 2004; Sue & Okazaki, 1990). In Asian cultures, immense importance is placed on attaining high levels of education, seen as the ideal path to a successful life and acquiring a high-paying career (Sue & Okazaki, 1990). The notion of performing to one's best for one's elders (e.g., family, professors) and not for the self may lead Asian American students to rely more on extrinsic motivation or performance goal orientation for completing tasks. Asian American students have been found to display higher levels of fear of academic failure (Zusho, Pintrich, & Cortina, 2005). Steinberg and colleagues (1992) analyzed data from a sample that included 15,000 high-school students, of which of about 5,000 were Caucasian students and over 3,000 were from African American, Hispanic, and Asian American groups. Asian American students reported feeling that their parents had very high academic expectations relative to students from other ethnic groups in the study (Steinberg et al., 1992). The study found that Asian Americans performed the best academically in the sample and were more likely than other groups to believe (a) that performing poorly in school would lead to negative consequences, (b) that hard work and effort were the causes of their high achievement, and (c) that their parents had high expectations for academic performance. More than any other group, Asian American students believed that if one did not have a good education, she or he would not be able to get a satisfactory job. Steinberg et al. concluded that Asian American students, on average, have strong beliefs about academic success leading to positive outcomes and that they have a relatively strong fear of failure. This fear of failure combined with greater reports of academic pressure coming from Asian American parents relative to other groups (Steinberg et al., 1992) suggest that Asian American college students may be more extrinsically motivated and performance goal oriented than other ethnic groups. Academic self-efficacy has been found to be a predictor of academic performance for Asian Americans (Edman & Brazil, 2007).

Gender and Ethnicity Differences in Motivation

It is important to examine gender in relation to potential ethnic group differences in motivation. The ethnic group disparities in graduation rates and retention in higher education noted previously are not evenly distributed across gender—African American men and Latino/Hispanic men are at particular risk for dropping out or not enrolling in college. In 2004, African American men earned only 36%

of the undergraduate degrees awarded to African American students. Hispanic American men earned only 41% of undergraduate degrees conferred to all Hispanic American students in the same year. The gender difference in degrees conferred is less striking between Asian American (46% of men) and Caucasian (44% of men; National Center for Educational Statistics, 2007) students. Even more striking are enrollment trends for graduate study. African American students display the largest disparity with men constituting only 29% of African American graduate students. Furthermore, men in all ethnicities are somewhat underrepresented in graduate study: Caucasian (39%), Hispanic American (37%), Asian American (46%), and Native American (35%; National Center for Educational Statistics, 2007).

Research findings show that African American student motivation, in particular, is highly gendered, with African American boys and girls having different beliefs about their abilities and making different attributions for academic success and failures (Evans, Copping, Rowley, & Kurtz-Costes, 2011; Swinton, Kurtz-Costes, Rowley, & Okeke-Adeyanju, 2011). Gordon Rouse and Austin (2002) found African American women with high GPAs exhibited higher levels of motivation in self-concept beliefs than African American men and African American women with low GPAs. Similarly, Rayle, Arredondo, and Robinson Kurpius (2005) found no ethnic differences in female undergraduates' academic self-efficacy between Caucasian women and women of color.

Research Study Aims

The present study adds to the literature in several ways. First, ours is one of the few studies examining ethnic and gender differences among college undergraduates within the same study. Second, it involves a reasonably large ($n = 591$) sample of college students at a major university during their first year of studies, a critical period in terms of academic trajectories and retention. Third, we examine multiple aspects of motivation (goal orientation, intrinsic/extrinsic motivation, and academic self-efficacy) longitudinally, both at the beginning and end of the first semester, to examine patterns over time, a gap in the literature identified by Wigfield and Cambria (2010). Finally, we also examined freshman student academic performance (GPA) in their first semester and relate the motivational variables to performance. Given ethnic disparities in higher education, it is imperative to examine potential differences in early academic motivation for different ethnic minority groups in today's increasingly diverse student population. Researchers note that there are few empirical studies on ethnic and gender differences in motivation (Midgley, Kaplan, & Middleton, 2001). In the present study, we explore ethnic and gender differences in first-year college student self-efficacy, intrinsic and extrinsic motivation, and goal orientation over the course of their first semester, and examine links with first-semester academic performance.

The following research questions were explored:

Research Question 1: Are there gender or ethnic group differences in goal orientation, academic self-efficacy, and intrinsic/extrinsic motivation at the beginning of the semester?

Research Question 2: Are there gender-by-ethnicity interactions in goal orientations, academic self-efficacy, and intrinsic/extrinsic motivation at the beginning of the semester?

Research Question 3: Are there gender or ethnicity differences in end-of-semester academic performance?

Research Question 4: To what extent are goal orientations, academic self-efficacy, and intrinsic/extrinsic motivation related to academic performance (GPA), and do these relationships differ by gender or ethnicity?

Research Question 5: Do goal orientation, academic self-efficacy, and intrinsic/extrinsic motivation vary over time, and are there gender and ethnic differences in changes in motivation?

Based on previous research, we hypothesized that women would report being more extrinsically and intrinsically motivated than men, report higher mastery goal orientation, and report less performance goal orientation and lower academic self-efficacy. We made few a priori hypotheses concerning Latino/Hispanic and Asian college students due to the limited research on achievement motivation for these subpopulations. Predictions of ethnic differences in motivation included: (a) African Americans would report high academic self-efficacy and low extrinsic motivation; (b) Latino/Hispanic Americans would report high extrinsic motivation and low academic self-efficacy; and (c) Asian Americans would report high extrinsic motivation, high performance orientations, and low academic self-efficacy. Gender and ethnicity were predicted to interact, in that, specifically, African American women would report higher academic self-efficacy than African American men. Predicted differences in GPA were that women would achieve better GPAs than men, and Caucasians would achieve better GPAs than minority students, similar to findings by Edman and Brazil (2007). All motivation variables were predicted to be positively correlated with academic performance except for performance-avoidance goal orientation. Academic self-efficacy is predicted to be less related to academic performance for women and Asian Americans compared to other groups. There was not sufficient prior empirical guidance to make directional hypotheses of changes in motivational variables over time by ethnicity.

Method

Participants

During the first 3 weeks of their first (fall) semester, 591 students from a large, highly ethnically diverse mid-Atlantic university enrolled in introductory communica-

tion, psychology, biology, or university 100 courses participated in this survey study. These introductory courses were selected for this study based on the high enrollment rates. Participants were mostly freshmen during their first semester ($n = 556$) with a nominal percentage of freshmen transfer students from community college pursuing their second semester (4%) or sophomore year (2%). Women ($n = 370$; 63%) constituted a slight majority of the participants. The ethnic demographics of participants were: 367 Caucasian students (62%), 41 African American students (7%), 29 Latino/Hispanic students (5%), 101 Asian American students (17%), and 53 other/mixed students (9%). Ethnic group was determined by self-identification on the survey item and verified from university records. Participant demographics closely matched the larger college student population of which participants were recruited (Office of Institutional Assessment, 2004). At the end of the semester (last 2 weeks), 232 participants were available to complete the T2 questionnaire (39% of the T1 sample). Independent sample t and chi-square tests were conducted to determine whether students who returned the survey at the end of the semester were significantly different on motivation variables, end-of-semester GPA, ethnicity, or gender from those who did not participate. Students who completed the T2 survey were not significantly different than students who did not participate in terms of gender, ethnicity, and beginning-of-the-semester motivation profiles. However, students who completed the T2 survey achieved significantly higher GPAs in their first semester than those who did not participate in the T2 assessment.

Measures

Intrinsic/Extrinsic motivation. The intrinsic and extrinsic motivation subscales of the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich, Smith, Garcia, & McKeachie, 1991) were used with each scale subscale consisting of four items, in which larger values indicate more intrinsic or extrinsic motivation. The MSLQ has been widely used in motivation research (Bong & Hoocevar, 2002; Huang, 2008; Klomegah, 2007; McClendon, 1996) with internal consistency reliabilities from the original instrument reported to be .74 for the intrinsic subscale and .62 for extrinsic subscale. The Cronbach's alpha values for the present sample were .67 for intrinsic motivation and .71 for extrinsic motivation.

Self-efficacy and goal orientation. The Patterns for Adaptive Learning Scales (PALS) was used to measure student goal orientation including mastery goal orientation, performance-approach goal orientation and performance-avoidance goal orientation, as well as academic self-efficacy (Midgley et al., 2000). The PALS subscales for mastery goal and performance-approach orientations and self-efficacy included five items each, whereas the performance-avoidance

subscale had four items (Midgley et al., 2000). Students rated themselves on a 5-point Likert-type scale ranging from 1 (*not at all true*) to 5 (*very true*). The PALS has also been used widely in motivation research (Jagacinski & Duda, 2001; Ross, Shannon, Salisbury-Glennon, & Guarino, 2002; Urdan & Midgley, 2003) with internal consistency reliabilities from the original instrument reported to be .78 for academic self-efficacy, .85 for mastery, .89 for performance-approach, and .74 performance-avoidance orientations. Cronbach's alpha values for the present sample were .75 for academic self-efficacy, .87 for mastery orientation, .70 for performance-approach, and .75 for performance-avoidance.

Academic performance. Student GPA was obtained with student permission from university records for the semester in which they completed the surveys.

Procedure

At both T1 (the first 3 weeks of the semester) and at T2 (the last 2 weeks of the semester), students were asked as a group in their course to complete the survey either in class or to return the survey the next week in class. Students in some courses received 1–2 extra-credit points for filling out the measures. Students completed informed consent forms and the research was approved by the university's institutional review board.

Results

Data were initially explored for outliers, skewness, data entry errors, and distributional assumptions. Scores were all within reasonable range with distributions satisfactory for parametric analyses. Our strategy for data analyses was to first examine ethnic and gender differences with the full T1 sample of 591 students via a 2 Gender (male, female) \times 5 Ethnicity (Caucasian, African American, Hispanic American, Asian American, other) analysis of variance (ANOVA) for each motivation construct (i.e., intrinsic and extrinsic motivation, the three goal orientations, and self-efficacy). To explore change over the course of the first semester in motivation by gender and ethnicity, we conducted one-way repeated-measures ANOVAs (first gender and then ethnicity—sample size was not large enough to include both factors together) with the smaller subsample ($n = 232$) of students who had completed both the T1 and T2 surveys. Given relatively small cell sizes and the preliminary nature of this area of inquiry, we interpret significant differences with alpha $< .05$ and cautiously interpret marginally significant findings with alpha $< .10$.

Mastery Goal Orientation

Beginning of semester. The 2 (Gender) \times 5 (Ethnicity) ANOVAs revealed no significant gender, $F(1, 569) = 3.28$, $p = .071$, $\eta^2_{\text{partial}} = .006$; ethnicity, $F(4, 569) = 1.88$, $p =$

$.113$, $\eta^2_{\text{partial}} = .013$; or gender-by-ethnicity interaction effects, $F(4, 569) = 0.985$, $p = .415$, $\eta^2_{\text{partial}} = .007$. However, in support of our hypothesis, the gender effect approached significance with female students reporting higher mastery goal orientation scores than male students. Table 1 displays means and standard deviations for all motivation variables and for academic performance by each gender and ethnic group; different numerical superscripts represent the type of effect (i.e., gender, ethnicity, or interaction) and letter superscripts represent significant or approaching significant differences between groups.

Over time. Table 2 displays the T1 and T2 means and standard deviations for the smaller, repeated measures sample. The repeated measures ANOVAs examining potential gender differences revealed a significant effect, as hypothesized, in which women were more mastery goal oriented across both time periods, $F(1, 230) = 4.00$, $p = .047$, $\eta^2_{\text{partial}} = .017$. No significant time effect, $F(1, 230) = 0.61$, $p = .437$, $\eta^2_{\text{partial}} = .003$, or time-by-gender interaction, $F(1, 230) = 0.24$, $p = .625$, $\eta^2_{\text{partial}} = .001$, was found. There were no significant findings from the repeated-measures ANOVAs examining ethnic differences: time effect, $F(1, 227) = 2.63$, $p = .106$, $\eta^2_{\text{partial}} = .011$; ethnicity, $F(4, 227) = 0.71$, $p = .584$, $\eta^2_{\text{partial}} = .012$; or time by ethnicity interaction, $F(4, 227) = 1.00$, $p = .407$, $\eta^2_{\text{partial}} = .017$.

Performance-Approach Goal Orientation

Beginning of semester. Examination of the 2 \times 5 ANOVAs examining gender and ethnicity differences for performance-approach orientation revealed a significant gender effect, $F(1, 569) = 23.66$, $p < .001$, $\eta^2_{\text{partial}} = .040$; a nonsignificant ethnicity main effect, $F(4, 569) = 1.21$, $p = .304$, $\eta^2_{\text{partial}} = .008$; and a gender-by-ethnicity interaction that approached significance, $F(4, 569) = 2.04$, $p = .087$, $\eta^2_{\text{partial}} = .014$. As hypothesized, male students reported being significantly more performance-approach oriented than did female students across the entire sample, but interestingly, when looking at each ethnic group separately, Caucasian male students were slightly more performance-approach oriented than were their female counterparts but only marginally so. Due to the limited ethnic subgroup sample sizes, power might have been an issue in detecting a significant difference between gender groups within each ethnicity.

Over time. The repeated-measures ANOVA examining change over time by gender showed a significant time effect, $F(1, 229) = 13.78$, $p < .001$, $\eta^2_{\text{partial}} = .056$; a significant gender effect, $F(1, 229) = 9.21$, $p = .003$, $\eta^2_{\text{partial}} = .039$; and time-by-gender interaction approaching significance, $F(1, 229) = 2.98$, $p = .085$, $\eta^2_{\text{partial}} = .012$. All students' performance-approach scores increased over time, but as hypothesized, men reported being more approach

TABLE 1. Descriptive Statistics For College Freshmen and Motivation at Time 1

Motivation construct	Ethnic group														Entire sample			
	Caucasian		African American		Hispanic American		Asian American		Other		Overall		Overall					
	Male	Female	Overall	Male	Female	Overall	Male	Female	Overall	Male	Female	Overall	Male	Female	Overall	Male	Female	Overall
Academic self-efficacy ^{1,2†}																		
n	140	217	357	18	24	42	12	19	31	32	69	101	13	35	48	215	364	579
M	4.11	3.98	4.03 ^{2A}	4.31	4.07	4.17 ^{2A}	4.45	3.78	4.04	4.02	3.68	3.79 ^{2B}	4.28	3.79	3.79	4.14 ^{1A}	3.90 ^{1B}	3.99
SD	0.74	0.70	0.72	0.67	0.69	0.69	0.48	0.86	0.80	0.79	0.69	0.74	1.00	0.59	0.74	0.75	0.71	0.73
Extrinsic motivation ²																		
n	143	220	363	18	24	42	12	19	31	32	67	99	13	36	49	218	366	584
M	5.48	5.63	5.57 ^A	6.29	5.66	5.93 ^B	5.54	6.00	5.82	6.09	5.88	5.95 ^B	5.67	5.63	5.64	5.65	5.69	5.68
SD	1.05	1.00	1.08	0.74	1.38	1.18	0.96	0.71	0.83	0.74	0.90	0.85	0.98	1.15	1.10	1.02	1.07	1.05
Intrinsic motivation ³																		
n	143	220	363	18	24	42	12	19	31	32	67	99	13	36	49	218	366	584
M	4.68 ^A	4.91 ^B	4.82	5.18	4.77	4.95	4.92	4.71	4.79	5.02	4.62	4.75	4.90	4.85	4.87	4.80	4.83	4.82
SD	1.10	1.00	1.04	1.25	1.02	1.13	0.92	1.29	1.15	0.85	1.06	1.01	1.13	0.79	0.88	1.08	1.01	1.04
Mastery goal orientation ^{1†}																		
n	140	217	357	18	24	42	12	19	31	32	69	101	13	35	48	215	364	579
M	4.16	4.31	4.26	4.42	4.43	4.42	4.32	4.46	4.41	4.17	4.16	4.16	3.82	4.32	4.18	4.17 ^A	4.30 ^B	4.26
SD	0.69	0.73	0.72	0.65	0.91	0.80	0.50	0.61	0.57	0.74	0.64	0.67	1.00	0.57	0.73	0.71	0.71	0.71
Performance-approach orientation ^{1,3†}																		
n	140	217	357	18	24	42	12	19	31	32	69	101	13	35	48	215	364	579
M	2.86 ^A	2.65 ^{3B}	2.73	3.32	2.63	2.87	3.23	2.11	2.54	3.30	2.74	2.92	3.15	2.47	2.66	3.00 ^{1A}	2.61 ^{1B}	2.76
SD	1.12	1.10	1.11	1.10	1.21	1.22	1.11	0.75	1.05	1.30	1.09	1.18	0.94	1.00	1.02	1.15	1.08	1.12
Performance-avoidance ¹																		
n	140	217	357	18	24	42	12	19	31	32	69	101	13	35	48	215	364	579
M	3.06	2.87	2.95	3.38	2.83	3.07	3.56	2.55	2.94	3.31	2.92	3.05	3.10	2.91	2.96	3.15 ^A	2.87 ^B	2.97
SD	1.01	0.98	1.00	1.07	0.99	1.05	1.20	0.88	1.12	1.09	0.90	0.98	1.01	0.95	0.96	1.04	0.96	1.00
Grade point average ¹																		
n	138	212	350	18	22	40	10	18	28	30	67	97	12	35	47	208	354	562
M	2.62	2.82	2.74	2.71	2.39	2.53	2.63	2.86	2.78	2.48	2.59	2.55	2.60	2.78	2.73	2.61 ^A	2.75 ^B	2.70
SD	0.80	0.80	0.81	0.70	0.73	0.73	0.56	0.53	0.54	1.02	0.82	0.88	0.79	0.87	0.84	0.81	0.80	0.81

Note. Means with different letter superscripts are significantly different from each other, and the effect in question (when there is more than one) is noted by the number: ¹significant gender main effect ($p < .05$); ²significant ethnicity main effect ($p < .05$); ³significant interaction effect ($p < .05$); [†] $p < .10$.

TABLE 2. Descriptive Statistics for College Freshman at Beginning and End of Semester

Motivation construct	Beginning of semester					End of semester				
	Caucasian	African American	Hispanic American	Asian American	Other	Caucasian	African American	Hispanic American	Asian American	Other
Self-efficacy ^{3†}										
n	148	18	10	35	21	148	18	10	35	21
M	4.02	4.14	4.32	3.64	3.96	4.27 ^B	4.21 ^B	4.18	3.87 ^A	4.07
SD	0.72	0.60	0.42	0.77	0.72	1.16	0.98	0.60	0.69	1.09
Extrinsic										
n	154	18	10	35	22	154	18	10	35	22
M	5.55	6.04	5.98	5.90	5.53	5.28	5.68	5.40	5.36	5.43
SD	1.11	1.00	0.30	0.85	1.20	1.04	1.16	0.75	1.19	2.79
Intrinsic										
n	154	18	10	33	22	154	18	10	33	22
M	4.88	5.06	4.95	4.68	4.84	4.75	4.68	4.85	4.77	4.65
SD	1.02	1.23	0.94	1.14	0.95	0.94	.81	0.65	0.92	1.25
Mastery										
n	148	18	10	35	21	148	18	10	35	21
M	4.28	4.37	4.44	4.14	4.36	4.25	4.24	3.90	4.08	4.44
SD	0.73	0.77	0.35	0.70	0.79	0.89	0.91	0.44	0.75	1.08
Performance-approach ³										
n	148	18	10	35	20	148	18	10	35	20
M	2.57	2.82	2.44	3.04	2.44	2.88 ^A	3.51 ^B	2.70	3.23 ^B	2.14 ^A
SD	1.10	1.25	0.90	1.09	1.07	1.30	1.24	1.23	0.98	0.90
Performance-avoidance ³										
n	148	18	10	35	21	148	18	10	35	21
M	2.83	3.10	2.98	3.20	2.81	2.97 ^A	3.65 ^B	2.83	3.34 ^B	2.58 ^A
SD	0.96	0.98	1.06	0.98	0.99	1.13	1.22	1.20	1.00	1.11

Motivation construct	Beginning of semester			End of semester		
	Male students	Female students	All students	Male students	Female students	All students
Self-efficacy ^{1,5}						
n	83	149	232	83	149	232
M	4.17	3.87	3.98 ^{5A}	4.26 ^{1A}	4.14 ^{1B}	4.18 ^{5B}
SD	0.68	0.72	0.72	1.43	0.80	1.06
Extrinsic ^{2,5}						
n	86	153	239	86	153	239
M	5.63 ^{2A}	5.67	5.65 ^{5A}	5.11 ^{2B}	5.47	5.34 ^{5B}
SD	1.01	1.09	1.06	1.13	1.39	1.31
Intrinsic ^{5†}						
n	85	152	237	85	152	237
M	4.79 ^A	4.91 ^B	4.87	4.66 ^A	4.79 ^B	4.74
SD	1.10	1.00	1.04	1.03	0.89	0.94
Mastery ¹						
n	83	149	232	83	149	232
M	4.14	4.36	4.28	4.13 ^A	4.28 ^B	4.23
SD	0.74	0.70	0.72	0.95	0.83	0.88
Performance-approach ^{1,2,5†}						
n	83	148	231	83	148	231
M	2.82 ^{2A}	2.54 ^{2B}	2.64 ^{5A}	3.27 ^{1A,2A}	2.71 ^{1B,2B}	2.91 ^{5B}
SD	1.13	1.09	1.11	1.34	1.15	1.25
Performance-avoidance ^{1,5†}						
n	83	149	232	83	149	232
M	3.09	2.82	2.91 ^{5A}	3.28 ^{1A}	2.90 ^{1B}	3.03 ^{5B}
SD	0.99	0.96	0.98	1.17	1.10	1.14

Note. Accompanying letter superscripts represent which groups are different from each other, and means with a number indicate a significant effect: ¹significant gender main effect ($p < .05$); ²significant gender-by-time interaction ($p < .05$); ³significant ethnicity main effect ($p < .05$); ⁴significant ethnicity-by-time interaction ($p < .05$); ⁵significant time main effect ($p < .05$); [†] $p < .10$.

oriented than women at both time points. Male students' scores increased at a higher rate than women's scores, but not statistically significantly so. The repeated-measures ANOVA examining ethnicity revealed a significant ethnic main effect, $F(4, 226) = 3.24, p = .013, \eta^2_{\text{partial}} = .054$, and significant time effect, $F(1, 226) = 3.80, p = .053, \eta^2_{\text{partial}} = .017$. In addition to supporting our hypothesis that Asian American students would have higher levels of performance-approach orientation, we also found that African American students reported higher levels of performance-approach orientation compared to Caucasian students. The group of other students was less performance-approach oriented than Caucasian, African American, and Asian American students. No significant time-by-ethnicity interaction was found, $F(4, 226) = 1.76, p = .138, \eta^2_{\text{partial}} = .030$.

Performance-Avoidance Goal Orientation

Beginning of semester. Results from the 2×5 ANOVAs for performance-avoidance orientation similarly supported our hypothesis with a significant gender effect, $F(1, 569) = 13.85, p < .001, \eta^2_{\text{partial}} = .024$, in which male students were more performance-avoidance oriented. Students did not significantly differ in performance-avoidance orientation by ethnicity, $F(4, 569) = 0.55, p = .702, \eta^2_{\text{partial}} = .004$; nor was the gender-by-ethnicity interaction significant, $F(4, 569) = 1.47, p = .209, \eta^2_{\text{partial}} = .010$.

Over time. A repeated-measures ANOVA examining gender differences revealed a time effect approaching significance, in which all students' scores increased some over the course of the first semester, $F(1, 230) = 3.55, p = .061, \eta^2_{\text{partial}} = .015$. As hypothesized, male students had significantly higher performance-avoidance scores than female students at both time points, $F(1, 230) = 7.11, p = .008, \eta^2_{\text{partial}} = .030$. No significant time-by-gender interaction was found, $F(1, 230) = 0.58, p = .447, \eta^2_{\text{partial}} = .002$. As was the case with performance-approach orientation, the repeated-measures ANOVA examining ethnic differences revealed Asian American and African American students were also more performance-avoidant at both time points than Caucasian, and other students, $F(4, 227) = 2.57, p = .039, \eta^2_{\text{partial}} = .043$. No significant time effect, $F(1, 227) = 0.75, p = .388, \eta^2_{\text{partial}} = .003$, nor time-by-ethnicity interaction, $F(4, 227) = 1.48, p = .209, \eta^2_{\text{partial}} = .025$, was found.

Extrinsic Motivation

Beginning of semester. The 2 (Gender) \times 5 (Ethnicity) ANOVA of T1 scores on extrinsic motivation indicated a significant ethnic effect, $F(4, 577) = 3.473, p = .008, \eta^2_{\text{partial}} = .027$. Least significant difference (LSD) post hoc analyses partially supported our hypothesis indicating higher levels of extrinsic motivation in Asian Americans com-

pared to Caucasians; interestingly, African Americans also reported higher extrinsic motivation than Caucasians. Contrary to our hypothesis, there was no gender effect, $F(1, 577) = 0.006, p = .936, \eta^2_{\text{partial}} = .000$, nor gender-by-ethnicity interaction, $F(4, 577) = 1.300, p = .269, \eta^2_{\text{partial}} = .013$, for extrinsic motivation. Men and women displayed the same pattern across all ethnicities at T1.

Over time. The repeated-measures ANOVA on extrinsic motivation examining gender did not reveal a significant gender effect, $F(1, 237) = 2.04, p = .155, \eta^2_{\text{partial}} = .009$, but did reveal a significant time effect, $F(1, 237) = 19.72, p < .001, \eta^2_{\text{partial}} = .077$, and a significant time-by-gender interaction, $F(1, 237) = 4.12, p = .044, \eta^2_{\text{partial}} = .017$. All students' extrinsic motivation scores decreased over the semester; however, men's extrinsic motivation scores decreased over time more drastically than women's scores, which is in line with the hypothesis that female students would report higher levels of extrinsic motivation. Contrary to our hypotheses, in the repeated-measures ANOVA examining ethnic differences, no significant ethnicity effect, $F(4, 234) = 1.03, p = .391, \eta^2_{\text{partial}} = .017$, nor time-by-ethnicity interaction, $F(4, 234) = 0.66, p = .619, \eta^2_{\text{partial}} = .011$, was found; however, a significant time effect was observed, $F(1, 234) = 9.98, p = .002, \eta^2_{\text{partial}} = .040$. All students across ethnicities experienced a decrease in extrinsic motivation.

Intrinsic Motivation

Beginning of semester. College students did not significantly differ in their report of intrinsic motivation by gender, $F(1, 574) = 1.679, p = .196, \eta^2_{\text{partial}} = .003$, or ethnicity, $F(4, 574) = 0.323, p = .863, \eta^2_{\text{partial}} = .002$. A significant gender-by-ethnicity interaction was found, $F(4, 584) = 2.35, p = .053, \eta^2_{\text{partial}} = .016$. Except for Caucasians, men in all ethnic groups demonstrated higher levels of intrinsic motivation; however, Caucasian women reported significantly higher intrinsic motivation compared to Caucasian men. These results are contrary to our hypothesis that women would generally have higher levels of intrinsic motivation than men.

Over time. The repeated-measures ANOVA examining gender differences in intrinsic motivation did not demonstrate a significant time-by-gender interaction, $F(1, 235) = 0.015, p = .902, \eta^2_{\text{partial}} = .000$, nor a gender main effect, $F(1, 235) = 1.15, p = .285, \eta^2_{\text{partial}} = .005$. The time effect for intrinsic motivation, when examining by gender, approached significance, $F(1, 235) = 3.48, p = .063, \eta^2_{\text{partial}} = .015$. Male students' intrinsic motivation decreased slightly more than female students' intrinsic motivation. Similarly, the repeated-measures ANOVA examining ethnic differences in intrinsic motivation showed no significant time effect, $F(1, 232) = 2.15, p = .144, \eta^2_{\text{partial}} = .009$; no significant ethnicity effect, $F(4, 232) = 0.15, p = .961, \eta^2_{\text{partial}} =$

.003; and no time-by-ethnicity interaction, $F(4, 232) = 0.71$, $p = .588$, $\eta^2_{\text{partial}} = .012$. All ethnic groups remained similarly intrinsically motivated throughout the semester.

Academic Self-Efficacy

Beginning of semester. A 2×5 ANOVA revealed a statistically significant gender effect, $F(1, 569) = 16.931$, $p < .001$, $\eta^2_{\text{partial}} = .029$, and an ethnicity main effect approaching significance, $F(4, 569) = 2.001$, $p = .093$, $\eta^2_{\text{partial}} = .014$. As hypothesized, male students displayed more positive beliefs than female students about their academic abilities at the start of semester. Significant LSD post hoc analyses showed that African Americans and Caucasians reported significantly higher levels of self-efficacy than Asian American students. These results partially supported our hypotheses that African Americans would report high levels of academic self-efficacy, and Asian Americans would report low levels of academic self-efficacy. There was no significant gender-by-ethnicity interaction for academic self-efficacy, $F(4, 569) = 1.454$, $p = .215$, $\eta^2_{\text{partial}} = .010$.

Over time. The repeated-measures ANOVA examining change by gender over the first semester, demonstrated a significant time effect, $F(1, 230) = 5.59$, $p = .019$, $\eta^2_{\text{partial}} = .024$, and a significant gender effect, $F(1, 230) = 4.47$, $p = .036$, $\eta^2_{\text{partial}} = .033$. All students' academic self-efficacy increased significantly over the semester, and men continued to have higher academic self-efficacy at both time points, which was in line with our hypothesis that male students would report a higher level of academic self-efficacy than female students. There was no significant time-by-gender interaction, $F(1, 230) = 1.64$, $p = .202$, $\eta^2_{\text{partial}} = .007$. The repeated-measures ANOVA analyzing ethnicity found the ethnicity-by-time interaction, $F(4, 227) = 0.43$, $p = .785$, $\eta^2_{\text{partial}} = .008$, and time effect, $F(1, 227) = 0.93$, $p = .337$, $\eta^2_{\text{partial}} = .004$, to be nonsignificant. Each ethnic group remained similar in their self-efficacy across the semester. However, in line with our hypotheses, an ethnic main effect approaching significance demonstrated that Asian American students were somewhat less academically self-efficacious than Caucasian and African American students, $F(4, 227) = 2.32$, $p = .057$, $\eta^2_{\text{partial}} = .039$.

Academic Performance and GPA

Gender and ethnic differences. A 2 (Gender) \times 5 (Ethnicity) ANOVA was conducted on students' official college GPA obtained for their first semester. See the last row in Table 1 for GPA by gender and ethnicity. The hypothesized main effect was found for gender in which female university students had higher GPAs ($M = 2.75$, $SD = 0.80$) than male students ($M = 2.61$, $SD = 0.81$), $F(1, 530) = 13.398$, $p < .001$, $\eta^2_{\text{partial}} = .026$. Contrary to our hypotheses, there was no significant difference in first-semester GPA as a function of ethnicity, $F(4, 530) = 1.037$, $p = .388$, $\eta^2_{\text{partial}} = .008$.

Motivation and academic performance at T1. The final research question examined relations between the motivation variables and GPA, and whether the same patterns were observed for all ethnic and gender groups. As predicted, when examining all students, regardless of ethnicity or gender, performance-approach orientation and end-of-semester GPA were significantly inversely related, $r(225) = -.09$, $p = .041$; however, other motivation constructs at the beginning of the semester did not share a significant relationship with academic performance. Bivariate correlations conducted within ethnic groups only revealed several significant relationships at the beginning of the semester. Intrinsic motivation, $r(349) = .10$, $p = .064$, and academic self-efficacy, $r(343) = .10$, $p = .068$, each shared a marginally significant positive relationship with GPA for Caucasian students. Extrinsic motivation, $r(40) = .26$, $p = .103$, and GPA shared a marginal positive relationship for African American students. Table 3 displays the bivariate correlations among the motivation variables measured at T1.

Motivation and academic performance at T2. End-of-the-semester bivariate correlation analyses revealed stronger relationships, perhaps due to students' better understanding of their motivation styles and adjusting to the university atmosphere. Our results matched our hypotheses regarding motivation constructs being significantly related to academic performance, except for academic self-efficacy. Extrinsic motivation, $r(231) = .15$, $p = .022$; intrinsic motivation, $r(230) = .20$, $p = .003$; mastery orientation, $r(226) = .13$, $p = .055$; performance-approach orientation, $r(225) = -.16$, $p = .014$; and performance-avoidance orientation, $r(226) = -.16$, $p = .017$, each shared a significant relationship with performance in the direction hypothesized. Female students demonstrated a significant relationship between academic self-efficacy and end-of-semester GPA, $r(147) = .19$, $p = .023$. In no case, were the correlations between the motivation variables and GPA different for different subgroups according to Fisher's test of the difference between two independent correlations. It is interesting to note a few preliminary patterns, however. For African American students, extrinsic motivation was strongly positively associated, $r(17) = .42$, $p = .094$, with first-semester GPA at marginal significance whereas performance-avoidant goal orientation was strongly negatively associated, $r(17) = -.49$, $p = .049$, with GPA. Finally, performance-approach orientation for Asian students was negatively associated with GPA, $r(33) = -.37$, $p = .034$. These results indicate that performance goal orientations may be maladaptive for academic performance.

Discussion

Given ethnic and gender group differences in college enrollment, retention, and graduation (National Center for Educational Statistics, 2005) and the important role that achievement motivation plays in predicting academic performance and persistence (D. Allen, 1999; J. Allen,

TABLE 3. Correlations Among Motivation Variables at T1 and End-of-Semester Grade Point Average

Subscale	Academic self-efficacy	Extrinsic motivation	Intrinsic motivation	Mastery orientation	Performance-approach	Performance-avoidance	Grade point average T2
Academic self-efficacy	—						
Extrinsic motivation	.23***	—					
Intrinsic motivation	.46***	.24***	—				
Mastery orientation	.51***	.31***	.42***	—			
Performance-approach	.17***	.23***	.03	.03	—		
Performance-avoidance	.08*	.20***	.00	.00	.74***	—	
Grade point average	.19*	.15*	.20*	.13	-.16*	-.16*	—

* $p < .05$. *** $p < .001$.

Robbins, Casillas, & Oh, 2008; Hernandez, 2000), it is important to examine potential ethnic and gender differences in early motivational profiles in college. This study examined ethnic and gender differences in academic self-efficacy, intrinsic/extrinsic motivation, and goal orientation among first-year college students over their first semester, and links between these constructs and student academic performance. Findings revealed a number of ethnic and gender differences as well as interactions in motivation that replicate and extend prior work in the area in important ways. The majority of hypotheses were supported by the results.

Motivation and Academic Performance

Academic performance plays a crucial role in persistence in postsecondary education (Kirby & Sharpe, 2001). As hypothesized, the analyses conducted with this sample revealed that students were more likely to get higher grades in their first semester if they were high in intrinsic or extrinsic motivation, and high in mastery goal orientation. Specifically, for female students, academic self-efficacy at the end of the semester was positively related to their academic performance. Performance goal orientations were negatively associated with academic performance in this study—that is, the more performance-approach and performance-avoidance oriented the student was, the lower his or her GPA was. It is important to mention that although much research has framed mastery goal orientation as providing positive benefits, Senko, Hulleman, and Harackiewicz (2011) noted that rather than a direct relationship existing between mastery goal orientation and academic performance, the relation may be indirect, mediated by other motivational variables. Due to different definitions of performance goals (e.g., performance-approach or performance-avoidance, requirement of social norm comparison or demonstration of competence), performance orientations have evidenced both positive and negative relationships with academic performance (for a review, see Senko et al., 2011). Specifically, Hulleman, Schragger, Bodmann, and Harackiewicz (2010) conducted a meta-analysis

of achievement goal orientations, and found that when measurement of performance orientations focuses on the normative comparison aspect (i.e., outperforming others), performance goal orientations were positively correlated with academic performance. On the contrary, when the demonstration of competence was the main focus, performance goal orientations were negatively correlated with academic performance (Hulleman et al., 2010). The measure used in the present study focused on the competence demonstration component of performance goal orientations, and similar to other studies with this focus, we found a negative relationship between performance orientations and academic performance. Thus, students who are high on performance orientation (and low on the other motivational indicators) may be at higher risk for poor performance and eventually dropping out of college. Compared to performance goals, which depend on other students' performance and comparisons to a student's own ability, individual student mastery goals are a better target for intervention and are ultimately easier for students to monitor and achieve (Senko et al., 2011). It is essential for college administrators and faculty to attend to and enhance student motivation that encourages students to actively participate in learning, engage in behaviors to improve themselves as learners, and apply the skills learned in classes (Ames, 1990). The constructs observed in the present study (self-efficacy, goal orientation, intrinsic/extrinsic motivation) have been found to be amenable to change through systematic self-regulatory interventions (Kitsantas & Zimmerman, 2009; Zimmerman & Schunk, 2008). Such interventions may lead to better academic performance and ultimately to better student academic persistence throughout college.

Ethnicity

As hypothesized, at the beginning of their first semester, African American students had high academic self-efficacy, similar to Caucasian students, compared to Asian American students at T1 and T2; this is contrary to previous research in which African Americans reported themselves to be less

academically self-efficacious than other ethnic groups (Steinberg et al., 1992). This discrepancy between the current study and previous research may be related to the younger age of participants in prior research (Steinberg et al., 1992). This discrepancy with previous research could also be due to the fact that in the present study we examined African American students after they had been accepted to enter a competitive university, which may provide a boost in confidence. African American college students have been found to have moderate levels of self-efficacy, with individual differences predicting academic performance and class participation (Gaylon, Blondin, Yaw, Nalls, & Williams, 2012).

At the beginning of the semester, African and Asian American students were significantly more extrinsically motivated than Caucasians, but by the end of the semester, extrinsic motivation scores of all students declined and no significant differences were found between ethnic groups. This suggests that perhaps extrinsic motivation is more dynamic and associated with contextual changes for African and Asian American students in early college compared to other students, a topic worthy of future research. Throughout the semester, Caucasians and minority students shared similar levels of intrinsic motivation and mastery orientation. The finding in this study that among specifically Caucasians, intrinsic motivation was greater among female students, supports previous research finding the same pattern with predominantly Caucasian samples (Green & Foster, 1986); however, it should be remembered that due to the smaller sample sizes of ethnic minority subgroups, these differences may not have approached significance. Future research will need to recruit larger subgroup samples of ethnic minorities.

Although Caucasian and minority students were similarly performance-approach oriented at the beginning of the semester, African and Asian American students became significantly more performance-approach oriented than Caucasians at the end of the semester. Similarly, no ethnic differences in performance-avoidance were present at the beginning of the semester, but at the end of the semester, African and Asian American students had become significantly more performance-avoidance oriented than Caucasians. These patterns show the importance of conducting longitudinal, as opposed to cross-sectional research, and suggest that potentially worrisome motivational patterns and ethnic differences in motivation may become larger over time throughout college education. One potentially troublesome pattern that was observed, which approached statistical significance and is worthy of future follow-up, is that Asian American students had lower self-efficacy relative to other groups, and Caucasian and African American students were becoming more performance oriented over time. Although there were no ethnic group differences in academic performance (GPA) in this first semester, such motivational patterns over time could later be linked with poorer performance and should be monitored. However, as mentioned earlier, performance goal orientations can be pos-

itively linked with academic performance under certain conditions (Hulleman et al., 2010).

Motivational profiles of first-year Asian American students in the present study were found to be potentially fragile, relative to other ethnic groups, in that they reported the lowest levels of academic self-efficacy (marginally significant), were significantly more performance goal oriented than Caucasian students, and showed a trend for being less mastery oriented than several other ethnic groups. Such findings resonate with previous studies expressing concern about high levels of fear of failure, depression, stress, lower self-efficacy, greater parental pressure, and more negative parental evaluations from Asian students compared to other groups (Steinberg et al., 1992; Whang & Hancock, 1994; Zusho et al., 2005). Perhaps Asian American students simply hold higher standards for their performance which, when not met, could explain Asian American students' lower self-efficacy (Whang & Hancock, 1994). Rao, Moely, and Sachs (2000) pointed out that motivational differences between Asian and non-Asian students are likely related to the degree of acculturation and generational status of Asian American students, with, for example, third-generation Asian American students whose families have been in the United States longer are likely to show fewer differences from Caucasian students than first-generation immigrant students. Longer longitudinal follow-up is needed in order to ascertain whether such motivational profiles will become related to performance and persistence later on.

Gender

At the beginning of the semester, consistent with our hypotheses, male students across all ethnic groups were significantly more academically self-efficacious than female students. All students' academic self-efficacy increased over the semester but men retained higher self-efficacy beliefs than female students. These findings are contrary to other research (Pajares & Graham, 1999) that did not find a significant gender difference, but this may be because those investigators examined younger middle school students. The present study involved older students than the previous studies and overall gender differences in academic self-efficacy may be more evident in postsecondary level students. It is interesting to note that unlike previous research involving college students (Kitsantas & Zimmerman, 2009), academic self-efficacy in this study was not related to academic performance for the sample as a whole, but for female students, self-efficacy was related to academic performance. This discrepancy may be due to two things: Self-efficacy was measured in a general context in the present study, and academic self-efficacy was measured early in the first semester, a particularly unstable and dynamic period of undergraduate student development. In previous literature, researchers have suggested that self-efficacy can be transient, for example, encouragement can raise self-efficacy, but if later performance is unsatisfactory, then self-efficacy can decline (Schunk &

Meece, 2006). However, we have no reason to expect that these factors should influence male students' reports of self-efficacy more than female students' reports. The possibility that self-efficacy may be more related to college performance for female students should be examined in future research.

Male and female students were similar in their extrinsic motivation scores at the beginning of the semester, but male students experienced more of a decrease in extrinsic motivation over the course of the semester than did women. These findings are contrary to previous research that found women to be more extrinsically motivated than male students (Boggiano et al., 1991; Davis et al., 2006), although the trend over time observed in the present study for men to become less extrinsically motivated as time goes by suggests that if assessed later in their academic career, the same gender-based pattern from previous research may be found. For all minority groups, male students displayed significantly higher levels of intrinsic motivation than women, but this was not true for Caucasian students where women were more intrinsically motivated than men. Also, over the semester, male intrinsic motivation decreased more than that for female students. These two findings, that gender may moderate ethnic differences in intrinsic motivation and that change over time in intrinsic motivation may be different as a function of student gender, suggest that future research on college student motivation needs to include gender and ethnicity (and their interaction) in their models, and that the failure in doing so in previous research may explain the presence of mixed findings.

Women began the semester more mastery oriented than male students, and this gender difference increased over time. Male students began the semester significantly more performance-approach and more performance-avoidance oriented than women, and this gender difference increased over time as men became more performance oriented than female students. Several of these trends (decreases in extrinsic and intrinsic motivation and mastery orientation over time and increases in performance orientation for men over time) are potentially dangerous for the long-term outcomes of male college students and should be examined in other studies and monitored by university officials. Already in the first semester, female students achieved significantly higher GPAs than male students and with the trends observed previously in the motivational profiles of male students, the gender gap in performance is likely to increase over the undergraduate years.

Educational Implications

The findings of the present study offer several suggestions for enhancing college student motivation and subsequently academic achievement in diverse settings. First, faculty across disciplines would benefit from being introduced to the motivation literature and teaching strategies that are aligned with aims of encouraging student motivation. Despite barriers (e.g., resources, planning logistics, faculty time

and availability, and motivation) that exist in efforts to offer training or professional development workshops for faculty, offering such opportunities to promote the use of motivation-enhancing teaching approaches, could encourage students toward intrinsic appreciation for the material and mastery goals. Particularly, faculty training could be implemented to introduce teaching strategies that increase intrinsic motivation, such as applying material to real life issues or using popular culture and technology (e.g., YouTube videos; Brozo, 2005). Similarly, strategies such as assigning moderately challenging work, using peer models, or providing specific learning strategies to the topic at hand for students (e.g., learning how to use a strategy and when to use it), can increase student self-efficacy and performance (Margolis & McCabe, 2006). If in-person workshops are too challenging to implement, other methods such as online workshops, prerecorded talks, or online resources (Kirk, 2013) can be provided, and may reach even larger numbers of instructional faculty.

Given that there appear to be individual differences in first-year student motivational profiles, in addition to gender and ethnic differences, another possibility is that faculty can assess various aspects of student motivation by administering similar survey measures as the ones used in the present study and use that information in planning classroom activities. College instructors could perhaps tailor instruction, activities, or feedback given to students depending on what has been learned about individual or class-wide motivation to realign instruction provided with that needed by different students or groups of students. Although class size may remain a major barrier, at a minimum, instructors should attempt to increase student self-efficacy beliefs regarding academic learning tasks by creating a mastery-oriented learning environment. There are numerous advantages for students who set mastery-oriented goals during acquisition of learning tasks. Not only do they enhance student's achievement, but these types of goals contribute to student efficacy beliefs about their performance and adjustments they need to make in future attempts. The present findings show that this type of instruction may be particularly needed for Asian students and female students across all ethnic groups who tend to be less self-efficacious than other ethnic groups and men. College instructors are in a position to influence these students' self-efficacy judgments of their capability by discouraging a performance goal orientation classroom climate and nurturing these beliefs to develop student self-regulation required to overcome failures as they progress through college. Instructors are, thus, encouraged to assess self-efficacy, motivation, and goal orientation in their students to learn which students may need additional assistance and supportive feedback.

In summary, culturally sensitive interventions targeted to instill self-efficacy in students and a mastery approach to learning could be implemented in schools, even as early as elementary school when children are motivated by curiosity and fun. Strong self-efficacy can be achieved through

sustained support, instilling the belief that ability is amenable to change with strategic efforts, and focus on domain-specific self-efficacy (Linnenbrink & Pintrich, 2003). Teachers in these settings could structure learning tasks that are challenging, but avoid placing students in situations where they are more likely to fail. Assignments and assessments should increase in difficulty, but in a manner in which students are able, resulting in strengthened self-efficacy caused by repeated and progressive successes in the classroom. Students exposed to such learning environments show increased student engagement and learning (Linnenbrink & Pintrich, 2003).

Limitations and Future Directions

Limitations of the present study included the small sample size for certain ethnic groups. While the study did incorporate a somewhat diverse sample of freshmen, more than past studies, we did not attain a relative balance of minorities compared to Caucasians. However, unlike some colleges, in which racial diversity may be very limited, it should be noted that the university studied here has been ranked in the top list of ethnically diverse universities in the nation (Franek & Olson, 2005). Therefore, it is unclear the extent to which our findings of ethnic group differences (or lack thereof) in early college motivation would be replicated in universities that are more homogenous with respect to ethnicity. Our study lost a large percentage of our original participants, resulting in smaller subsamples at the end of the semester. The impact of attrition on study findings should be carefully considered as the students who did not participate in the follow-up study, on average, had poorer academic performance than those who remained in the study throughout both time points. Thus our findings are more relevant to those students with at least average academic performance; this is a limitation because the poor-performing students are the ones that are more at risk and would benefit from such a research focus. Variance in the motivation constructs at the end of the semester may have been limited to the motivational profiles of average- to well-performing students. Diversity of ethnicity, gender, age, and location should be priorities for sampling in future studies. Future research should also explore and measure ethnic identity and cultural beliefs in more detail, rather than examining only pan-ethnic group category membership as was done in the present study. Additionally, factors relating to class year, availability and utilization of college support services should be examined in future research. Furthermore, rather than relying on self-reported data, future researchers should use other data collection approaches including observations and interviews. Microanalytic approaches can also be used to examine student's motivation and reasoning using both context-specific open and closed-ended questions while students are engaged in learning tasks to further uncover how motivational beliefs contribute to academic performance and retention during the first year of studies.

Understanding ethnic and gender differences in early college student motivation may offer promising insights for reducing ethnic and gender disparities in college student retention and graduation. The findings of this study suggest that there are potentially important ethnic and gender differences worthy of future exploration with additional, systematic research.

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