Spring 4-26-2017

Class and the Classroom: The Role of Individual- and School-level Socioeconomic Factors in Predicting Academic Outcomes

Emily Roebuck
Macalester College, eroebuck@macalester.edu

Class and the Classroom: The Role of Individual- and School-level Socioeconomic Factors in Predicting Academic Outcomes

Emily Roebuck

Professor Cari Gillen-O'Neel, Psychology

April 26, 2016

Abstract

Socioeconomic status (SES) can greatly impact individuals' college experience (e.g., Astin, 1993; Roksa & Velex, 2010). However, extant research has emphasized the effect of individual-level SES measures and unintentionally obfuscated the role that school-level SES may play in students' academic outcomes. The present study was designed to determine the predictive power that participants' individual SES (income) and contextual SES (percentage of student body in poverty) has for students' course self-efficacy and engagement behaviors. Participants ($N = 230$) from five private Midwestern colleges reported their individual SES (income), course self-efficacy, engagement behaviors, and sense of school belonging. Additional data representing the institution-specific representation of poverty at participants' high schools and colleges was also obtained. At the individual level, students from families with higher incomes tended to have higher academic self-efficacy, and mediation analyses confirmed that school belonging fully mediated the relationship between participant income and course self-efficacy. At the contextual level, students from higher income backgrounds who attended colleges with a higher percentage of students in poverty than at their high school tended to report fewer engagement behaviors. Among students from families with lower incomes, however, experiencing changes in contextual representation of poverty were not associated with engagement behaviors. Overall, these results underscore the importance of examining *socio*economic status as an inherently contextual variable.

Keywords: socioeconomic status, self-efficacy, school belonging, academic engagement

Acknowledgements

Firstly, I am incredibly thankful to my honors project advisor, Professor Cari Gillen-O'Neel, who has been instrumental in the development of my academic interests and research skills at Macalester College. Cari has advised me on my independent research ventures for almost half of my college career and has displayed countless talents guiding me through the completion of it all, not the least of which knowing my hot tea flavor preferences. She is a compassionate advisor, a dedicated scholar, an APA-style godsend, and a friend.

I would be remiss without thanking another key influence on my academic path. Professor Joan Ostrove, what an amazing entrance I made at Macalester by enrolling in your eight AM first year course, one that brought me into contact with one of the fiercest and kindest spirits I know. Also, thank you for forgetting (or pretending to forget) that midterm grade from CHEM 111 that elicited a mandatory check-in my first semester.

Additionally, I want to express my gratitude to Professors Zeynep Gürsel, Catherine Jacquet, Anna Johnson, Naca, Kari Shepherdson-Scott, and Jaine Strauss. I couldn't have asked for more inspiring women, thinkers, and powerhouses to shape me into the writer, scholar, and human I am today.

A few final words of appreciation, in no particular order…

To my parents, whose never-failing support and encouragement have gotten me here. I could write a paper of its own on the joy you bring to my life, but I'll save it all for this summer, when I'm still crashing at your place.

To my sister, whose strength, purpose, and insistence for the written word has always led the way.

To A, whose friendship is one of my most favorite kinds of love. My life would be definitively less healthy, less fun—less of it all—without you.

To J, who is patient, stubborn, and likes all my favorite foods; this journey is (almost) as much yours as it is mine. Your magic lies in always believing.

To everyone else to whom I talked about this project for longer than they ever wanted to listen: we're here, we made it, and it feels good.

Table of Contents

Abstract 2

Acknowledgements 3

Introduction 6

Issues in the Empirical Measurement of SES 6

SES and Contextual Change 9

SES and Academic Outcomes 11

Present Study 16

Method 19

Participants, Recruitment, and Procedure 19

Measures 22

Institutional demographic variables 22

Individual demographic variables 25

Academic Outcomes 25

Results 27

Research Question 1 27

Research Question 2 28

Research Question 3 30

Discussion 32

Limitations and Future Directions 41

Theory-Driven Interventions and Recommendations 45

References 48

Figures 62

Tables 65

Class and the Classroom: The Role of Individual- and School-level Socioeconomic Factors in Predicting Academic Outcomes

Socioeconomic status can greatly impact individuals' college experience. As a measure of one's combined economic and social status, socioeconomic status (SES) has been recognized as an important influence on academic achievement and the student in numerous studies since at least the 1960s (Coleman et al., 1966; Kraus and Stephens, 2012). These studies, and virtually all previous studies of SES and college students, have emphasized the role of the individual. The question at the crux of previously-conducted research has approximately been, "What is the impact of the individual's social class on their academic outcomes?" Although this is an undoubtedly important question to consider, the present study seeks to augment this by also addressing the lack of attention typically placed on the specific social class *context* of an individual. As Krieger, Williams, and Moss (1997) boldly explicate, "Class…is not an a priori property of individual human beings" (p. 346). Instead, SES is a societally-constructed social relationship in which different classes exist only in their relation to, and co-definition of, each other (Krieger, Williams, & Moss, 1997). However, research has largely avoided consideration of SES as an inherently contextual variable. The goal of the current paper is to explicate the role of one's social class—using both individual- and context-level measures—in college students' course self-efficacy and academic engagement behaviors.

Issues in the Empirical Measurement of SES

Despite its location at the core of very active fields of research, SES is perpetually embroiled in disputes surrounding its conceptual meaning and empirical measurement. For instance, "social class" is commonly conflated with "socioeconomic status" upon

operationalization, despite nuanced differences between the two concepts. As explicated by Wright (2000), "SES" uses relatively easily obtainable, objective indicators to characterize individuals' placement within a society's social strata. Traditionally, these measures appear in the literature as income, occupation, and level of education. Conversely, references to "class" presuppose relationships between social groups that operate within a hierarchy defined by power and exploitation (Wright, 2000). In this paper, due to our use of strictly objective economic data (e.g., income, percentages of student bodies) we have chosen to continue with the term "SES." Although a strict division between the two formal terms does not exist in this case, as our research aims to use this data to better understand intergroup relationships within a community.

Disputes surrounding the measurement of SES are particularly evident when research is conducted among student populations (Ensminger & Fothergill, 2003). Traditionally, measures of student SES appear as income, occupation, and parents' education attainment. These measures all fall prey to an implicit assumption present in virtually all extant SES literature: that SES is accurately measured based on characteristics of an individual alone. However, in the face of compelling evidence that suggests the impacts of SES contexts go above and beyond what is otherwise captured by individual measures, this assumption confronts mounting criticism (Ensminger & Fothergill, 2003; Krieger, Williams, & Moss, 1997).

Over half a century ago, Coleman et al. (1966) postulated that "the social composition of the student body is more highly related to achievement, independent of the student's own social background, than is any school factor" (p. 325). In their seminal review of social stigma, Crocker, Major, and Steele (1998) situate stigma at the intersection between identity and context;

importantly, they locate stigma not in the individual but in the "unfortunate circumstance" in which one possesses a social identity that is devalued in a particular context (p. 506).

Recently, in their "road map for an emerging psychology of social class," Kraus and Stephens (2012) proposed that the very value of studying social class lies in particular social class *contexts'* ability to mold "fundamental aspects of the self and patterns of relating to others" (643). The authors list empirical support for how one's social self and their patterns of relating to others are inseparable from their local context (e.g., Stephens, Markus, & Fryberg, 2012; Stephens, Markus, & Townsend, 2007). Kilburn (1993) fortifies this sentiment, asserting that knowing about a person's social network can sometimes predict attitudes and behavior more accurately than knowing about the individual's own characteristics.

Kraus, Tan, and Tannebaum's (2013) theory of social class rank posits that one's judgements about their own social class identity and rank are determined by local comparisons of observable symbols of others' income, education, and occupation status relative to one's own. Recent research supports the idea that one's subjective perception of their own hierarchical social class position within a comparison set (typically peers or coworkers of similar age and qualification level) ultimately has a larger impact on their psychological functioning than even objective measures such as educational attainment, income, and occupation. Boyce, Brown, and Moore (2010) used a large, representative longitudinal sample of British households to test such a theory. The authors evaluated the impact increases of income and increases of rank position within a group individually have on life satisfaction. Not only did the relative rank of individuals' incomes explain more variance in their life satisfaction than their absolute income,

but when both income variables were analyzed simultaneously, the effect of absolute income accounted for no additional variance in life satisfaction.

SES and Contextual Change

Change, particularly the transition from high school to college, can be quite demanding of young adults (Chemers, Hu, & Garcia, 2001; Tinto 1982). Previous research conducted with individuals who have experienced class mobility, suggests that both previously- and currently-held class positions inform one's subjective social class identity (e.g., Dews & Law, 1995; Jones, 2003; Tokarczyk & Fay, 1993). This is illustrated in Ryan and Sackrey (1996), in which the authors chronicle their experiences with internalized classism as a result of growing up working class and later becoming academics. Research with working class individuals who move into relatively more privileged positions (e.g., entering higher education institutions) paints a clear picture of the significant impact on one's sense of self that accompanies social mobility due to the renegotiation of an important arena for identity exploration (Baxter & Britton, 2001; Dews & Law, 1995; Jones, 2003; Lawler, 1999; Ostrove, 2003; Skeggs, 1997; Tokarczyk & Fay, 1993; Wentworth & Peterson, 2001). This interclass movement challenges and refashions an individual's self-identity and relationships with others and modifies their judgement, taste, opinions, preferences, and practices (Stewart & Ostrove, 1993). Taken all together, it is evident that students' transition from high school to college is a critically important time period in terms of identity exploration.

Previous research conducted with individuals who have experienced upward class mobility suggests that both previously- and currently-held class positions inform one's subjectivity (e.g., Dews & Law, 1995; Jones, 2003; Tokarczyk & Fay, 1993). However, previous

literature has identified conflicting patterns of importance in determining social class identities in the context of one's surroundings, as some sources suggest that one's class of origin serves as the best predictor of key adult identities (Gilbert & Kahl, 1993; Lawler, 1999; Reay, 1996; Ryan & Sackrey, 1996) whereas others suggest that one's immediate, local context buffers one's upbringing (Anderson, Kraus, Galinsky, & Keltner, 2012; Norton, 2013).

One theory suggests that class identity is embedded in people's history (Gilbert & Kahl, 1993; Lawler, 1999; Reay, 1996; Ryan & Sackrey 1996). In Lawler (1999)'s study of women's narratives of moving from a working-class to a middle-class position, the author talks about how the essence of one's newly acquired middle-classness is found "an earlier time, an earlier identity" (p. 10). To her and many authors, one's class that they were borne into is never as "escapable" as one might want it to be, inscribed in everything you like, every action you take, and how you feel about yourself.

However, other research suggests that one's immediate, local context buffers the effect of one's upbringing (Anderson, Kraus, Galinsky, & Keltner, 2012; Boyce, Brown, & Moore, 2010; Norton, 2013). Anderson, Kraus, Galinsky, and Keltner (2012) argue that one's local status within the context of face-to-face groups in which they interact is more important than one's global status. They compare their findings to a long tradition of research that suggests that the comparisons an individual makes between themselves and others immediately around them impacts their happiness more than more distant comparisons (Festinger, 1954). Findings from Boyce, Brown, & Moore (2010) also support the importance of local status; the authors observed that income and life satisfaction were positively correlated among their participants *only when* this income was relatively higher than others in their county.

Thus, while research tends to agree that one's rank in their local context is more meaningful than one's more global positioning, there remains a substantial dearth of research addressing the psychological meaning of SES as people navigate claiming a new class or consolidating class identities and, specifically, how this could impact academic outcomes. One common context that can catalyze change in SES is an individual's entrance into college.

SES and Academic Outcomes

Although students from low-income families are pursuing postsecondary educations at a rapidly increasing rate, evidence suggests their college experiences and academic outcomes tend to be different than those of their more economically-advantaged peers (Bailey & Dynarski, 2011; Lucas, 2006). Among students who began a postsecondary education, Bailey and Dynarski (2011) identified a college completion rate gap of nearly 40 percentage points between students from the bottom and top income quartiles. Additionally, students from low-income families are more likely to work longer hours (Roksa & Velex, 2010) and enroll in fewer credits (Choy et al., 2000). They tend to have lower educational aspirations, persistence rates, and educational attainment (Astin, 1993; Pascarella & Terenzini, 1991). While SES is clearly associated with an abundant number of academic outcomes, the literature suggests that two such outcomes, self-efficacy and academic engagement, have particularly pronounced effects on students' college experience. This paper will now turn to a focused discussion on these two factors.

Self-efficacy. When used in the specific domain of education, academic self-efficacy refers to students' convictions that they can successfully execute certain academic tasks at designated levels (Lorsbach & Jinks, 1999; Schunk, 1991). Importantly, studies have found that when people expect to do well, they tend to try hard, persevere, and ultimately perform to a

higher standard; in education, this often results in a profoundly positive impact on their academic performance (Bandura, 1997; Eccles et al., 1998; Pintrich & Schunk, 2002). Students' different beliefs about themselves, what they are academically capable of, and what they hope to achieve, influence their choices between different courses of action (Folkman & Moskowitz, 2004; Zimmerman, 2000). Students with greater self-efficacy are more likely to be self-regulating, to try to understand their academic work, and to strategize, survey, and regulate their academic work (Seifert, 2004). Self-efficacious students also tend to embrace more challenging goals (Zimmerman et al., 1992); show greater progress in health-related behavior change and maintenance (Strecher, 1986); and participate in class (Andrew & Vialle, 1998). Furthermore, there is also evidence that suggests that these self-efficacious students show increased cognitive engagement in their learning and thinking than their less confident peers (Walker, Greene, & Mansell, 2006**).** Chemers, Hu, and Garcia (2001) found that the level of self-efficacy students report during their first year of college is a strong predictor of their collegiate performance, even after controlling for high school GPA, thus indicating that academic self-efficacy has predicative power beyond objective measures of past academic performance.

Important to the present study is the extensive support found in previous research that there is a strong and positive correlation between socioeconomic status and self-efficacy (Hughes & Demo, 1989; Staples, Schwalbe, & Gecas, 1984). Results from Staples, Schwalbe, and Gecas (1984)'s analysis of the self-perceptions of Black Americans found SES to be the most important predictor of personal efficacy, over and beyond variables such as ethnic and racial ideology, family, religion, and job characteristics. The authors hypothesize that this effect is largely due to the influence of institutional inequality on Black Americans' self-perception. Expanding on this,

the authors posit that the diminished access to resources and positions of power caused by one's low SES usurps many of one's opportunities to experience these resources and positions of power, and thus see themselves, as powerful and proficient. Importantly, the authors persuasively argue that this is largely why effects of racist social structures have remained pervasive—while informal relationships are also related to self-efficacy, they are statistically less powerful than institutional inequality. Additionally, Gecas and Schwalbe (1983) conclude that the *most* important factor in one's sense of their self-efficacy is the experience of engaging in efficacious action; said differently, if one doesn't have the opportunity to prove themselves, they will not be particularly efficacious.

While limited, there is previously-conducted research that suggests context does, in fact, interact with SES to contribute to the development of an individual's self-efficacy. Boardman and Robert (2000)'s study of how the socioeconomic characteristics of individuals' neighborhoods related to their level of self-efficacy found that low overall neighborhood SES was not only a predictor of lower self-efficacy, but that it was even more powerful than individual-level characteristics or employment status. In a study of the relationship between socioeconomic status and individual academic achievement among high school students, Caldas and Bankston (1997) found that both individual family social status and peer family SES had significant effects on academic achievement. Moreover, the effect size of peers' family SES on participants' academic achievement was only narrowly smaller than that of their own family's SES. In studying the role that neighborhood and school contexts play in individuals' self-perception, these articles expand the parameters of the "social environment" within which interpersonal relationships have traditionally been studied.

Academic engagement behaviors. According to Bandura (1997), the school setting is paramount to the cultivation and evaluation of cognitive capabilities, serving as the primary setting for the development and maintenance of such practices. The oft-considered "Father of American Psychology" himself, William James, argued that "education is for behavior, and habits are the stuff of which behavior consists" (James, 1869, p. 58). To James, educators' most critical challenge is making their students' self-regulatory practices (e.g., finishing assignments by deadlines, concentrating on academic work, accessing appropriate resources for collecting information, organizing time and schoolwork, finding a distraction-free place for studying) automatic and habitual, *as early as possible.* To James, only when such academic practices were seemingly automated would the student's mind be freed to engage in academic tasks.

Participation in academic engagement behaviors has been found to positively affect grades and persistence in pursuing a degree and is thus an important variable to consider in terms of impact to a student—and more broadly, an individual's—success (Hung, Tan, & Koh, 2006). However, Pike and Kuh (2005) have found that students from low-income families tend to be less engaged in academic and social experiences at college. Participation in these experiences, such as study groups and extracurricular activities, have been found to promote greater investment and persistence in college (Pike & Kuh, 2005). This effect is profound enough to be identified as an "engagement gap" (e.g., Kinsley, 2014). Recent evidence suggests that this gap may be due in part to the additional disadvantages students from lower-income backgrounds population face in the collegiate classroom. These disadvantages are due to institutional structures that privilege students who have the economic resources and specific types of cultural capital typically associated with higher SES (Armstrong & Hamilton, 2013; Stuber, 2011). As

Kinsley (2014) suggests, the effect of this relative disadvantage on students from low-income backgrounds is likely especially pronounced at more elite, private institutions where the dominant institutional norms, values, and expectations may differ dramatically from those that were exhibited among these students' previous home and school contexts.

Mechanism of SES and academic outcomes. Finally, to the extent that SES is associated with self-efficacy and engagement behaviors, it is worth examining the mechanisms that can explain these associations. School belonging is one promising potential mediator of the association between SES and self-efficacy and engagement behaviors. As many have observed, educational institutions have social class identity markers that define who does—and who does not—"belong" at a given institution (Karabel & Astin, 1975; Stewart & Ostrove, 1993). Freeman, Anderman, and Jensen (2007) found that students' sense of efficacy for succeeding in class was strongly associated with their sense of belonging. Although the literature on social class and student belonging persistently suggests that students from lower SES backgrounds experience reduced school belonging than their higher-SES-background peers, many of these studies consisted of relatively small samples (e.g., hooks, 2000; Freeman et al., 2007; Kuriloff & Reichert, 2003; Ostrove, 2003; Tokarczyk, 2004). To expand upon this work, Ostrove and Long (2007) assessed the class background, college belonging, and academic performance of 322 liberal arts college students. They assessed class using both objective and subjective measures. They found that students from lower social class backgrounds tended to have a reduced sense of adjustment at college. Additionally, students' perceptions on their own class status, specifically in comparison with those of their peers the student body, was found to be significantly related to school belonging. Important to the present research, the researchers also found that the

relationship between students' class background and adjustment to college was mediated by school belonging.

In summary, there is compelling evidence to suggest that school belonging might mediate associations between individual SES and academic outcomes. Additionally, although Johnson et al. (2011) accurately notes that there is little existing research into the role of institutional contextual SES and academic outcomes, Ma (2003) found that some school-level variables accounted for a significant amount of variance in younger students' sense of belonging. While this finding by no means equates to evidence of a mediating effect of school belonging on the differences in academic outcomes that come from contextual SES, it reinvigorates for the possibility of this relationship and the value in the present study continuing with this analysis.

Present Study

The present research aims to determine how individual-level and the change in contextual-level SES variables are associated with college students' self-efficacy and engagement behaviors. Due to the many facets that comprise social class, Sen and Wasow (2016) suggest a useful conception of social class (and other composite variables, such as race) as a "bundle of sticks" in experimental and empirical contexts. Using this approach, one can disaggregate and study particular elements of that comprise social class, focusing on individual and contextual-level measures of SES. In this way, one can overcome the difficulty that would come with attempting to experimentally manipulate all the elements that comprise social class. Under this guidance, the present study will focus on the individual-level measure of participants' annual family incomes and the change in school-level representation of poverty from high school to college, as represented by eligibility for government support. In recognition of the incredible

coexistence of racial and SES identities in the United States and of what Crenshaw (1994) termed "intersectionality," the critical insight that social identities are always experienced in conjunction with each other and cannot be separated, all analyses will be sure to address the ways that class intersects with race as to leave the door open for intra-group differences. I hope to elucidate novel insights into the effects of both individual- and contextual-level SES on students' academic experience.

Research question 1: Institutional movement descriptives. As stated previously, most of the existing research on social class transitions captures the move of first generation or working class students into places that are societally coded as upper class (e.g., elite colleges). While our data will continue to address these individuals, it also aims to gain a better understanding of all students' experiences of change in institutional SES upon matriculation to their collegiate institutions. To gain a comprehensive idea of how movement between institutions with different percentages of students eligible for government-provided financial assistance (i.e., "in poverty") effects students, our analyses will begin with describing the school-level SES movement our sample experienced.

Recent research has noted that the socioeconomic diversity within private college student bodies is becoming increasingly narrow. A recent study found that although four in ten of the top 0.1 income percent attend an elite college, only one-half of 1 percent of their peers from the bottom fifth of incomes among American families do the same (Chetty et al., 2017). Our present sample consists entirely of students who attended public high schools matriculating to private colleges; thus, I hypothesize that more students will experience a decrease in contextual representation of poverty such that the data will show that more students transitioned from high

schools with a higher percentage of the student body receiving financial aid than their colleges than students who experienced the inverse, or high schools with a lower percentage of the student body receiving financial aid than their colleges.

Research question 2: Differences in self-efficacy and engagement behaviors. Our second research question addresses the associations between individual- and contextual-level SES and academic self-efficacy and engagement behaviors. Here, I will determine the separate and combined impacts of individual and school-level SES variables on specific academic outcomes with attention paid towards whether this study's novel variable, the change in one's institutional-SES environment, is as predictive of academic outcomes as income, the measure more commonly explored in extant literature.

Based on the literature I have addressed, the researchers hypothesize a main effect of individual SES on both self-efficacy and engagement behaviors such that students who come from lower-income families will report lower levels of these academic outcomes than their peers from more economically-privileged families. Additionally, I expect a similar main effect of experienced change in contextual representation of poverty, such that a student's experiences of an increase in contextual ROP spanning their high school to college contexts will be associated with an increase in the student's' self-efficacy and engagement behaviors. I further predict that this main effect will be qualified by a significant interaction such that the effect of an increase in contextual representation of poverty will be associated with increases in self-efficacy and engagement behaviors for students from lower-income families, but that no such association would be present for students from higher-income families.

Research question 3: Mediation. If the predicted relationships between individual- and context-level SES with self-efficacy and engagement behaviors are found, I will run tests of mediation to determine whether these relationships are statistically explained by an individual's sense of school belonging. If previous findings associating college self-efficacy, school belonging, and individual-level class background (e.g., Freeman, Anderman, and Jensen, 2007; Ostrove and Long, 2007) hold true in our conceptualization of social class, students' sense of college belonging will mediate the correlation between their SES (measured on both individual and context levels) and self-efficacy in college, and expanding on this, it will also mediate the correlation between their SES and their engagement behaviors. Importantly, we acknowledge past studies offer much more concrete support that students' sense of school belonging mediates the effects of individual-SES than for the mediation of contextual measures of SES (e.g., Ostrove and Long, 2007).

Method

Participants, Recruitment, and Procedure

Participants were recruited from five private, nonprofit, four-year colleges located in the upper Midwest. All schools served between 2000 and 4400 undergraduates. At each school, the offices of institutional research used internal data to facilitate recruitment via a stratified random sample. First, the offices generated two lists of students. One list comprised all students who were from a background that has traditionally been underrepresented in college. Students on this list met one or more of the following criteria: they were from an underrepresented ethnic group (i.e., domestic students with Latino, African-American, or Native American heritage), from a lower-socioeconomic background (defined here through their status as a Pell Grant recipient), or

were first-generation college attendees (i.e., students whose parents had not completed a four-year degree). The second list comprised all of the remaining currently enrolled, full-time undergraduates at each school. Next, college officials randomly selected 85 students from each list and provided the researchers with those students' names and email addresses. This process precipitated the recruitment of 850 total students as potential participants from across the five schools. From this sample, 425 were traditionally underrepresented students and 425 were students from backgrounds well-represented in college.

Data for the current study were collected in November, 2015. There were two main components of the study: a one-time survey and seven daily-diary surveys. The one-time survey included questions about participants' background (e.g., SES, experiences in high school) and their current experiences (e.g., ethnic identity, feelings about college). The daily surveys focused on each day's experiences and emotions. All data were distributed via email and administered via Qualtrics.

Throughout the first week of November, potential participants received up to four emails inviting them to participate in a "Study of Daily Life in College." These emails contained information about the study and a link to complete the one-time survey, which took approximately one hour to complete. Altogether, 303 students completed at least part of the one-time survey (35.6% response rate). Across schools, the response rate ranged from 25.9% to 45.3%.

During the second week of November, all students who completed at least some part of the one-time survey were invited to complete the daily surveys. This week was selected because officials at each school indicated that it was a "typical" week for their students (e.g., no breaks or

exam periods). Starting on Sunday and continuing for a total of seven days, participants were invited to log onto a webpage that linked to the daily surveys. Each day's link was only active from 8:00 P.M. to 2:00 A.M, so participants had to complete each survey toward the end of the day, and they could not complete multiple daily surveys in one sitting. From these "diary-style" surveys, the present study focused on participants' reported frequency of positive academic engagement behaviors.

Participants were offered Amazon gift cards as study incentives: $11 for the one-time survey, $2 for each daily survey, and a $10 bonus for completing at least five of the seven daily surveys. Thus, participants could earn up to $35 in gift cards for completing all parts of the study. As an additional incentive for completing the daily surveys, the researchers raffled four $25 Amazon gift cards on each day of the study; only participants who completed a that day's survey were eligible to win that day's gift card. These incentives resulted in high rates of participation: altogether, participants completed $M = 5.5$, $SD = 1.8$ of the seven possible daily surveys. On the last day of the study, each participant was sent a full debriefing form and all compensation was distributed shortly thereafter.

The current study includes the $N = 230$ students who completed the one-time survey and who attended high schools with available Free and Reduced Lunch program eligibility data (FRL; see more: p. 62). Due to this study's reliance on FRL data collected from the high schools, researchers excluded 73 participants from the data analyses for whom this data was inaccessible (e.g., participants did not identify high school, attended an international high school, or attended a non-public US high school). Participants' ages ranged from 17 – 24 ($M = 20.35$), and they represented all the class years; first years: $n = 65$ (28.3%); sophomores: $n = 39$ (17.0%); juniors:

n = 64 (27.8%); seniors: *n* = 57 (24.8%; other: *n* = 4 (1.7%). One hundred forty-five of the participants (63.0%) identified as female, 82 (35.7%) identified as male, and 2 (0.9%) identified as non-binary or some other gender, and 1 (0.4%) did not provide gender information. One hundred seventy-two of the participants (74.8%) identified as White, 19 (8.3%) identified as Asian, 19 (8.3%) identified as multiracial, 11 (4.8%) identified as Latino, 8 (3.5%) identified as black, and 1 (0.4%) identified as other.

Measures

Institutional demographic variables. Publicly-available data were used to determine the representation of poverty at each high school and college that participants attended. This information, in turn, was used to calculate a new variable to represent participants' experienced change in representation of poverty from high school to college.

High school representation of poverty. One of the most commonly used aggregate measures of school-level poverty within primary and secondary schools in the United States is the percent of the student body eligible for free or reduced cost meals. The National School Lunch Act (1946) is a federally assisted meal program that subsidizes school meals and snacks for children from families with incomes at or below 185% of the federal poverty level. FRL eligibility is one of the only indicators of students' and schools' disadvantages that is available at all for most schools. Despite its flaws, the consistency of FRL eligibility across schools and states allows for fair comparisons of economic need (Harwell and LeBeau, 2010). For these reasons, it is a commonly-used measure of a school's aggregated poverty status.

Participants reported the name, city, and state of the high schools they attended. Participants attended 194 high schools across 28 states (Minnesota students *n* = 137; 59.57%).

Non-Minnesota students hailed from the following states: Arizona: *n* = 2; California: *n* = 10; Colorado: *n* = 3; Florida: *n* = 2; Georgia: *n* = 3; Hawaii: *n* = 2; Iowa: *n* = 4; Illinois: *n* = 9; Indiana: *n* = 3; Kansas: *n* = 2; Kentucky: *n* = 1; Massachusetts: *n* = 6; Maryland: *n* = 1; Michigan: *n* = 4; Minnesota: *n* = 137; Missouri: *n* = 3; North Dakota: *n* = 1; Nebraska: *n* = 1; New Hampshire: *n* = 1; New Jersey: *n* = 1; New Mexico: *n* = 1; New York: *n* = 2; Oregon: *n* = 4; Pennsylvania: *n* = 1; South Carolina: *n* = 1; Texas: *n* = 1; Washington: *n* = 3; Wisconsin: *n* = 22. Using this information, researchers obtained 2015 FRL eligibility data reported at a school-specific level, from states' departments of education. Percentages of students eligible for FRL ranged from 0.67 to 100.00% (*M* = 28.98; see Figure 1).

College representation of poverty. The Pell Grant program is the largest federal grant program available to undergraduate students and serves as a common form of federal financial aid and a common research proxy for comparing the income bracket of students among institutions (Heller, 2004). To qualify for a Pell Grant, students must demonstrate financial need through a completed Free Application for Federal Student Aid (FAFSA) which requires much more detailed information than the income-only FRL program and includes: income, untaxed benefits, assets, family size and structure, and number of siblings in college. Using these inputs, the federal government calculates a score representing students' expected family contribution (EFC). The federal government provides up to six schools each student has displayed interest in their FAFSA inputs and their EFC, and individual schools calculate the students' individual eligibilities for federal and state grants, including the Pell Grant (U.S. Department of Education, 2013).

According to the most recent data available from the National Postsecondary Student Aid Study, approximately forty percent of all undergraduates receive federal Pell Grants, with an average value of $3,400 and the maximum Pell grant amount was $5,550 for full-time students who had a federal expected family contribution of zero (Radwin et al., 2013). This maximum amount equates to about 27 percent of the average cost of college attendance (Turner, 2014). While Tebbs and Turner (2005) outline limitations to using Pell Grants to represent economic diversity, our particular sample of collegiate institutions, who are all found within the same state and largely focus on full-time, four-year programs, are largely exempt from these hesitations.

In the present study, participants matriculated to and were recruited from one of five colleges, at which percentages of students eligible for Pell Grants ranged from 13 to 29% (M = 20.19). Additional insight into each institution, using data gathered from official school websites and the 2014 survey data from the Integrated Postsecondary Education Data System (IPEDS) conducted by the National Center for Education Statistics is provided in Table 1.

Change in representation of poverty from high school to college. Researchers used the gathered FRL and Pell Grant information to create a new measure that represented participants' experienced change in institutional SES upon participants' matriculation to their collegiate institutions (e.g., as represented by institutional representation of poverty; i.e., "ROPchange"). As these measurements were already gathered in equivalent units (e.g., percentage of student body) we used basic subtraction to represent the amount and direction of the change in institutional representation of poverty. In an effort to create a coherent and intuitive variable, each participant's high school FRL percentage was subtracted from their college's Pell Grant percentage to create ROPchange. This allows us to read positive ROPchange values as an

increase in contextual ROP (e.g., more students in poverty at a participant's college than at their high school) and negative ROPchange values as a decrease in contextual ROP (e.g., fewer students in poverty at a participant's college than at their high school).

Individual demographic variables. All individual demographic information was assessed on the one-time survey. Participants reported their birthdays (used to calculate age), genders, and races/ethnicities, and estimated annual family incomes.

Family income. We used family household income to assess individual-level SES. Although the use of income alone is a relatively crude measure of SES, it has been shown to predict important outcomes (e.g., Krieger, Williams, & Moss, 1997). Participants reported their family's annual income by responding to this item: "Please select the category that indicates your family's approximate total income for last year (2014). Please consider all sources of income, including earnings, welfare cash assistance, child support, alimonies, support from other members of your household who regularly contribute to your household, etc." There were 12 response options, ranging from 1 = *less than $10,000* to 12 = *more than $750,000*. The median annual income of the sample was 5 = *between $50,000 and $75,000* (range = 1 to 12). For more information on the distribution of participants' family incomes, see Figure 2.

Academic outcomes. There were three measures of academic: course self-efficacy, academic engagement behaviors, and school belonging. The self-efficacy and school belonging measures were assessed on the one-time survey, whereas participants' engagement behaviors were measured using data from the daily "diary" surveys.

Course self-efficacy. Participants' efficacy scores were measured using one subscale of the College Self-Efficacy Instrument developed by Solberg et al. (1993). This seven-item scale

was designed to be a "valid and reliable college-efficacy measure" (p. 93) and boasts high internal consistency (α = .88). In our data, this scale remained highly consistent (α = .80). Participants rated how confident they were that they could successfully complete course performance tasks (e.g., "Research a term paper") on a scale from 0 (*not confident at all*) to 7 (*extremely confident*). The mean of these seven items was used as an overall index of course self-efficacy. Accordingly, higher scores indicate a participant's increased self-efficacy.

Academic engagement behaviors. On each day of the study, participants responded to several items about their academic feelings and behaviors. The present research focused on students' answers to the question, "Did you do any of these things today?" and were shown four list items related to academic engagement behaviors (e.g., "participate in a class discussion"). Students answered 1 (*yes*) or 0 (*no*). To create a single index from these scores, researchers first found the sum of engagement behaviors from each day, which indicated the total number of behaviors each participant engaged in that day. Then, we calculated the mean number of engagement behaviors noted across all days of the study as a measure of the average number of behaviors across all days. This number was adjusted for days when the student did not have a class in their schedule.

School belonging. Using the Psychological Sense of School Membership (PSSM) Brief questionnaire developed by Hagborg (1994; 1998), we evaluated participants' sense of personal belonging they experience at college. This 11-item measure is drawn from the longer 18-item scale devised by Goodenow (1993) and has been found to demonstrate a high degree of reliability (α = .90) and criterion validity. Participants were asked to think about the college that they currently attend and rate the truthfulness of statements such as "People at this school are

friendly to me." Answers were recorded on a scale from 1 (*not at all true*) to 5 (*completely true*). Researchers then calculated the mean of these items to create an overall index of each participant's school belonging, where higher scores indicate participants' increased sense of college belonging. This scale remained highly reliable in this data collection ($\alpha = .91$).

Results

Research Question 1: Change in Representation of Poverty from High School to College

To address the first research question, researchers gathered basic descriptive statistics in an effort to elucidate how students were moving, in terms of institutional poverty representation, from their high school setting to their college. The variable that represents participants' change in contextual representation of poverty is termed, "ROPchange."

As shown in Figure 3, across all participants, ROPchange ranged from -87.00 to 22.48 (M = -8.79, SD = 19.47). One hundred and forty-seven participants (63.9%) transitioned from a high school with a relatively higher representation of poverty among the student body to a college with a relatively lower representation of poverty. Thus, these participants experienced a decrease in contextual ROP. Among these students, the mean difference between high school and college representations was -18.96%. Eighty-three participants (36.1%) experienced an increased representation of poverty in which they went from a high school with a relatively lower representation of poverty among the student body to a college with a relatively higher representation of poverty. Among these students, the mean difference between high school and college representations of poverty was +9.23%.

A few final tests were completed to gain a better understanding of the correlation between participant family income and experienced ROPchange. First, researchers ran a

bivariate correlation to determine the correlation between income and ROPchange. Higher family income was associated with higher ROPchange, r(223) = .248, p < .001. Additionally, an independent-samples t-test was conducted to compare ROPchange in the lower-income and the higher-income dichotomized income groups. There was not a significant difference in participants' experienced ROPchange for the lower-income (*M* = -10.17, *SD* = 19.22) and higher-income (*M* = -6.12, *SD* = 18.12) groups; *t*(221) = -1.61, p = 0.11. A simple descriptives analysis revealed that lower-income students experienced greater contextual ROPchange (*M* = -10.17, *SD* = 19.23) than did their higher-income peers (*M* = -6.12, *SD* = 18.12), although the mean ROPchange across both groups remained negative, indicating a decrease in contextual ROP from high school to college.

Research Question 2: Associations between SES and Academic Outcomes

To address the second research question, a series of hierarchical linear regressions were run predicting self-efficacy and engagement behaviors. In step 1, participant race/ethnicity was entered as a control variable. In step 2, income and ROPchange were entered as predictors. Finally, in step 3, the interaction between income and ROP was entered as a predictor.

Self-efficacy. Participant race/ethnicity accounted for a significant amount of variance in self efficacy (total $R^2 = 0.09$, $F(4, 216) = 5.25$, $p > 0.001$; see Table 2, model 1). Adding the SES predictor variables (income and ROPchange) accounted for significantly more variance in course self-efficacy (R^2 change = 0.04, $F(2, 214) = 4.92$, $p = .008$; total $R^2 = 0.13$, $F(6, 214) = 5.27$, $p < .001$; see Table 2, model 2). At the individual level, students who reported higher family incomes tended to have higher course self-efficacy. However, change in contextual ROP was not associated with self-efficacy. Adding the interaction between income and ROP did not explain

additional variance in self-efficacy (R^2 change = 0.003, $F(1, 213) = 0.71$, $p = 0.399$; see Table 2, model 3).

***Daily in-class engagement behaviors*.** Participant race/ethnicity did not account for a significant amount of variance in daily in-class engagement (total $R^2 = 0.09$, $F(4, 208) = 1.84$, $p = 0.123$; see Table 3, model 1). Adding the SES predictor variables (income and ROPchange) accounted for significantly more variance in daily in-class engagement (R^2 change = 0.03, $F(2, 206) = 3.01$, $p = .051$; total $R^2 = 0.25$, $F(6, 206) = 2.25$, $p = .040$; see Table 3, model 2). At the contextual level, students who experienced an increase in contextual ROP tended to report fewer engagement behaviors. However, participant income was not associated with engagement behaviors. Adding the interaction between income and ROP accounted for significantly more variance in engagement behaviors (R^2 change = 0.020, $F(1, 205) = 4.55$, $p = 0.034$; total $R^2 = 0.29$, $F(7, 205) = 2.62$, $p = .013$; see Table 3, model 3).

To follow up on this interaction effect, the researchers first created a dichotomized ROP variable so that one category included participants who experienced decreases in contextual ROP, whereas the other category included participants who experienced increases in contextual ROP. After splitting the data along this new variable, another hierarchical linear regression predicting engagement behaviors was run. In step 1, participants' races/ethnicities were entered as control variables. In step 2, income was entered as a predictor. The results of this analysis show that although there was no overall main effect of income (as previously mentioned), this effect was qualified with an interaction with ROP change. For students who experienced decreases in contextual ROP, the association between income and engagement behaviors was positive ($b = 0.04$, $SE = 0.03$, $p = 0.23$) yet for students who experienced increases in contextual

ROP, the association between income and engagement behaviors was negative (b = -0.03, SE = 0.04, p = 0.40).The significant interaction demonstrates that these two slopes are significantly different from one another, but with the reduced power from splitting the sample, each slope failed to reach significance.

To describe this interaction effect in another way, the researchers created a dichotomized income variable so that one category included all participants who indicated family incomes that were equal to or less than the sample median income, whereas the other category included all participants who indicated family incomes above sample median income. After splitting the data along this new variable, a final hierarchical linear regression predicting engagement behaviors was run. In step 1, participants' race/ethnicity were entered as control variables. In step 2, ROPchange was entered as a predictor. The results of this analysis show that although there was an overall main effect of ROP (as previously mentioned), this effect was qualified with an interaction with income. For students from families with lower incomes, changes in contextual ROP had no association with engagement behaviors (b = -0.01, SE = 0.01, p = 0.36). For students from high income backgrounds, experiencing an increase in contextual ROP was associated with fewer engagement behaviors (b = -0.01, SE = 0.01, p = 0.04). Put differently, when students attend a college with a higher representation of poverty than their high school, they tend to engage in fewer engagement behaviors.

Research Question 3: Mediation of SES Effects

Income and self-efficacy. Given that students with higher SES, on average, reported higher levels of course self-efficacy, we proceeded with our third research question and sought to determine if the differences in school belonging mediated the differences in self-efficacy. To this

end, we conducted a series of analyses, following the procedure outlined by Baron and Kenny (1986). As demonstrated above, the first criterion of mediation was established because course self-efficacy varied systematically by income. Because the two contextual SES variables were not significant predictors of course self-efficacy, we proceeded using only our individual-level measure of SES, income.

Next, we performed a separate linear regression analysis to test if student SES was related to the proposed mediator variable, school belonging. Results indicated that income significantly predicted school belonging ($b = 0.06$, $SE = 0.02$ $p = .008$). Specifically, students from families with lower annual incomes reported significantly lower levels of school belonging. Given these results, we were able to proceed to the next step in qualifying for a full test of mediation.

To examine relationships between the proposed mediator and the outcome variable, course self-efficacy, we ran a third linear regression. Results indicated that school belonging significantly predicted course self-efficacy ($b = 0.80$, $SE = 0.11$, $p < .001$). Specifically, students with a lower sense of school belonging reported significantly lower levels of course self-efficacy. Given that all the criteria necessary for conducting a mediation analysis were met, we proceeded to the fourth step and formally tested the mediation.

As a final step, we ran a linear regression with both participant income and sense of school belonging as predictors of self-efficacy. As expected with mediation, school belonging remained a significant predictor of self-efficacy ($b = 0.76$, $SE = 0.11$, $p < .001$), but with school belonging in the model, income was no longer a significant predictor ($b = 0.06$, $SE = 0.04$ $p = .13$). We used the procedure set forth by Sobel (1982) to estimate the magnitude and the

significance of the indirect (i.e., mediated) effects of income on self-efficacy through school belonging. As predicted, results of a Sobel test of mediation confirmed that school belonging fully mediated the relationship between SES and course self-efficacy ($z = 2.47$, $p = .013$).

ROPchange and in-class engagement. Given the above results that suggest ROPchange and the interaction between income and ROPchange significantly predict number of engagement behaviors, we next sought to determine if the differences in school belonging also mediate the differences in-class engagement. As the mediation procedure outlined by Baron and Kenny (1986) consists of ordered steps that must prove true to continue on in the mediation analysis, the failure to establish this first mediation criterion marked the end of the mediation analysis for in-class engagement. The first criterion of mediation was not established because school belonging did not vary systematically by either ROPchange or the interaction between income and ROPchange. Thus, these results suggest school belonging is not a mediator of the in-class engagement.

Discussion

As a measure of one's combined economic and social status, socioeconomic status (SES) has been recognized as an important influence on academic achievement and the student for over half a century (Coleman et al., 1966). However, most previous research has emphasized individual SES and unintentionally obfuscated the role that school context might play in academic outcomes. Acknowledging that *socio*economic status is an inherently contextual variable, the present study examined individual SES (income), contextual SES (percentage of student body in poverty), course self-efficacy, school belonging, and in-class engagement behaviors among college students.

To address our first research question, we employed measures of institutional poverty (FRL and Pell Grants) to elucidate participants' experienced change in institutional SES from their secondary to collegiate institutions. Given that this is a relatively unexplored method of conceptualizing SES, our initial analyses served to describe the changes our participants experienced in contextual ROP. While there was a range, our hypothesis that more students would experience a decrease in contextual ROP than an increase in contextual ROP was confirmed; more students transitioned from high schools where relatively higher percentages of the student body received financial assistance compared to the representation present at their colleges.

These results seem intuitive for a few reasons. Firstly, due to data restrictions, our sample is entirely comprised of students who attended public school high schools and moved to private colleges. It makes sense that public (and free) high schools are still, overall, going to host more students in poverty than private (and increasingly expensive) colleges. In addition, due to the researchers' decision to oversample traditionally-underrepresented college students for this study, it seems likely that this sample was much more likely to contain students hailing from more socioeconomically diverse high schools with greater contextual ROPs. Critically, because of this, the ROP descriptives found in this study likely cannot be generalized to represent a broader measure of the entire schools' SES diversity (i.e., the range of incomes present in the student body).

It is important to note, however, that while FRL program and Pell Grant eligibility are commonly-used proxies for comparing SES diversity across institutions, these measures do not capture identical subsets of low income students. Although every student eligible for their high

school's FRL program is eligible for a Pell Grant, the inverse is not true. Qualifications for Pell Grant eligibility are typically much less strict than for FRL eligibility. As such, our data were, in some ways, predisposed to a mean *increase* in ROP. It is unclear what this measurement inconsistency obscures from our findings. It does suggest, however, that the decrease in ROP found within our sample was strong enough to maintain its negativity despite this predisposition to appear more positive.

Previously-conducted literature on working-class individuals who move into relatively more privileged positions (e.g., entering higher education institutions) paints a clear picture of the significant impact on one's sense of self that accompanies social mobility due to the renegotiation of an important arena for identity exploration (Baxter & Britton, 2001; Dews & Law, 1995; Jones, 2003; Lawler, 1999; Ostrove, 2003; Skeggs, 1997; Tokarczyk & Fay, 1993; Wentworth & Peterson, 2001). More recent research has expanded on this finding, noting that the experience of identity reevaluation is not limited to individuals with backgrounds in the working class and is instead common to any experience of upward class mobility. For instance, Johnson et al. (2011) notes that students who come from class backgrounds that are not stigmatized in broader society (e.g., the U.S. middle class) can experience a psychological burden from learning to manage an identity that, while it has remained the same, is now underrepresented at elite private universities and stigmatized in their new local context.

Altogether, given the findings of past and present studies, it seems especially pertinent that researchers begin to more regularly include context-level measures in their SES research, particularly when the subjects are experiencing a transition between both place and, due to schools as class-based and class-limited institutions, class identity (e.g., Fine & Burns, 2003).

The results from the present study support the broader body of research which asserts that the entrance to college, particularly to private colleges like the ones in the present study, marks the transition to a relatively richer institutional context than most students are accustomed to. This denotes particular importance to studying this transition as a backdrop to both students' education experiences and exploration of their social class identities in the presence of a new comparison set of peers.

For our next research question, we sought to explore how individual-level and context-level measures of SES inform the college experience. Although SES is associated with an abundant number of academic outcomes, we focused our research on two of the outcomes that the literature identified for their especial pertinence to college students' outcomes: self-efficacy and engagement behaviors.

Self-efficacy findings. I hypothesized that students' course self-efficacy would be positively related to income (replicating previous studies) and that as ROP in college increased relevant to high school, low-income students would experience an increase in their self-efficacy, whereas higher-income students would not experience any change. Findings confirmed the hypothesized main effect of income: students who reported higher family incomes tended to display higher course self-efficacy. However, the next hypothesis was not confirmed, as neither ROPchange nor the interaction between income and ROPchange was associated with students' course self-efficacy

One possibility for why students' experience of contextual ROPchange does not explain any variance in their course self-efficacy is related to the relative crudeness of this measure. Although data representing the entire distribution of incomes (or even a range of incomes)

present in the student body would be a much more refined measure of both institution-wide representation of incomes, these measures are simply not widely collected at the secondary or the collegiate levels. Future related studies might consider studying a representative sample of participants from only a few high schools, using their reported incomes to have a better understanding of high school income distribution and offer opportunity for more nuanced analyses and discussion.

Additionally, it is possible that that our participants' cognitions of their efficacy coincided closely with their own, "actual" course efficacy. As all of our participants matriculated to relatively selective private institutions, however, there is a presumed, increased likelihood that their high schools adequately prepared them for college—at least enough to convince college admission officers. However, this fails to fully explain why our individual measure of family SES did have an effect on students' self-efficacy, an important point to explore in future studies. These studies could directly ask participants how well they felt their high schools prepared them for college. Alternatively, if researchers were interested in a more objective measure of high school quality, they could limit their participants to students who all attended high schools within in the same US state (one that preferably reports reliable "high school report card" quality measures). Both of these design modifications could add considerable clarity to why contextual SES does not seem to be related to self-efficacy.

Conversely, it is possible the finding that students' experience of contextual ROPchange does not explain any variance in their course self-efficacy is a true null finding. In other words, the discrepancy between the contextual representation of poverty in high school and college simply may not contribute in any way to students' self-efficacy. If this is the case, this finding is

relatively reassuring in that it suggests it does not appear as though one's context of origin has an inescapable, irreversible, or otherwise inconvenient effect on their self-efficacy. In consideration of previous institutional interventions findings surrounding student self-efficacy (e.g., Betz & Schifano, 2000), a true null hypothesis here points to a smoother transition to college for students from institutions of all contextual representations of poverty in regards to self-efficacy.

After determining that income did in fact explain a significant amount of the variance in students' self-efficacy, we sought to determine whether the self-efficacious consequences of lower family income was mediated by the students' sense of college belonging. Consistent with previous research, the effect a student's income has on their self-efficacy is mediated by their sense of school belonging (Ostrove & Long, 2007). Critically, these findings suggest that an individual's family income appears to significantly influence self-efficacy, not directly, but via the student's sense of college belonging. Put another way, this relationship is not simply about income; it's also substantially about the extent to which students feel integrated with their campus and the role that their SES plays in that sense of integration.

There is an emphatic reason institutions and policy makers might be interested in school belonging as a mediator of the deleterious effect low income has on student academic outcomes: while we may not be able to remove societal SES stratification and inequality (even on an institution-by-institution basis) we can incorporate interventions that help support students' development of school belonging. Put simply, if it is possible to patch the purportedly SES-induced achievement gap with the encouragement of school belonging, it is quite valuable to research this relationship in order to inform future intervention strategies.

Academic engagement behavior findings. In addition to examining the association between SES and self-efficacy, the researchers also examined the associations between SES and academic engagement behaviors. Firstly, we hypothesized that engagement behaviors would be positively related to income. Our next hypothesis was that an increase ROPchange would be associated with an increase in engagement behaviors among low-income students, whereas higher-income students would not experience any correlation. Neither of these hypotheses were confirmed. The finding that participants' family income does not significantly explain variance in their engagement behaviors is optimistically reassuring, as it suggests that students from both low-income and high-income backgrounds are equally engaged in class. However, a main effect of ROPchange was observed; students who experienced an increase in contextual ROP tended to report fewer class engagement behaviors. Additionally, both main effects were qualified by an interaction. For students who experienced decreases in contextual ROP, the association between income and engagement behaviors was positive, for students who experienced increases in contextual ROP, however, #finish this sentence with a parallel structure to the first clause. Follow-up tests revealed for students from families with lower incomes, changes in contextual ROP had no effect on engagement behaviors, but for students from high income backgrounds, experiencing an increase in contextual ROP was associated with fewer engagement behaviors.

These results suggest that among students from higher income families, experiencing an increase in contextual ROP is associated with fewer in-class engagement behaviors. Alternatively, among students from lower income families, experiencing any change in contextual ROP had no effect on their engagement behaviors. Due to the predictive power

positive engagement behaviors have for overall academic achievement (Hung et al., 2006), these results seem particularly integral to the discussion of intergroup academic achievement.

This finding could be the manifestation of high-income students' recognition (on some level) of their relative privilege contributing to a feeling that they don't have to work as hard to achieve academic success. Recent years have seen growth in the area of study surrounding academic entitlement in higher education, or the attitude that one is "owed" academic success even without putting forth personal effort to earn that success. The possibility of relatively high SES predictor for academic entitlement (and one that may be specifically drawn upon in a new environment) seems inherently appealing—Gillies (2005) posits that the modern construction of what she calls "the right to be bright" is intrinsically connected to social class (p. 842). The author argues that the tendency for middle and upper class parents to continuously praise their children has led to a generation of young adults who tend to believe they are entitled to academic success more than previous generations and, importantly, more than their relatively less economically privileged peers. However, the results in this relatively new field surrounding the exact relationship between SES and academic entitlement convey disparate findings, and future research could help illuminate the possibility of an increase in contextual representation of poverty correlating to a sense of increased academic entitlement among students from higher SES backgrounds, which may function to decrease engagement behaviors.

The above suggestion necessitates something of a "triggering effect" that may occur when students from higher income families enter an institution with an increased representation of poverty, otherwise the results would just be that higher income students would show fewer engagement behaviors no matter the context, which doesn't explain the interaction between

income and context. This, however, is a plausible explanation. Johnson et al. (2011) describes an effect seen in students who come from class backgrounds that are not stigmatized in broader society (e.g., the U.S. middle class) but who can experience a psychological burden from learning to manage an identity that, while it has remained the same, is now underrepresented at elite private universities and stigmatized in their new local context. Their research suggests that many such students experience the feelings and repercussions of being chronically lower in social class even without a change in their objective class location due to their new rank in their surroundings. In the absence of more complete information surrounding the exact income bracket breakdown of institutions, which would be particularly helpful in elucidating what the socioeconomic status of the non-poverty portions of institutions looks like, it remains unclear whether these identities were definitively underrepresented at their new institutions. Whether the current results are comprised of a combination of these two rationale or, likely, have their roots at least partially in unknown factors beyond the scope of the present work, this finding and its precipitants are worth exploring.

Although the finding that positive ROPchange, what many colleges would laud as hallmarks of their celebration of diversity, negatively impacts only students from high income backgrounds may seem preferable to negatively affecting all students, it is important to acknowledge that this limited effect could also lead to the under-detection and under-prioritizing of this problem. For instance, if students from lower income families or from lower ROP high schools appear to be "getting by" in terms of their engagement behaviors (and thus, likely in the eyes of their professors), the real and significant disadvantage that comes from these same students' lower self-efficacy could slip through the pedagogical cracks. In fact, literature on

other identities and the idea of "passing" does suggest that this may be the case (Kraus et al., 2012). Future studies might consider incorporating additional measures of participants' class-masking desires and behaviors as an insider in an effort to explore this possibility.

Limitations and Future Directions

Importantly, effects of SES held even when we controlled for the effects of race/ethnicity. Current research suggests that race and socioeconomic status are highly interrelated such that there is a well-established "wealth gap" between families of color and White families (Singh & Rice, 2015). Although race was a significant predictor in predicting self-efficacy and engagement behaviors, the effects of SES were found to explain additional variance in these variables above and beyond race, suggesting that experiences related to SES, while inherently related to other social identities, are also uniquely important on their own.

Nonetheless, race may still meaningfully interact with SES. For example, individual SES may have different effects for students of color than it has for White students. The current study did not have a racially diverse enough sample to test these effects, which is particularly problematic when one considers the incredible coexistence and overlap of racial and SES identities in the United States (Crenshaw, 1994). Future research would only be improved through the use of participants that are representative of the wide range of gender, ethnic, and other diversities as they exist in educational institutions across the nation today.

A strength of this study was the inclusion of context SES. However, as discussed earlier, eligibility for FRL and Pell are crude measures of poverty, let alone broader representation of contextual SES. Other ways of measuring context would allow a similar study to not just use contextual representation of poverty as a variable but develop much more comprehensive

representations of where they went to school. There would be more accountability in a measure like this in capturing schools that have very equal distributions of a wide range of incomes versus schools that perhaps, despite having a low rate of students eligible for FRL program also never reach the relative income bracket "extremes" that are typically much more commonplace at private collegiate institutions (Johnson et al., 2011). If there were enough schools like the hypothetical one just described, our results could be underappreciating the effect of being middle class but feeling "less than" due to your income level at college could reasonably have on your course self-efficacy, engagement behaviors, and school belonging at college. Future research should consider creative ways to gather more nuanced measures of individual and contextual socioeconomic class.

Additionally, in order to have an idea of the institutional SES of students' high schools, we were limited to schools that had FRL data publically available. This meant that students coming from schools that were not public (e.g., private, charter, independent, and home schools) had to be eliminated from our sample. As many of these non-public secondary institutions operate much differently in terms of cost, prestige, and thus, institutional SES, it is a shame that these students were unable to be analyzed alongside their public-school peers in this study. Future studies could benefit from directly studying a diversity of high school types, which could be possible with explicit partnership and data provided by individual high schools but was unfortunately impossible in the present study, which used archival data and would have required buy-in from nearly fifty private institutions (who may or may not even possess up-to-date SES data to give out, let alone their willingness to do so.) It is very possible the main effect of income observed here, such that students who reported higher family incomes tended to display

higher course self-efficacy, was not a direct effect of income and instead an indirect effect via school type. Put differently, it is possible that the effects of individual income this study on academic outcomes are mediated by the high school environment type.

Relatedly, just as our high school type was limited, so was the sample of colleges' data we had access to in using this archival data set. The colleges included in this study were all relatively small, private, and elite schools in Minnesota. Future research is needed to examine whether individual-level and contextual-level SES variables similarly affect academic outcomes at different types of educational institutions, nearly all of which feature wider diversity in acceptance rates and student populations (e.g., public universities, community colleges, or technical schools). Although this diversity would be important in all studies regarding student identity, it is particularly relevant in work that revolves around SES with the recognition that public and private undergraduate institutions often have vastly different levels of tuition and fees and are thus simply not realistic options for huge swaths of the US population. Additionally, full-time, four year programs necessitate a certain amount of expendable time and resources whereas other types of schools often offer more flexibility in these regards. It would be of interest to see if institutional-level SES remains an important factor in academic outcomes in cases in which the student is *not* a full-time student and is thus less intimately engrained in this environment. Expanding on this further, it would be interesting to see, in an age where the Internet claims more students than ever before (Horn & Christensen, 2011), if the effect of contextual SES variables remains when the "context" is not face-to-face.

Additionally, the authors would like to address our decision to measure only SES at a contextual level. Our research was guided specifically by how SES is a *socio*economic variable,

despite it's common operationalization in quantitative studies as a purely individual trait; in short, we identified a clear dearth of knowledge surrounding how contextual SES affects the college experience and students' academic outcomes. However, we want to acknowledge that many variables could be measured outside the individual. The perspective of schools-as-communities, the idea that schools should operate as accepting communities in which all students can achieve to their greatest potential, appears more commonly in the literature on adolescent educational research (Battistich et al., 1995). In an effort to explain school misbehavior among 15 and 17-year-old students, Demanet and Van Houtte (2011) gathered participants' personal sense of school belonging, peer attachment, and perceived teacher support (e.g., an individual-level effect) as well as an aggregate measure of the mean sense of school belonging present in a student body (e.g., a school-level effect). This study found that individual-level belonging was more important to levels of school misconduct, as no relation was seen with school-level belonging once the three aspects of individual belonging were considered. While these results maintain our confidence in the present study's exploration of exclusively individual-level measures of school belonging, they raise an important point: there is value in studying many variables, not just SES or school belonging, on both the individual and community levels. This seems particularly relevant within the environment of a school. Future research on college students could benefit from adapting the findings and procedures of this school-as-communities view (Battistich et al., 1995) largely pioneered by studies involving younger students.

Moreover, although the present study only found two academic outcomes (e.g., self-efficacy and engagement behaviors) that were predicted by contextual SES, there may be others that were not measured by the present study. Other commonly-studied variables that show ties to

measures of students' individual-level social class and may also be affected by contextual measures include academic concerns, sensitivity to SES-based identity discrepancy (SSID), self-regulation, psychological adjustment, academic engagement, social engagement, etc. Future research into the variety of academic outcomes that could be associated with contextual representation of ROP and individuals' experienced change in ROP between high school and college will only advance the studies of SES and education.

Theory-Driven Interventions and Recommendations

Broadly speaking, the findings from this study further support the assertion that although individual-level SES measures significantly predict academic outcomes, contextual-level SES measures explain more than enough of the variance to suggest that researchers and educators cannot afford to continue overlooking these variables. Further, with regard to our ROPchange variable, it is evident that is not only one's current institutional ROP, but also their contextual ROP history, that affects their lives. College students' high school ROP does not cease influencing their lives when they step onto their college campus for the first time. These findings support the previously discussed recent literature that posit that one's "class of origin" remains important, even once you leave it, and expands that to include class of origin as measured contextually (Lawler 1999; Reay, 1996).

This study contributes to a growing literature on ways to reduce achievement gaps among college students from diverse social groups as well as literature on new, effective ways of conceptualizing social class. Stephens, Hamedani, and Destin (2014) note that a common approach to reducing achievement gaps has been to equate difference as a source of threat for students from underrepresented and stigmatized groups and that interventions should thus shift

attention away from this difference. However, this finds itself in direct conflict with leading theories of multicultural education (e.g., Gurin et al., 2013; Milem et al., 2005), which posit that difference is not inherently threatening and that, additionally difference-blind approaches are not the most effective way to reduce threat. Stephens, Hamedani, and Destin (2014) implemented a difference-education intervention among incoming college students, emphasizing how their diverse backgrounds can shape their college experience. This approach was found to eliminate the social-class achievement gap experienced by first-generation students and improve the college transition for all students on numerous psychosocial outcomes. In this way, future research and interventions surrounding SES and the college student should examine ways in which intentional exploration of how SES impacts the college experience can be empowering, enlightening, and provide students with the tools to overcome potential challenges their backgrounds might present.

If teachers and academic institutions can take steps to intentionally create learning environments which support the development of students' course self-efficacy, this may have the potential to improve student outcomes. Whether our results are due directly do to income and ROPchange or if they are influenced by high school quality, these findings suggest that educators should dedicate additional effort to supporting students from SES backgrounds that are traditionally underrepresented at undergraduate institutions, even when potentially not underrepresented in mainstream society. Additional resources should go to students who not only come from collegiately-underrepresented SES backgrounds but also are underrepresented in terms of race/ethnicity (particularly black students) and generation. Further, the results of the

current study suggest that students from well-represented backgrounds could benefit from exploration of how their social class identities can impact their collegiate experience.

For instance, universities could work to make small changes to expand the recognition, appreciation, and accommodation of SES diversity in the ways their university culture conceptualizes what it means to be a student. For example, college institutions could develop communication materials (e.g., student guidebooks, university mission statements, admissions advertisements, and videos) that strategically emphasize the value they place on all student body diversity and on the value class engagement holds for all students' development.

The results presented here suggest a number of options available to collegiate institutions to ease the challenges that students experience when transitioning between high school to college, and thus, often disparate contextual ROP. The broad results of the present research – that people's past and present individual- and contextual-level SES environments matter —can and should be leveraged in future research and initiatives to foster more inclusive and equitable academic experiences.

References

Anderson, C., Kraus, M. W., Galinsky, A. D., & Keltner, D. (2012). The local-ladder effect: Social status and subjective well-being. *Psychological Science*, *23*(7), 764-771.

Andrew, S., & Vialle, W. (1998). Nursing students' self-efficacy, self-regulated learning and academic performance in science. *Nursing Times*, *76*(10), 427-432.

Arizona Department of Education. (2015). *Percentage of children approved for free or reduced-price lunches.* Retrieved from http://www.azed.gov/health-nutrition/frpercentages/

Armstrong, E. A., & Hamilton, L. T. (2013). *Paying for the Party*. Harvard University Press.

Astin, A. W. (1993). *What matters in college?: Four critical years revisited* (Vol. 1). San Francisco: Jossey-Bass.

Bailey, M. J., & Dynarski, S. M. (2011). *Gains and gaps: Changing inequality in US college entry and completion* (No. w17633). National Bureau of Economic Research. doi: 10.3386/w17633

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Freeman.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, *51*(6), 1173.

Battistich, V., Solomon, D., Kim, D. I., Watson, M., & Schaps, E. (1995). Schools as communities, poverty levels of student populations, and students' attitudes, motives, and performance: A multilevel analysis. *American Educational Research Journal*, *32*(3), 627-658.

Baxter, A., & Britton, C. (2001). Risk, identity and change: Becoming a mature student. *International Studies in Sociology of Education,* 11(1), 87-104.

Betz, N. E., & Schifano, R. S. (2000). Evaluation of an intervention to increase realistic self-efficacy and interests in college women. *Journal of Vocational Behavior*, *56*(1), 35-52.

Boardman, J. D., & Robert, S. A. (2000). Neighborhood socioeconomic status and perceptions of self-efficacy. *Sociological Perspectives*, *43*(1), 117-136. doi:10.2307/1389785

Boyce, C. J., Brown, G. D., & Moore, S. C. (2010). Money and happiness: Rank of income, not income, affects life satisfaction. *Psychological Science*, *21*(4), 471-475. doi:10.1177/0956797610362671

Caldas, S. J., & Bankston, C. (1997). Effect of school population socioeconomic status on individual academic achievement. *The Journal of Educational Research*, *90*(5), 269-277. http://dx.doi.org/10.1080/00220671.1997.10544583

California Department of Education. (2015). *Free and reduced price meal eligibility data.* Retrieved from ww.c://www.cde.ca.gov/ds/sh/cw/

Chemers, M. M., Hu, L., & Garcia, B. F. (2001). Academic self-efficacy and first-year college student performance and adjustment. *Journal of Educational Psychology, 93*, 55– 64. doi:10.1037/0022-0663.93.1.55

Chetty, R., Friedman, J., Saez, E., Turner, N., & Yagan, D. (2017). *Mobility Report Cards: The Role of Colleges in Intergenerational Mobility*. Retrieved from: http://www.equality-of-opportunity.org/documents/

Choy, S. P., Horn, L. J., Nuñez, A.M. and Chen, X. (2000). Transition to college: What helps at-risk students and students whose parents did not attend college. *New Directions for Institutional Research,* 45–63. doi:10.1002/ir.10704

Christensen, C. M., Horn, M. B., Caldera, L., & Soares, L. (2011). Disrupting College: How Disruptive Innovation Can Deliver Quality and Affordability to Postsecondary Education. *Innosight Institute*.

Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfeld, F. D., et al. (1966). *Equality of educational opportunity*. Washington, DC: U.S. Government Printing Office.

Colorado Department of Education. (2015). *SchoolView data center.* Retrieved from https://edx.cde.state.co.us/SchoolView/DataCenter

Crocker, J., Major, B., & Steele, C. (1998). Social stigma (4th ed., Vol. 2). New York: McGraw-Hill.

Demanet, J., & Van Houtte, M. (2012). School belonging and school misconduct: The differing role of teacher and peer attachment. *Journal of Youth and Adolescence*, *41*(4), 499-514.

Dews, C. L. B., & Law, C. L. (1995). This fine place so far from home.

Eccles, J., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (5th ed., pp. 1017–1095). New York: Wiley

Ensminger, M. E., Fothergill, K. E., Bornstein, M. H., & Bradley, R. H. (2003). A decade of measuring SES: What it tells us and where to go from here. *Socioeconomic status, parenting, and child development*, 13-27.

Fine, M., & Burns, A. (2003). Class notes: Toward a critical psychology of class and schooling. *Journal of Social Issues*, *59*(4), 841-860.

Florida Department of Education. (2015). *PK-12 public school data publications and reports.* Retrieved from http://www.fldoe.org/accountability/data-sys/edu-info-accountability-services/pk-12-public-school-data-pubs-reports/students.stml

Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology, 55,* 745–774. doi:10.1146/annurev.psych.55.090902.141456

Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of belonging in college freshmen at the classroom and campus levels. *The Journal of Experimental Education*, *75*(3), 203-220.

Gecas, V., & Schwalbe, M. L. (1983). Beyond the looking-glass self: Social structure and efficacy-based self-esteem. *Social psychology quarterly*, 77-88. http://www.jstor.org/stable/3033844

Georgia Department of Education. (2015). *Free and reduced lunch percentages.* Retrieved from https://oraapp.doe.k12.ga.us/ows-bin/owa/fte_pack_frl001_public.entry_form

Gilbert, D., & Kahl, J. (1993). The American Class Structure: A New Synthesis Wadsworth Publishing Company.

Gillies, V. (2005). Raising the 'Meritocracy' Parenting and the Individualization of Social Class. *Sociology*, *39*(5), 835-853.

Goodenow, C. (1993). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools*, *30*(1), 79-90.

Gurin, P., Nagda, B. R. A., & Zuniga, X. (2013). *Dialogue across difference: Practice, theory, and research on intergroup dialogue*. Russell Sage Foundation.

Hagborg, W. J. (1994). An exploration of school membership among middle-and high-school students. *Journal of Psychoeducational Assessment*, *12*(4), 312-323. doi:10.1177/073428299401200401

Hagborg, W. J. (1998). An investigation of a brief measure of school membership. *Adolescence*, *33*(130), 461.

Harwell, M. and LeBeau, B. (2010). Student eligibility for a free lunch as an SES measure in education research. *Educational Researcher*, *39*(2), 120-131. doi:10.3102/0013189X10362578

Hawaii State Department of Education. (2015). *Free and reduced price lunch program.* Retrieved from http://www.hawaiipublicschools.org/TeachingAndLearning/HealthAndNutrition/StudentHealthResources/Pages/FreeReducedLunch.aspx

Heller, D. E. (2004). Pell Grant recipients in selective colleges and universities. *America's untapped resource: Low-income students in higher education*, 157-166.

hooks, b. (2000). *Feminist theory: From margin to center*. Pluto Press.

Hughes, M., & Demo, D. H. (1989). Self-perceptions of Black Americans: Self-esteem and personal efficacy. *American Journal of Sociology*, 132-159. doi:10.1086/229216

Hung, D., Tan, S. C., & Koh, T. S. (2006). Engaged learning: Making learning an authentic experience. In *Engaged learning with emerging technologies* (pp. 29-48). Springer Netherlands.

Iowa Department of Education. (2015). *Districts in need of assistance & free and reduced lunch.* Retrieved from https://www.educateiowa.gov/documents/title-programs/2017/02/districts-need-assistance-free-and-reduced-lunch-2015-2016-list

Illinois State Board of Education. (2015). *Free and reduced-price meal eligibility data.* Retrieved from https://www.isbe.net/Pages/Seamless-Summer-Option-Meal-Eligibility.aspx

Indiana Department of Education. (2015). *Archive: free and reduced price data.* Retrieved from http://www.doe.in.gov/nutrition/scn-archive-free-and-reduced-price-data

Johnson, S. E., Richeson, J. A., & Finkel, E. J. (2011). Middle class and marginal? Socioeconomic status, stigma, and self-regulation at an elite university. *Journal of Personality and Social Psychology, 100*(5), 838.

James., W. (1896). *Talks to teachers*. New York: Norton.

Jones, S. J. (2003). Complex subjectivities: Class, ethnicity, and race in women's narratives of upward mobility. *Journal of Social Issues*, *59*(4), 803-820. doi:10.1046/j.0022-4537.2003.00091.x

Kansas State Department of Education. (2015). *School finance publications.* Retrieved from http://www.ksde.org/Agency/Fiscal-and-Administrative-Services/School-Finance/Reports-and-Publications

Karabel, J., & Astin, A. W. (1975). Social Class, Academic Ability, and College" Quality". *Social Forces*, 381-398. doi:10.2307/2576581

Kentucky Department of Education. (2015). *Site enrollment.* Retrieved from http://education.ky.gov/federal/SCN/Pages/SiteEnrollment.aspx

Kilburn, J. C. (1993, February). *I'm so happy to have educated friends: Using network characteristics to predict individual's circumstances and beliefs.* Paper presented at the 1993 International Sunbelt Network Conference, Tampa, Florida.

Kinsley, P. M. (2014). *The pull of home: Family dynamics and the initial college experiences of low-income undergraduates* (Doctoral dissertation, The University of Wisconsin-Madison).

Kraus, M. W., Park, J. W., & Tan, J. J. (2016). Signs of Social Class: The Experience of Economic Inequality in Everyday Life. *Retrieved from osf. io/qye9a*.

Kraus, M. W., Piff, P. K., & Keltner, D. (2011). Social class as culture: The convergence of resources and rank in the social realm. *Current Directions in Psychological Science, 20*(4), 246-250. doi:10.1177/0963721411414654

Kraus, M. W., Piff, P. K., Mendoza-Denton, R., Rheinschmidt, M. L., & Keltner, D. (2012). Social class, solipsism, and contextualism: how the rich are different from the poor. *Psychological review*, *119*(3), 546.

Kraus, M. W., & Stephens, N. M. (2012). A road map for an emerging psychology of social class. *Social and Personality Psychology Compass*, *6*(9), 642-656. doi:10.1111/j.1751-9004.2012.00453.x

Kraus, M. W., Tan, J. J., & Tannenbaum, M. B. (2013). The social ladder: A rank-based perspective on social class. *Psychological Inquiry*, *24*(2), 81-96. doi:10.1080/1047840X.2013.778803

Krieger, N., Williams, D. R., & Moss, N. E. (1997). Measuring social class in U.S. public health research: Concepts, methodologies, and guidelines. *Annual Review of Public Health, 18,* 341–378. doi:10.1146/ annurev.publhealth.18.1.341

Kuriloff, P., & Reichert, M. C. (2003). Boys of class, boys of color: Negotiating the academic and social geography of an elite independent school. *Journal of Social Issues*, *59*(4), 751-769.

Lawler, S. (1999). 'Getting out and getting away': Women's narratives of class mobility. *Feminist Review*, *63*(1), 3-24.

Lorsbach, A., & Jinks, J. (1999). Self-efficacy theory and learning environment research. *Learning Environments Research*, *2*(2), 157-167. doi:10.1023/A:1009902810926

Lucas, C. J. (2006). American higher education: A history. *Palgrave Macmillan*.

Ma, X. (2003). Sense of belonging to school: Can schools make a difference?. *The Journal of Educational Research*, *96*(6), 340-349.

Massachusetts Department of Elementary and Secondary Education. (2015). *School and district profiles.* Retrieved from http://profiles.doe.mass.edu/

Maryland State Department of Education. (2015). *Free and reduced-price meal statistics.* Retrieved from http://www.marylandpublicschools.org/programs/Pages/School-Community-Nutrition/FreeReducedPriceMealStatistics.aspx

Michigan Department of Education. (2015). *District/school information.* Retrieved from https://www.mischooldata.org/DistrictSchoolProfiles/EntitySummary/Summary.aspx

Milem, J. F., Chang, M. J., & Antonio, A. L. (2005). *Making diversity work on campus: A research-based perspective*. Washington, DC: Association American Colleges and Universities.

Minnesota Department of Education. (2015). *Minnesota public school list with percentage of free and reduced-price eligible students.* Retrieved from https://education.state.mn.us/mdeprod/idcplg?IdcService=GET_FILE&dDocName=040289&RevisionSelectionMethod=latestReleased&Rendition=primary

Missouri Department of Elementary and Secondary Education. (2015). *Free and reduced lunch program by building*. Retrieved from https://mcds.dese.mo.gov/quickfacts/Pages/District-and-School-Information.aspx

North Dakota Department of Public Instruction. (2015). *Free and reduced eligibility data.* Retrieved from https://www.nd.gov/dpi/SchoolStaff/ChildNutritionFoodDistribution/SchoolDistrictData

Nebraska Department of Education. (2015). *Data reports.* Retrieved from https://www.education.ne.gov/dataservices/Data_and_Information.html

New Hampshire Department of Education. (2015). *NH school and district profiles.* Retrieved from http://my.doe.nh.gov/profiles/

New Mexico Public Education Department. (2015). *Free and reduced price lunch data.* Retrieved from http://ped.state.nm.us/nutrition/index.html

New York State Education Department. (2015). Retrieved from www.nysed.gov

Oregon Department of Education. (2015). *School and district report cards.* Retrieved from http://www.oregon.gov/ode/reports-and-data/Pages/School-Report-Cards.aspx

Ostrove, J. M. (2003). Belonging and wanting: Meanings of social class background for women's constructions of their college experiences. *Journal of Social Issues*, *59*(4), 771-784. doi: 10.1046/j.0022-4537.2003.00089.x

Ostrove, J. M., & Long, S. M. (2007). Social class and belonging: Implications for college adjustment. *The Review of Higher Education*, *30*(4), 363-389. doi:10.1353/rhe.2007.0028

Pennsylvania Department of Education. (2015). *National school lunch program reports.* Retrieved from http://www.education.pa.gov/Teachers%20-%20Administrators/Food-Nutrition/Pages/National-School-Lunch-Program-Reports.aspx#tab-1

Pike, G. R., & Kuh, G. D. (2005). First-and second-generation college students: A comparison of their engagement and intellectual development. *The Journal of Higher Education, 76*(3), 276-300.

Pintrich, P. R., & Schunk, D. H. (2002). *Motivation in education: Theory, research, and applications (2nd ed.).* Upper Saddle River, NJ: Prentice Hall.

Radwin, D., Wine, J., Siegel, P., and Bryan, M. (2013). *2011–12 National Postsecondary Student Aid Study (NPSAS:12): Student Financial Aid Estimates for 2011–12.* (NCES 2013-165). Institute of Education Sciences, U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from http://nces.ed.gov/pubsearch.

Reay, D. (1996). Insider perspectives or stealing the words out of women's mouths: Interpretation in the research process. *Feminist Review*, *53*(1), 57-73.

Roksa, J., & Velez, M. (2010). When studying schooling is not enough: Incorporating employment in models of educational transitions. *Research in Social Stratification and Mobility*, *28*(1), 5-21. http://doi.org/10.1016/j.rssm.2009.03.001

Ryan, J., & Sackrey, C. (1996). *Strangers in paradise: Academics from the working class*. University Press of America.

Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational Psychologist*, *26*(3-4), 207-231. http://dx.doi.org/10.1080/00461520.1991.9653133

Seifert, T. L. (2004). Understanding student motivation. *Educational Research, 46,* 137–149. doi:10.1080/0013188042000222421

Skeggs, B. (1997). *Formations of class & gender: Becoming respectable* (Vol. 51). Sage.

Solberg, V. S., O'Brien, K., Villareal, P., Kennel, R., & Davis, B. (1993). Self-efficacy and Hispanic college students: Validation of the college self-efficacy instrument. *Hispanic Journal of Behavioral Sciences*, *15*(1), 80-95. doi:10.1177/07399863930151004

South Carolina Department of Education. (2015). *E-rate: Free and reduced meal eligibility data.* Retrieved from http://ed.sc.gov/districts-schools/nutrition/national-school-lunch-program/e-rate-free-and-reduced-meal-eligibility-data/

Staples, C. L., Schwalbe, M. L., & Gecas, V. (1984). Social class, occupational conditions, and efficacy-based self-esteem. *Sociological Perspectives*, *27*(1), 85-109. doi:10.2307/1389238

State of New Jersey Department of Education. (2015). Retrieved from www.state.nj.us/education

State of Washington Office of Superintendent of Public Instruction. (2015). *Washington State report card.* Retrieved from http://reportcard.ospi.k12.wa.us/summary.aspx

Stewart, A. J., & Ostrove, J. M. (1993). Social class, social change, and gender. *Psychology of Women Quarterly*, *17*(4), 475-497.

Strecher, V. J., DeVellis, B. M., Becker, M. H., & Rosenstock, I. M. (1986). The role of self-efficacy in achieving health behavior change. *Health Education & Behavior*, *13*(1), 73-92. doi:10.1177/109019818601300108

Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., & Covarrubias, R. (2012). Unseen disadvantage: how American universities' focus on independence undermines the academic performance of first-generation college students. *Journal of personality and social psychology*, *102*(6), 1178. doi: 10.1037/a0027143

Stephens, N. M., Hamedani, M. G., & Destin, M. (2014). Closing the social-class achievement gap a difference-education intervention improves first-generation students' academic performance and all students' college transition. *Psychological science*, *25*(4), 943-953.

Stephens, N. M., Markus, H. R., & Townsend, S. S. (2007). Choice as an act of meaning: the case of social class. *Journal of personality and social psychology*, *93*(5), 814. doi: 10.1037/0022-3514.93.5.814

Stuber, J. M. (2011). Integrated, marginal, and resilient: race, class, and the diverse experiences of white first-generation college students. *International Journal of Qualitative Studies in Education*, *24*(1), 117-136.

Tebbs, J., & Turner, S. (2005). Low-income students a caution about using data on Pell grant recipients. *Change: The Magazine of Higher Learning*, *37*(4), 34-43.

Terenzini, P. T., & Pascarella, E. T. (1991). Twenty years of research on college students: Lessons for future research. *Research in Higher Education*, *32*(1), 83-92.

Texas Education Agency. (2015). *School report card.* Retrieved from https://rptsvr1.tea.texas.gov/perfreport/src/2015/campus.srch.html. http://dx.doi.org/10.3200/CHNG.37.4.34-43

Tinto, V. (1982). Defining dropout: A matter of perspective. In E.T. Pascarella (Ed.), Studying student attrition (p. 3-16). San Francisco: Jossey-Bass.

Tokarczyk, M. M. (2004). Promises to keep: Working class students and higher education. *What's class got to do with it*, 161-167.

Tokarczyk, M. M., & Fay, E. A. (1993). *Working-class women in the academy: Laborers in the knowledge factory*. University of Massachusetts Press.

Turner, L. J. (2014). The road to Pell is paved with good intentions: The economic incidence of federal student grant aid. *College Park, MD: University of Maryland, Department of Economics*.

U.S. Department of Education. 2013. "The EFC Formula, 2014-2015." Washington DC: U.S. Department of Education, Office of Postsecondary Education.

Walker, C. O., Greene, B. A., & Mansell, R. A. (2006). Identification with academics, intrinsic/extrinsic motivation, and self-efficacy as predictors of cognitive engagement. *Learning and individual differences*, *16*(1), 1-12. doi:http://doi.org/10.1016/j.lindif.2005.06.004

Wentworth, P. A., & Peterson, B. E. (2001). Crossing the line: Case studies of identity development in first-generation college women. *Journal of Adult Development*, *8*(1), 9-21.

Wisconsin Department of Public Instruction. (2015). *Participation and funding data for food and nutrition programs operating in Wisconsin schools and institutions.* Retrieved from https://dpi.wi.gov/school-nutrition/program-statistics

Wright, E. O. (2000). *Class counts* (Student edition). Cambridge, UK: Cambridge University Press.

Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn. *Contemporary Educational Psychology, 25,* 82–91. doi:10.1006/ceps .1999.1016

Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American educational research journal*, *29*(3), 663-676. doi: 10.3102/00028312029003663

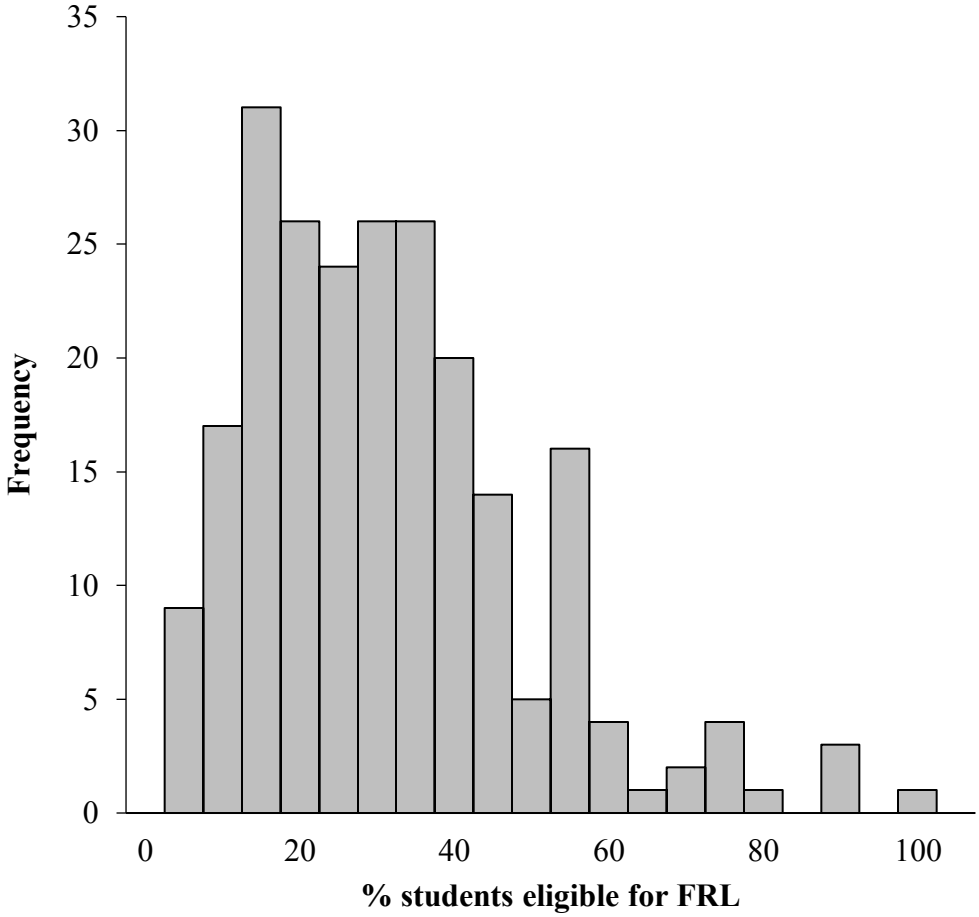

Figure 1. Distribution of the representations of poverty (as calculated by FRL eligibility) at participants' high schools.

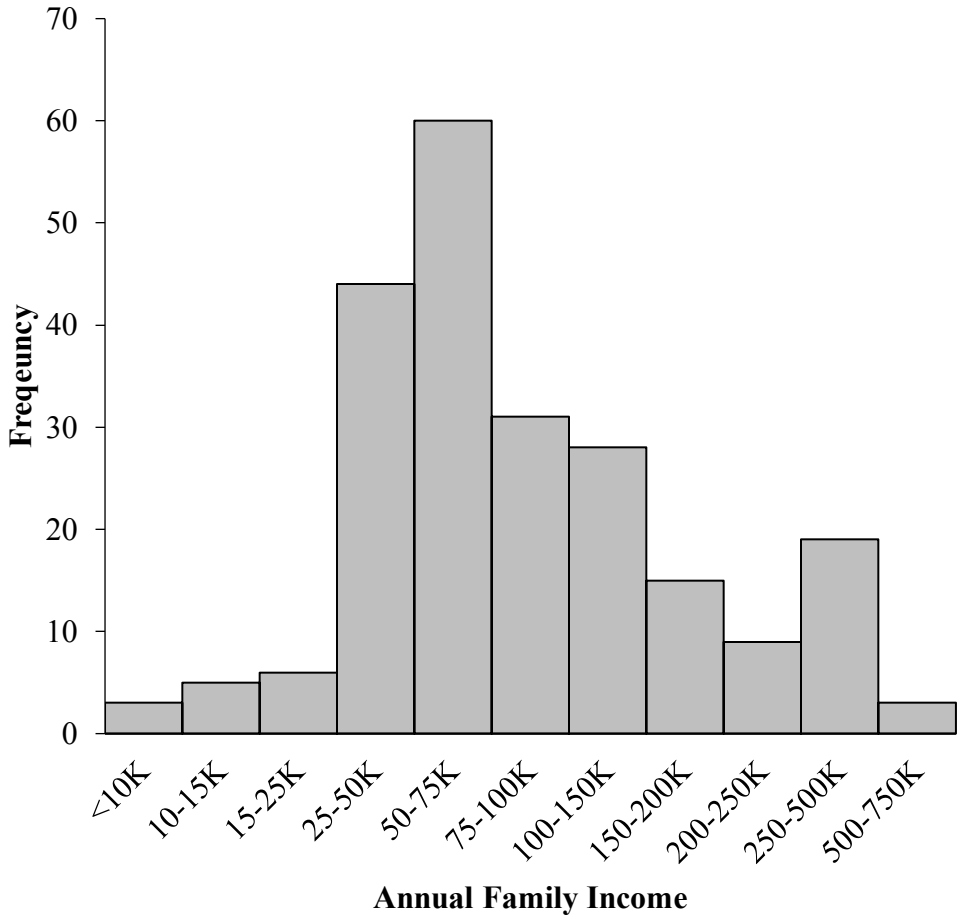

Figure 2. Distribution of participants' reported annual family income bracket.

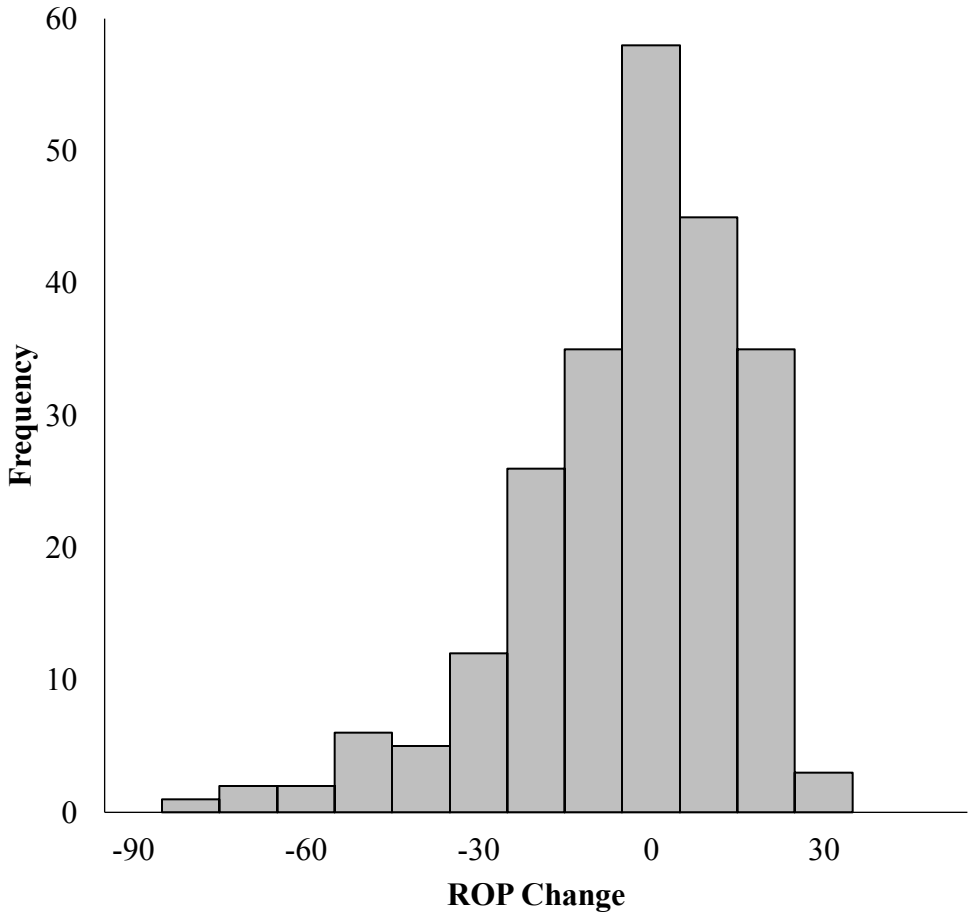

Figure 3. Distribution of the ROP change from high school to college.

Table 1

College Economic Demographics for Full-Time Undergraduate Students

College	Participants N (%)	Student Body Size	Annual tuition and fees ($)	Graduation Rate (%)	Students with Financial Need (%)	Graduating with Student Loan Debt (%)	Average debt of graduates ($)	Pell Grant Recipient (%)
A	45 (19.6)	4340	31,760	74	73	80	33,685	29
B	47 (20.4)	2045	46,167	93	55	39	18,302	13
C	59 (25.7)	2449	39,120	81	72	76	36,636	25
D	45 (21.3)	2039	45,388	90	69	68	24,156	17
E	30 (13.0)	3125	40,700	89	65	60	28,396	14

Note. Number of participants and student body size measured in people.

Table 2

Results from Hierarchical Linear Models: Predictors and Mediators of Course Self-Efficacy

	Model							
	1		2		3		4	
	b	SE	*b*	SE	*b*	SE	*b*	SE
Intercept	8.98	0.01***	8.87	0.11***	8.88	0.11***	5.92	0.44***
Ethnicity								
Asian	-0.78	0.32*	-0.62	0.32	-0.58	0.32	-0.51	0.29
Latino	-1.15	0.41**	-0.92	0.40*	-0.93	0.41*	-0.88	0.37*
Black	-1.39	0.45**	-1.00	0.48*	-0.90	0.49	-0.24	0.46
Multiracial	-0.10	0.30	0.00	0.30	0.00	0.30	-0.04	0.27
SES Measures								
Income			0.11	0.04**	0.11	0.04*	0.06	0.04
ROPchange			0.00	0.00	0.01	0.00	0.01	0.00
Income x ROPchange					0.00	0.00	0.00	0.00
Mediators								
School belonging							0.76	0.11***

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 3

Results from Hierarchical Linear Models: Predictors and Mediators of Engagement Behaviors

	Model							
	1		2		3		4	
	b	SE	*b*	SE	*b*	SE	*b*	SE
Intercept	3.05	0.06***	3.00	0.07***	3.02	0.07***	2.03	0.29***
Ethnicity								
Asian	-0.38	0.19	-0.46	0.20*	-0.41	0.20*	-0.40	0.19*
Latino	-0.15	0.24	-0.20	0.24	-0.21	0.24	-0.19	0.23
Black	-0.25	0.27	-0.49	0.29	-0.34	0.29	-0.12	0.29
Multiracial	-0.35	0.18	-0.36	0.18*	-0.37	0.18*	-0.37	0.18*
SES Measures								
Income			0.01	0.03	0.00	0.03	-0.01	0.03
ROPchange			-0.01	0.00*	-0.01	0.00*	-0.01	0.00
Income x ROPchange					-0.01	0.00*	-0.01	0.00*
Mediators								
School belonging							0.25	0.07***

Note. *$p < .05$. **$p < .01$. ***$p < .001$.