

Running Head: RACE AND SOCIOECONOMIC BACKGROUND INFLUENCE

How Do Race and Socioeconomic Background Influence Experiences of Good Practices in
Undergraduate Education?

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Abstract

This study estimated the unique effects of SES and race on college students' experiences of good practices in undergraduate education. We conducted an ordinary least square regression in two stages. In the first stage, we regressed each good practice measure on the dummy variables representing students' SES and race/ethnicity as well as an extensive set of controls in a total effects equation. In the second stage, the direct effects equation included additional controls for college experiences. We find the two independent variables of interest (SES and race/ethnicity) uniquely influence good practices. We find students in the highest SES quartile are advantaged on seven of the nineteen good practice measures examined and White students are advantaged on ten of them.

How Do Race and Socioeconomic Background Influence Experiences of Good Practices in Undergraduate Education?

The college experiences and educational outcomes for students of color and disadvantaged socioeconomic (SES) backgrounds have been the focus of few research studies (Appling, 2001; Grayson, 1997; Stanfiel, 1973; Walpole, 2003), while college access issues have received far greater attention (e.g. Haycock, 2006; e.g. Institute for Higher Education Policy, 2006). Although access to postsecondary education is a necessary first step in educational attainment, understanding how minorities and low SES students experience college also plays a pivotal role in assuring equity in higher education. To fully grasp such equity issues, we should expand our analysis to compare disadvantaged students who attend college to their more advantaged college peers (Walpole, 2003). This study contributes to the existing body of knowledge by evaluating the extent to which students of color and low SES students experience vetted good practices in undergraduate education.

We begin with a description of good practices in undergraduate education, the framework used for our analysis, and then provide a review of the current evidence which finds students of color and low SES students are experiencing undergraduate education differently than White and/or high SES students. We then present the details of our methodology, including the results of our study, and conclude with some implications for practice and future research.

Good Practices in Undergraduate Education – A Theoretical Framework

Our study analyzes the extent to which students' race and socioeconomic status affect their experiences of vetted good practices in undergraduate education. The practices are based on Chickering and Gamson's seven principles for good practice in undergraduate education, which highlight principles associated with undergraduate students' cognitive and personal development

(Chickering & Gamson, 1987, 1991, 1999). These good practices include student-faculty contact, cooperation among students, active learning, academic effort/time on task, prompt feedback to students, high expectations, and respect for diverse experiences and ways of knowing (Chickering & Gamson).

Many studies of higher education have incorporated the seven principles of good practice in undergraduate education, including national surveys such as the National Study of Student Engagement and the College Student Experiences Questionnaire (Chickering & Gamson, 1999; Pascarella et al., 2006). While several studies have examined students' experiences of these good practices based on institutional type (Pascarella et al., 2006; Pascarella, Wolniak, Cruce, & Blaich, 2004; Seifert, Drummond, & Pascarella, 2006) others have focused the effects of these good practices on educational outcomes (Cruce, Wolniak, Seifert, & Pascarella, 2006). Specifically, Cruce et al. found that good practices in undergraduate education lead to positive educational outcomes like better critical thinking, reading comprehension, and openness to diversity.

The demonstrated predictive validity of the good practices (see Pascarella et al., 2006), warrants an analysis of the extent to which students of color and low SES backgrounds experience good practices. While current research focuses extensively on access (e.g. Haycock, 2006; Institute for Higher Education Policy, 2006), there is very little research on the educational experiences of these particular students. A review of the literature follows.

Educational Experiences of Low SES Students

Research on the college experiences of low SES students indicates that they spend less time on student activities and studying, receive lower grades, and work more hours for pay when compared to high SES students (Walpole, 2003). Grayson (1997) found similar results in a study

of primarily low SES first-generation college students that revealed those students spent less time on cultural involvement and student activities than their peers did, although the impact of these involvements on student grades differed in direction and magnitude. Appling (2001) found that a student's socioeconomic background directly affected their senior year activities, including cooperative learning, tutoring others, and discussing course content with other students. In turn, these activities, which lower SES students experienced less frequently, affected critical thinking and problem-solving abilities (Appling).

Educational Experience of Student of Color

We found few studies expressly comparing students of color to White students on educational experiences. Lundberg and Schreiner (2004) compared the effects of different domains of student-faculty interaction on student learning across seven racial/ethnic groups. Although faculty interaction powerfully predicted student learning in the entire sample, it explained more of the variance in student learning for students of color than White students, indicating that student-faculty interaction is particularly influential on student learning for students of color. A number of other studies have compared the college experiences of individual racial/ethnic groups, specifically African-Americans, to White students and have focused on the quality of student effort in terms of academic and social experiences and involvement in college. DeSousa and King (1992) found few differences in quality of student effort and involvement between African-American and White students. MacKay and Kuh (1994) supported and extended these findings, observing that different types of college involvement contributed differently to gains in general education and intellectual skills for African-American and White students.

Pascarella, Wolniak, Seifert, Cruce, and Blaich (2005) found liberal arts experiences (in large part a composite scale of good practices) had a compensatory effect for students of color and others below the mean on a host of cognitive outcomes and orientations toward learning. Likewise, Kuh, et al. (2006) found that underrepresented students benefited disproportionately more than White students in terms of their first to second year persistence from academic engagement efforts akin to good practices (2006).

Questions Guiding the Current Study

The weight of the evidence seems to suggest that although academic and social college experiences, including experiences of good practices in undergraduate education, predict student learning, the magnitude of these effects often differ by students' race or SES. In addition, minorities and low SES students traditionally have more ground to make up in the positive cognitive and developmental outcomes that existing research associates with exposure to good practices. Thus, it stands to reason that these students would benefit the most from those practices. These notions drove our desire to better understand the effect of good practices in undergraduate education on students of color and students of low SES backgrounds. The following questions guided our inquiry: Do students from lower socioeconomic backgrounds experience good practices in undergraduate education to the same extent as students from higher socioeconomic backgrounds? Do students of color experience good practices in undergraduate education differently than White students?

Research Methods

Sample and Data Collection

The study sample is comprised of students who participated in the National Study of Student Learning (NSSL), a federally-funded, longitudinal study of college student experiences

and outcomes. The NSSL followed samples of students from 23 two- and four-year colleges for a period of three years. Initiated in the fall of 1992 and continued through the spring of 1995, the study assessed factors that influence students' learning and cognitive development during college.

The institutional sample consisted of 18 four-year and 5 two-year colleges and universities located in 16 states throughout the country. Institutions were chosen from the National Center on Education Statistics' Integrated Postsecondary Education Data System (IPEDS) data to represent differences in colleges and universities nationwide on a variety of characteristics including institutional type and control, size, location, residential character, and ethnic distribution of the undergraduate student body. Our sampling technique resulted in a student population from 23 schools that approximated the national population of undergraduates by ethnicity and gender.

We examined data from the initial and first follow-up collection for the current study. 3,895 students participated in the initial NSSL data collection. Students completed an NSSL precollege survey that gathered information on demographic characteristics, precollege experiences, educational aspirations, learning orientations, and expectations about college. Participants also completed the reading comprehension, mathematics knowledge, and critical thinking tests of the Collegiate Assessment of Academic Proficiency (CAAP) developed by ACT (American College Testing Program, 1990). Each of the three tests consisted of multiple-choice items and was 40 minutes long.

2,685 students (approximately 67% response rate) participated in the first NSSL follow-up data collection, conducted in the spring of 1993. This data collection included a posttest of the CAAP instruments, the College Student Experiences Questionnaire (CSEQ) (Pace, 1990), and a

follow-up to the NSSL pre-college survey. The CSEQ and the NSSL follow-up instrument measured a wide range of students' curricular and out-of-class experiences in the first year of college. The NSSL follow-up instrument also reassessed the students' aspirations and learning orientations.

To adjust for potential sample bias by sex, race/ethnicity, and institution, we developed a sample weighting algorithm for each wave of follow-up data. Within each of the institutions, participants in the follow-up data collection were weighted up to that institution's population for the appropriate year by sex (male or female) and race/ethnicity (White, Black, Hispanic, Other). After listwise deletion on the dependent variable of interest, complete data ranged from 2,397 to 2,410.

Dependent Variables

The dependent variables in the study consisted of 19 individual measures of empirically-validated good practices in undergraduate education, informed by Chickering and Gamson's (1987, 1991) principles of good practice in undergraduate education and research on effective teaching and influential peer interactions in college (Pascarella & Terenzini, 1991, 2005). We distributed the 19 measures among the seven principles of good practice: student-faculty contact, cooperation among students, active learning, prompt feedback, time on task, high expectations, and diverse ways of knowing and learning as measured by influential interaction with other students. We provide detailed operational definitions and psychometric properties of all good practice scales in the Appendix.

Independent Variables

We were interested in the unique effects of two independent variables on students' experiences of good practices in undergraduate education. The first independent variable was a

set of dummy variables (coded 1 or 0) indicating students' SES quartile. We chose to focus on SES rather than the constituent constructs of family income and parents' education to maintain parsimony within the regression models¹. We derived the SES variable by summing the standardized variables of parents' income and the total of parents' education. We then standardized this interim variable (i.e., converted it to a z-score) and divided it into four quartiles. In all analyses, we compared students in the lowest SES quartile to those in the three other SES quartiles. As such, students in the lowest SES quartile serve as the reference category.

We were also interested in the unique effect of race/ethnicity (coded 1 for White students and 0 for students of color). Due to small numbers of African American, Latino/a, Asian/Pacific Islander, and Native American students, we were not able to conduct a refined analysis between each racial ethnic group and White students. Therefore, we chose to compare students of color to White students on experiences of good practices in undergraduate education, net of students' SES and all other confounding influences.

Analyses

We conducted the analyses in two stages. In the first stage, we regressed each good practice measure on the dummy variables representing students' SES and race/ethnicity as well as an extensive set of controls in a total effects equation. The controls included gender, academic ability, secondary school grades and involvement, work obligations during high school, academic motivation, respondents' number of dependent children, whether college attended was first choice, and plans for a graduate degree. In the second stage, the direct effects equation included the previous controls as well as the following controls for college experiences: on-campus residence; cumulative number of credit hours completed; hours worked on- and off-

¹ We did, however, conduct the analyses with the individual constructs of family income, mother's education, and father's education and found that the more complex models did not substantially change the interpretation of the results.

campus for pay; course taking patterns in the following areas: natural sciences, math, social sciences, technical courses, and arts & humanities; and a set of dummy variables for the type of institution attended (i.e., community college, research university, regional institution, or historically Black college with liberal arts college serving as the reference group).

We based all analyses on the weighted sample estimates, adjusted to the actual sample size to obtain correct standard errors. In all analyses yielding significant effects, we estimated the size of the effect by dividing the metric regression weights for the independent variables (SES quartile and race/ethnicity) by the pooled standard deviation of the dependent variable (Hays, 1994). The resulting effect size (ES) is that part of a standard deviation that the independent variable is advantaged or disadvantaged relative to the reference category on the dependent measure net of other variables in the regression equation.

Results

We find the two independent variables of interest (SES and race/ethnicity) uniquely influence good practices, net of an extensive set of controls and the other independent variable. In other words, the effects we find for the SES quartile variables on experiences of good practices hold, controlling for race/ethnicity and a host of other confounding influences and vice versa. Additionally, we find an interesting set of effects with respect to the SES quartiles. Specifically, students in the highest SES quartile (compared to students in the lowest quartile) are advantaged in several areas of experiencing good practices, and interestingly, students in the second-highest SES quartile report the fewest advantages relative to their peers in the lowest quartile.

Influences of SES on Experiences of Good Practices

Net of a host of student background characteristics, other college experiences, and institutional type, we find students in the highest SES quartile are advantaged on seven of the nineteen good practice measures examined (see Table 1). The good practices in which students in the highest SES quartile are advantaged relative to students in the lowest SES quartile include: faculty interest in teaching and student development, course-related interaction with peers, academic effort/involvement, number of textbooks or assigned readings, number of term papers or other written reports, non-course-related interactions with peers, and cultural and interpersonal involvement. The magnitude of these advantages ranges from an effect size of .15 to .25 ($p < .05$). These findings suggest that after taking into account background characteristics, where students attend college, the courses they take, the amount they work, where they live, and the number of credit hours completed, students in the highest SES quartile are still advantaged on several measures of good practice compared to their lower SES peers.

When comparing students in the second-highest and second-lowest-quartiles with students in the lowest quartile, we find far fewer significant effects of SES on good practices, suggesting that the experience gap does not reveal itself until the SES gap is sufficiently large. In fact, a comparison of the second highest quartile to the lowest reveals the only measure on which we find students of a higher SES quartile to be *disadvantaged* on a measure of good practice. Specifically, we find students in the second-highest SES quartile are disadvantaged in terms of course challenge/effort compared to their peers in the lowest quartile (-.13 ES, $p < .05$). This negative effect disappears, however, when we enter institutional and other college experience variables into the equation. Finally, after taking into account student background characteristics, other college experiences, and type of institution attended, students in the second-lowest SES quartile are advantaged on three of the good practice measures investigated: faculty

interest in teaching and student development, academic effort/involvement, and non-course-related interaction with peers.

Influences of Race/Ethnicity of Experiences of Good Practices

In terms of race/ethnicity (see Table 2), we find White students to be advantaged on half of the measures of good practice examined, net of an extensive battery of controls including SES. The magnitude of the effect sizes for race/ethnicity (being White vs. a student of color) ranges from .12 to .27 ($p < .05$). These effect sizes tend to be larger than those found in the SES quartile comparisons, suggesting that race may influence student experiences of good educational practices more than SES. Whereas several of the SES effects were reduced to non-significance after accounting for college experience and institutional-level variables, more of the race/ethnicity effects on good practices remained. Controlling for student background characteristics as well as other college experiences and institutional type, White students are advantaged in terms of quality of non-classroom interactions with faculty, faculty interest in teaching and student development, academic effort/involvement, number of essay exams in courses, using computers for academic work, and instructional organization and preparation.

Limitations and Future Research

We recognize that our data are dated and thus, the conclusions drawn must be carefully considered. We continue to rely on the NSSL data, despite their age, because we know of no other multi-institutional, longitudinal data set that allows for such extensive introduction of background controls and such an array of reliable and valid measures of good practices in undergraduate education.

At this time, the Wabash National Study of Liberal Arts Education is collecting data from students at institutions from around the country. This longitudinal study funded by the Center of

Inquiry in the Liberal Arts at Wabash College will provide a significant opportunity to replicate the present findings with data more reflective of today's postsecondary students and their experiences. In a preliminary replication effort, we conducted these same analyses on data from the four institutions involved in the pilot phase of the Wabash national study. We found far fewer effects, which may be a signal that American higher education may be closing the good practice experiences gap between underrepresented students and their more advantaged peers. On the other hand, these results may be an artifact of a lack of statistical power due to the small sample size (approximately 700 students) and restricted institutional sample.

We believe the findings from the full longitudinal study will provide a richer understanding of the possible changing nature of underrepresented students' experiences of good practices in undergraduate education. We look forward to conducting that set of analyses in Fall 2007. In the meantime, we draw the following conclusions from the current study.

Discussion and Implications

Experiencing good educational practices matters. Research indicates that good practices positively influence fundamentally desirable higher education outcomes, including cognitive development, orientations to learning, openness to diversity, and educational aspirations (Cruce et al., 2006), as well as graduation rates (Haycock, 2006; Kuh, Kinzie, Cruce, Shoup, & Gonyea, 2006). We also know that enhancing these outcomes for college students leads to positive psychosocial development (Pascarella et al., 2006; Pascarella & Terenzini, 1991, 2005). Put simply, good practices in undergraduate education contribute to student learning, increasing the likelihood that students will graduate, as well as positively affecting students' lives long after they leave campus. When we see inequities in the extent to which students experience these

practices, we should be concerned about the source of these inequities and should employ measures to correct them.

Our findings indicate that students' SES and race do affect their educational experiences. Students in the lowest SES quartile do not experience faculty contact, active learning, and high expectations – educational experiences dependent on faculty interactions – to the same extent as students in the highest SES quartile. Nor do they experience positive peer interactions, specifically academic cooperation among peers and influential interactions with other students, to the same extent as students in the highest SES quartile. Students of color are disadvantaged, compared to White students, on several educational practices related to faculty interactions: student-faculty contact; active learning/time on task; and quality of teaching. According to the current findings, students of color are not disadvantaged in peer interactions.

At first glance, one could imagine that gaps in exposure to good practices arise from institutional differences, the types of courses taken, living on or off campus, and how much a student works. Yet if this were the case, the experience gap should disappear when we control for these potential explanations, but it did not. Our findings indicate that even when low SES and minority students attend the same schools, take the same types of courses, have the same living arrangements, and work the same amount, they tend not to experience some established good practices to the same extent as their relatively advantaged peers.

The reasons for these findings are not entirely apparent but some of the patterns suggest explanations. Our results show that students from low SES backgrounds trailed high SES peers in measures of quality peer interactions. It could be that low SES students do not feel comfortable in these situations because they feel they don't "fit in" on campus. Alternatively, low SES students simply may not understand the benefits of such interactions and thus make

little effort to participate. Likewise, experience gaps for students of color exist on three of four active learning measures. Perhaps there is something unique in the experience of these students that dissuades them from taking classes that use essay exams or that require more intense involvement.

Our results suggest that, at a minimum, we need further research to understand the experiences of minority and low SES students relative to their White and high SES peers. The data used in our study are dated and we do not pretend to know whether higher minority and low SES enrollments in the thirteen years since the data collection exacerbate or mitigate our findings. The relative absence of significant experience gaps in the Wabash pilot study suggest that things may have improved since collection of the NSSL data. But other events suggest just the opposite. For example, in the wake of the Supreme Court's holdings in *Gratz* and *Grutter*, a civil rights group sued the City University of New York after it instituted programs specifically designed to empower black male students (Schmidt, 2006). Others have written on the negative effects of the commoditization of higher education and the resulting homogenization of course offerings and materials (Wilson, 2006). If these events reflect broader trends, we can imagine that such external pressures have dampened initiatives tailored to assist disadvantaged students, resulting in wider experience gaps.

All that said, what we do expect is that institutions and faculty would universally support the notion that the extent to which students experience good practices should not depend on their race or SES background and to that end, should be committed to learning more about the extent and causes of this potential problem. If future research replicates these findings, institutions will want to consider how they can close the experience gap. It could mean that we should revise existing programs like freshman orientation, first-year programs, and academic advising to

increase emphasis on the student's role in experiencing good practices. We might work with those who administer such programs to be conscious of the unique needs of students of color and encourage those administrators to remind such students of the benefits of courses with essay exams and paper-writing requirements. We might also work with academic advisors to encourage low SES students and students of color to take advantage of opportunities to meet with faculty outside of class to discuss course materials and how they relate to problems encountered in our everyday lives.

An experience gap could also mean that institutions should provide more support for faculty to help them recognize how the gap arises and how to correct it. Institutions may want to reward faculty who develop innovative ways to implement established good practices and ensure that minorities and low SES students enjoy their full benefits. They may also want to develop and sustain their programs that serve underrepresented populations, even if those programs come under attack in the ongoing diversity debates.

Much has been written about enrollment gaps between white and minority or rich and poor, and rightly so. While the public debate pitting traditional affirmative action versus economic affirmative action rages on in the political arena, it is possible that colleges and universities are overlooking some needs of both minority and low SES students once they reach campus. If disadvantaged students do not enjoy the same experiences available to other students once enrolled, then resolving only problems of access will not fully resolve race and class-based gaps in the benefits of a college degree. The benefits of those hard-earned gains in access could dwindle unnecessarily as a consequence of divergent experiences in the classroom.

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Appendix
Operational Definitions of Variables

Dependent Variables

Student-Faculty Contact

Quality of nonclassroom interactions with faculty: An individual's responses on a five-item scale that assessed the quality and impact of one's nonclassroom interactions with faculty. Examples of constituent items were: "Since coming to this institution I have developed a close personal relationship with at least one faculty member," "My nonclassroom interactions with faculty have had a positive influence on my personal growth, values and attitudes," and "My nonclassroom interactions with faculty have had a positive influence on my intellectual growth and interest in ideas." Response options were: 5 = strongly agree, 4 = agree, 3 = not sure, 2 = disagree, and 1 = strongly disagree. Alpha reliability = .83.

Faculty interest in teaching and student development: An individual's responses on a five-item scale assessing students' perceptions of faculty interest in teaching and students. Examples of constituent items were: "Few of the faculty members I have had contact with are genuinely interested in students" (coded in reverse), "Most of the faculty members I have had contact with are genuinely interested in teaching," and "Most of the faculty members I have had contact with are interested in helping students grow in more than just academic areas." Response options were: 5 = strongly agree, 4 = agree, 3 = not sure, 2 = disagree, 1 = strongly disagree. Alpha reliability = .71.

Cooperation Among Students

Instructional emphasis on cooperative learning: An individual's responses on a four-item scale that assessed the extent to which the overall instruction received emphasized cooperative learning. Examples of constituent items were: "I am required to work cooperatively with other students on course assignments," "In my classes, students teach each other in groups instead of only having instructors teach," and "Instructors encourage learning in student groups." Response options were: 4 = very often, 3 = often, 2 = occasionally, and 1 = never. Alpha reliability = .81.

Course-related interaction with peers: An individual's responses on a ten-item scale that assessed the nature of one's interactions with peers focusing on academic coursework. Examples of constituent items were: "Studying with students from my classes," "Tried to explain the material to another student or friend," and "Attempted to explain an experimental procedure to a classmate." Response options were: 4 = very often, 3 = often, 2 = occasionally, and 1 = never. Alpha reliability = .79.

Appendix (Continued)

Active Learning/Time on Task

Academic effort/involvement: An individual's response on a 37-item, factorially derived, but modified scale that assessed one's academic effort or involvement in library experiences, experiences with faculty, course learning, and experiences in writing. The scale combined four, 10-item involvement dimensions from the CSEQ, minus three items that were incorporated into the Course-Related Interaction with Peers Scale described above. Examples of constituent items were: "Ran down leads, looked for further references that were cited in things you read," "Did additional readings on topics that were discussed in class," and "Revised a paper or composition two or more times before you were satisfied with it." Response options were 4 = very often, 3 = often, 2 = occasionally, and 1 = never. Alpha reliability = .92.

Number of essay exams in courses: An individual's response to a single item from the CSEQ. Response options were: 1 = none, to 5 = more than 20.

Instructor use of high-order questioning techniques: An individual's responses on a four-item scale that assessed the extent to which instructors asked questions in class that required high-order cognitive processing. Examples of constituent items were: "Instructors' questions in class ask me to show how a particular course concept could be applied to an actual problem or situation," "Instructors' questions in class ask me to point out any fallacies in basic ideas, principles or points of view presented in the course," and "Instructors' questions in class ask me to argue for or against a particular point of view." Response options were: 4 = very often, 3 = often, 2 = occasionally, and 1 = never. Alpha reliability = .80.

Emphasis on high-order examination questions: An individual's responses on a five-item scale that assessed the extent to which examination questions required high-order cognitive processing. Examples of constituent items were: "Exams require me to point out the strengths and weaknesses of a particular argument or point of view," "Exams require me to use course content to address a problem not presented in the course," and "Exams require me to compare or contrast dimensions of course content." Response options were: 4 = very often, 3 = often, 2 = occasionally, and 1 = never. Alpha reliability = .77.

Using computers: An individual's response on a three-item scale indicating extent of computer use: "Using computers for class assignments," "Using computers for library searches," and "Using computers for word processing." Response options were: 4 = very often, 3 = often, 2 = occasionally, and 1 = never. Alpha reliability = .65.

Prompt Feedback

Instructor feedback to students: An individual's response on a two-item scale that assessed the extent to which the overall instruction received provided feedback on student progress. The items were: "Instructors keep me informed of my level of performance," and "Instructors check to see if I have learned well before going on to new material." Response options were: 4 = very often, 3 = often, 2 = occasionally, and 1 = never. Alpha reliability = .70.

Appendix (Continued)

High Expectations

Course challenge/effort: An individual's responses on a six-item scale that assessed the extent to which courses and instruction received were characterized as challenging and requiring high level of effort. Examples of constituent items were: "Courses are challenging and require my best intellectual effort," "Courses require more than I can get done," and "Courses require a lot of papers or laboratory reports." Response options were: 4 = very often, 3 = often, 2 = occasionally, and 1 = never. Alpha reliability = .64.

Number of textbooks or assigned readings: An individual's response on a single item from the CSEQ. Response options were: 1 = none, to 5 = more than 20.

Number of term papers or other written reports: An individual's response on a single item from the CSEQ. Response options were: 1 = none, to 5 = more than 20.

Scholarly/intellectual emphasis: An individual's responses on a three-item scale that assessed perceptions of the extent to which the climate of one's college emphasized: 1) the development of academic, scholarly, and intellectual qualities; 2) the development of esthetic, expressive, and creative qualities; or 3) being critical, evaluative, and analytical. Response options were on a semantic differential-type scale where 7 = strong emphasis and 1 = weak emphasis. Alpha reliability = .79.

Quality of Teaching

Instructional skill/clarity: An individual's responses on a five-item scale that assessed the extent to which the overall instruction received was characterized by pedagogical skill and clarity. Examples of constituent items were: "Instructors give clear explanations," "Instructors make good use of examples to get across difficult points," and "Instructors interpret abstract ideas and theories clearly." Response options were: 4 = very often, 3 = often, 2 = occasionally, and 1 = never. Alpha reliability = .86.

Instructional organization and preparation: An individual's responses on a five-item scale that assessed the extent to which the overall instruction received was characterized by good organization and preparation. Examples of constituent items were: "Presentation of material is well organized," "Instructors are well prepared for class," and "Class time is used effectively." Response options were: 4 = very often, 3 = often, 2 = occasionally, and 1 = never. Alpha reliability = .87.

Influential Interactions With Other Students

Quality of interactions with students: An individual's responses on a seven-item scale that assessed the quality and impact of one's interactions with other students. Examples of constituent items were: "Since coming to this institution I have developed close personal relationships with other students," "My interpersonal relationships with other students have had

 Appendix (Continued)

positive influence on my personal growth, attitudes and values," and "My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas." Response options were: 5 = strongly agree, 4 = agree, 3 = not sure, 2 = disagree, and 1 = strongly disagree. Alpha reliability = .82.

Non-course-related interactions with peers: An individual's response on a ten-item scale that assessed the nature of one's interactions with peers focusing on non-class, or non-academic issues. Examples of constituent items were: "Talked about art (painting, sculpture, architecture, artists, etc.) with other students at the college," "Had serious discussions with students whose philosophy of life or personal values were very different from your own," and "Had serious discussions with students whose political opinions were very different from your own." Response items were 4 = very often, 3 = often, 2 = occasionally, and 1 = never. Alpha reliability = .84.

Cultural and interpersonal involvement: An individual's response on a 38-item, factorially-derived, but modified scale that assessed one's effort or involvement in art, music, and theater, personal experiences, student acquaintances and conversations with other students. The scale combined items from five involvement dimensions of the CSEQ, minus eight items that were incorporated into the Non-Course-Related Interactions With Peers Scale described above. Examples of constituent items were: "Seen a play, ballet, or other theater performance at the college," "Been in a group where each person, including yourself, talked about his/her personal problems," "Made friends with students whose interests were different from yours," "Had conversations with other students about major social problems such as peace, human rights, equality, and justice," and "In conversations with other students explored different ways of thinking about the topic." Response options were: 4 = very often, 3 = often, 2 = occasionally, and 1 = never. Alpha reliability = .92.

Independent Variables

Race: A dummy variable coded: 1 = Caucasian, 0 = Students of color.

Socioeconomic status: A set of dummy variables (coded 1 or 0) indicating students' socioeconomic status quartile. We derived the socioeconomic status variable by summing the standardized variables of parents' income and the total of parents' education. This interim variable was then standardized (i.e. turned into a z-score) and divided into four quartiles. Students in the lowest quartile serve as the reference category.

Appendix (Continued)

Control Variables*Controls for students pre-college characteristics*

Gender: A dummy variable coded: 1 = female, 0 = male.

Standardized measure of academic ability: An individual's response to a question asking for their ACT Composite or SAT total score. SAT scores were converted to an ACT score.

Self-reported secondary school grades: An individual's response to the question: "What is your best estimate of your grade point average in high school?" (Coded: 1 = D+ or lower, 2 = C, C-; 3 = B-, C+; 4 = B; 5 = A-, B+; 6 = A).

High school involvement: An individual's Fall 1992 score on an 7-item scale that measured the student's involvement in studying, socializing with friends, talking with teachers outside of class, exercising or playing sports, studying with friends, volunteer work, and extracurricular activities. Alpha reliability = .76.

High school work: An individual's Fall 1992 report of time spent working for pay while in high school. (Coded: 1 = Never, 2 = Occasionally, 3 = Often, 4 = Very Often).

Pre-college academic motivation: An individual's Fall 1992 score on an eight-item, Likert-type scale (5 = strongly agree to 1 = strongly disagree) assessing motivation for academic work and learning. The scale items were based on existing research on academic motivation (e.g., Ball, 1977). Examples of constituent items are: "I am willing to work hard in a course to learn the material even if it won't lead to a higher grade," "When I do well on a test, it is usually because I was well-prepared not because the test was easy," "In high school I frequently did more reading in a class than was required simply because it interested me," and, "In high school I frequently talked to my teachers outside of class about ideas presented during class." Alpha reliability = .65.

Number of dependent children of the respondent: An individual's report of how many dependent children the had. (Coded 1 = None, 2 = 1, 3 = 2, 4 = 3, 5 = more than 3).

College choice: An individual's Fall 1992 response to the question: "Is this college your: first choice, second choice, third choice, or less than third choice?" (Coded: 1 = first choice 0 = other choice).

Pre-college plans to obtain a graduate degree: An individual's response to the question: "What is the highest academic degree you intend to obtain in your lifetime?" Coded 1 = Master's degree or above, 0 = bachelor's degree or below. The measure was employed in the prediction of all end-of-first-year outcomes.

Appendix (continued)

Controls for Institutional type

Research university: 1 = student attends a research university, 0 = otherwise.

Regional university: 1 = student attends a regional university, 0 = otherwise.

Historically black college: 1 = student attends a historically black college, 0 = otherwise.

Community college: 1 = student attends a community college, 0 = otherwise.

Liberal arts college: 1 = student attends a liberal arts college, 0 = otherwise. (Reference group).

Controls for other first-year academic and non-academic experiences

Credit hours: A continuous variable that represented the number of credit hours completed.

On-campus residence: Dummy variable coded: 1 = lived on-campus, 0 = lived off campus and commuted.

Hours worked per week on campus: Average number of hours of on-campus work per week during the school year, Coded 1 = none to 9 = more than 35.

Hours worked per week off campus: Average number of hours of off-campus work per week during the school year, Coded 1 = none to 9 = more than 35.

Arts and humanities courses taken: Cumulative number of college courses taken through the 1st, 2nd, or 3rd years in art history, art appreciation, studio art, dance, theater, music appreciation, music performance, composition of writing, English literature, foreign language, humanities, philosophy, linguistics, classics, or religious studies.

Social sciences courses taken: Cumulative number of college courses taken through the 1st, 2nd, or 3rd years in anthropology, audiology/speech pathology, child and family services, communications, economics, geography, history, political science, psychology, sociology, or social work.

Mathematics courses taken: Cumulative number of college courses taken through the 1st, 2nd, or 3rd years in pre-algebra, algebra, calculus, statistics, computer science, geometry, matrix algebra, accounting, or business math.

Natural sciences and engineering courses taken: Cumulative number of college courses taken through the 1st, 2nd, or 3rd years in astronomy, biology, botany, chemistry, physics, geology, zoology, microbiology, or engineering.

Technical/pre-professional courses taken: Cumulative number of college courses taken through the 1st, 2nd, or 3rd years in drawing, drafting, architectural design, criminology, ed., agriculture, business, physical therapy, pharmacy, physical ed., nursing, or computer programming.

Table 1

*Statistically Significant Estimated Net Effects of Student Socioeconomic Status (SES)^a
on Exposure to Good Practices in the First Year of College^b*

(N = 2397 to 2410, attending 23 institutions)

Good Practice Dimension	Highest SES Quartile vs. Lowest Quartile		Second Highest SES Quartile vs. Lowest Quartile		Second lowest SES Quartile vs. Lowest Quartile	
	TE ^c	DE ^d	TE ^c	DE ^d	TE ^c	DE ^d
Student-Faculty Contact						
Faculty interest in teaching and student development	.244 (9.6)	.240 (9.5)			.163 (6.4)	.133 (5.2)
Cooperation Among Peers						
Course-related interaction with peers	.225 (8.9)	.181 (7.1)	.146 (5.7)	.139 (5.5)		
Active Learning/Time on Task						
Academic effort/involvement	.223 (8.8)	.188 (7.4)			.162 (6.4)	.125 (4.9)
Number of essay exams in courses	.157 (6.2)				.168 (6.6)	
Instructor use of higher-order questioning techniques					.126 (5.0)	
Using computers for academic work	.228 (9.0)				.154 (6.1)	
High Expectations						
Course challenge/effort			-.132 (-5.2)			
Number of textbooks or assigned readings	.218 (8.6)	.145 (5.7)				
Number of term papers or other written reports	.302 (11.8)	.251 (9.9)	.135 (5.3)			
Influential Interactions with Other Students						
Quality of interactions with students	.169 (6.7)					
Non-course-related interactions with peers	.297 (11.4)	.228 (9.1)	.124 (4.9)		.116 (4.5)	.121 (4.8)
Cultural and interpersonal Involvement	.301 (11.8)	.241 (9.5)	.170 (6.7)	.141 (5.6)		

^a SES operationally defined as the standardized sum of mother's and father's education and income.

^b Numbers in each column are "effect sizes." That is, the mean difference between respective quartiles, or being white vs. a person of color, divided by the pooled standard deviation of the specific good practice dimension. A positive "effect size" indicates the extent of advantage whereas a negative "effect size" indicates the extent of disadvantage. Only statistically significant effect sizes are shown. Numbers in parentheses in each column are effect sizes converted to percentile point advantages or disadvantages.

^c TE = Total Effect: Controls introduced for: race, gender, a standardized measure of academic ability, secondary school grades, an eight-item measure of secondary school involvement, work obligations during high school, a measure of academic motivation, number of dependent children, college attended as first or lower choice, and plans for a graduate degree.

^d DE = Direct Effect: Controls include all those in the Total Effects estimations (note "c" above) plus type of institution attended (i.e., liberal arts college, research university, regional institution, historically black college, community college), patterns of coursework taken in five areas (arts and humanities, natural sciences, social sciences, mathematics, and technical/pre-professional), hours per week employed on campus and off campus, living on campus vs. commuting to college, number of credit hours taken.

Table 2

Statistically Significant Estimated Net Effects of Student Race on Exposure to Good Practices in the First Year of College^b

(N = 2397 to 2410, attending 23 institutions)

Good Practice Dimension	White vs. Person of Color	
	TE ^c	DE ^d
Student-Faculty Contact		
Quality of non-classroom interactions with faculty	.261 (10.3)	.172 (6.8)
Faculty interest in teaching and student development	.307 (12.0)	.236 (9.3)
Active Learning/Time on Task		
Academic effort/involvement	.176 (7.0)	.197 (7.8)
Number of essay exams in courses	.225 (8.9)	.190 (7.5)
Instructor use of higher-order questioning techniques	.123 (4.8)	
Using computers for academic work	.269 (10.6)	.267 (10.5)
Prompt Feedback		
Instructor feedback to students	.137 (5.4)	
High Expectations		
Course challenge/effort	.201 (7.9)	
Quality of Teaching		
Instruction skill/clarity	.124 (4.9)	
Instructional organization and preparation	.202 (8.0)	.124 (4.9)

^a SES operationally defined as the standardized sum of mother's and father's education and income.

^b Numbers in each column are "effect sizes." That is, the mean difference between respective quartiles, or being white vs. a person of color, divided by the pooled standard deviation of the specific good practice dimension. A positive "effect size" indicates the extent of advantage whereas a negative "effect size" indicates the extent of disadvantage. Only statistically significant effect sizes are shown. Numbers in parentheses in each column are effect sizes converted to percentile point advantages or disadvantages.

^c TE = Total Effect: Controls introduced for: race, gender, a standardized measure of academic ability, secondary school grades, an eight-item measure of secondary school involvement, work obligations during high school, a measure of academic motivation, number of dependent children, college attended as first or lower choice, and plans for a graduate degree.

^d DE = Direct Effect: Controls include all those in the Total Effects estimations (note "c" above) plus type of institution attended (i.e., liberal arts college, research university, regional institution, historically black college, community college), patterns of coursework taken in five areas (arts and humanities, natural sciences, social sciences, mathematics, and technical/pre-professional), hours per week employed on campus and off campus, living on campus vs. commuting to college, number of credit hours taken.