

Test Scores, Self-Efficacy, and the Educational Plans
of First-Year College Students

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Abstract

Educational aspirations and expectations are important factors in the success of students in postsecondary education, yet they are not well understood. This study examines the demographic and psychological factors that contribute to the development of educational aspirations, expectations, and plans among entering college students in order to garner insight into how students' plans can be affected by one aspect of the college admissions process: standardized test scores. Results indicate that the impact of ACT scores on the self-efficacy of students affects the educational plans of college freshmen.

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Educational aspirations and expectations are important factors in the success of students in postsecondary education. Although the educational aspirations of students are a major factor in academic and occupational success, they are not well understood. Most of the existing literature focuses on the ascriptive (i.e. gender, race, socioeconomic status) and contextual factors (i.e. high school academic and socioeconomic status), with little attention paid to the processes by which different experiences affect aspirations. The numerous ways institutions of higher education can affect the process by which students formulate their educational plans can be better understood through examination of the relationships between educational policies and practices and their influence on students' plans. This study examines the demographic, academic, and psychological factors that contribute to the development of educational aspirations, expectations, and plans among entering college students in order to garner insight into how students' plans can be affected by one aspect of the college admissions process: standardized test scores. In what ways do college entrance examination scores impact academic self-efficacy and the educational plans of college freshmen? An exploratory study of the impact standardized test scores can have on students' educational plans may bring attention to the possible importance of research in this area, and provide policymakers and practitioners with valuable information regarding how one aspect of higher education policy can influence the educational futures of students and how that influence can be modified or improved.

Educational Plans

Aspirations are one of the least understood concepts related to student achievement in higher education (Carter, 1999). Although the aspirations of first-year college students have a strong effect on educational plans (Kandel & Lesser, 1979), income and occupational attainment (Pascarella & Terenzini, 1991), academic achievement, and college students' subsequent educational

aspirations, very little is known about the manner by which educational factors affect those aspirations. Most of the literature focuses on the ascriptive and academic predictors of different levels of high school students' educational aspirations. Although some aspects of college, such as curricular flexibility and contact with faculty, have been found to be correlated with aspirations to obtain doctoral degrees (Thistlewhite, 1959; Thistlewhite & Wheeler, 1966), other studies suggest that college students' subsequent aspirations are largely a function of aspirations and other input characteristics that students bring to college (Astin & Panos, 1969; Pascarella, 1984). This paper focuses on factors that shape the educational plans brought to college by first-year students.

One problem with the conceptualization of students' input characteristics is the ambiguity and conceptual and definitional overlapping of educational aspirations, expectations, and plans. "Aspirations" have been defined as desired outcomes, which are not subject to the limitation of constraints on resources (Hauser & Anderson, 1991), while "expectations" have been operationalized as the level of education that students expect to complete during their academic careers (Hanson, 1994). Therefore, while aspirations can be free of social and environmental restrictions, expectations do not imply the absence of such constraints. Despite this major difference among the two concepts, the apparent confusion in past research arises from, what appears to be, difficulty in operationalizing the concept of one's outlook toward his or her educational future.

In a study of factors correlated with college students' aspirations, Pascarella (1984) operationalized students' aspirations as their highest academic degree planned. Given the unlikely nature of the possibility that a student would plan to complete a degree that he or she would not expect to complete, Pascarella's operationalization of aspirations as level of degree planned could be perceived as including a component of expectation or external constraint. The importance of this point is evident in more recent findings that students, especially those from lower socioeconomic backgrounds, witness discrepancies between their aspirations and expectations, and often experience lowered expectations as they adjust them to their observed contextual constraints, even though

the same effect may not be witnessed by their aspirations, which are free of those constraints (Hanson, 1994). In a study examining the educational aspirations and expectations of 28,000 high school students over a 6-year period, Hanson concluded that 16 percent of high school seniors who aspired to obtain a college degree did not expect to obtain one. Due to the assumption that educational aspirations and expectations are both factors in the formulation of students' views about their future educational experience, a more comprehensive definition is needed. Educational plans have been described as "an individual's goals for the college years and the psychological obstructions that must be overcome to reach those goals" (Shilkret & Nigrosh, 1997). For the purposes of this study, both students' desires (i.e. aspirations) to achieve a particular degree and the obstructions (i.e. expectations) that they perceive must be overcome to achieve those goals are included. Therefore, the definition of educational plans employed here is the highest degree that a student intends to complete in his or her lifetime, accounting for all perceived social and psychological obstructions to obtaining that degree.

Self-efficacy is a concept that can be operationalized in many ways. The term is somewhat ambiguous and in the past has been operationalized by using indicators of self-confidence in one's ability in particular academic areas (Rottinghaus, Lindley, Green, & Borgen, 2002). Due to the fact that this study was meant to examine general academic self-efficacy, both students' intellectual self-confidence and perception of their academic ability were included. For the purposes of this study academic self-efficacy is defined as the "belief and confidence in one's ability to be effective in accomplishing their academic goals".

Background and Theoretical Framework

Most of the research focused on educational plans has concentrated on the factors related to differences in the degree-level that high school students intend to attain. The factors that have been investigated can be classified into two distinct categories: demographic characteristics (e.g., race, gender, age, socioeconomic status), and contextual variables (e.g., socioeconomic status of

high school peers, aspirations of high school peers, aptitude of high school peers). The study of educational aspirations in college has been, for the most part, atheoretical (Pascarella, 1984).

The social-psychological and allocation models of status attainment can be used as a framework for analyzing the distinctly different sets of influences affecting students. The status attainment model, first developed by Blau and Duncan (1967) focuses mainly on socioeconomic status and academic ability in explaining attainment. Social interaction with a student's significant others was later added to the model under the premise that a student's interaction with significant others is affected by his or her performance, and that interaction subsequently influences the student's aspirations via encouragement, or lack thereof. While the social-psychological model focuses on individual and interpersonal factors, the social allocation model (Kerckhoff, 1976) largely focuses on constraints that exist in social structures. The allocation model aims at explaining attainment through the process by which social forces classify and assign individuals their place through social agencies. Both of these models make a valuable contribution to the analysis of status attainment, and can provide a useful framework for examining the formation of educational plans through psychological and social factors. The status attainment model is employed in this study with the inclusion of psychological (i.e. self-efficacy) and interpersonal (i.e. interaction with teachers, parental influence) factors, while the allocation model provides a framework for the examination of the mediating relationship between test scores, psychological factors, and educational plans in the model. If the relationship between test scores and educational plans is mediated by psychological factors, test scores may implicitly affect educational plans and other aspects of students' lives through the classification of individuals into differing groups of ability.

Researchers who have investigated the impact of various predictors on educational plans have differed in their use of the concepts aspirations, expectations, and plans as their measured outcome variable. Due to the ambiguity surrounding these concepts and the assumption that they are related, literature addressing

aspirations, expectations, and plans will be reviewed in the next section. The literature is reviewed in three sections: (a) demographics, (b) high school, and (c) academic self-efficacy.

Demographics

Examination of the literature indicates that demographic and academic characteristics of high school students have a much clearer impact on the educational plans of students than contextual factors, although they are closely intertwined. Socioeconomic status, race, gender, age, and parental influence are among the factors which have been found to have an effect on aspirations. Socioeconomic status has been found to be positively correlated with aspirations when all other characteristics are held constant (Sewell & Shah, 1968; Solorzano, 1992; Trusty, 1998). With regard to race, evidence suggests that the lack of achievement among disadvantaged cultural groups is not due to their lack of aspirations because research indicates that they actually have higher aspirations than their white counterparts (Carter, 1999; Solorzano, 1992). This effect could be due to cultural factors or their desire to move up the social ladder, often referred to as social mobility orientation (Boyle, 1966). Despite these high aspirations, if the educational expectations of these disadvantaged groups are lower than their white counterparts, there is a possibility that students continue to aspire to high levels of education but that their assessment of realistic opportunity and lower expectations contribute to lower educational plans and subsequent academic success. There is also evidence that gender is an important predictor of educational plans. Women have been found to have consistently higher educational aspirations than their male counterparts (Carter, 1999; Solorzano, 1992; Trusty, 1998). Examination of the trends in female students' plans for degree attainment have shown an increasing interest in post-baccalaureate degrees, and they have also been found to have higher plans to obtain a graduate or professional degree than their male counterparts (Astin, 1998). Finally, as with other aspects of student attitudes and achievement, parental encouragement (Kandel & Lesser, 1979; Sewell & Shah, 1968; Trusty, 2000) and parental involvement (Trusty, 1998) are factors which have also been found

to be highly correlated with college plans.

A number of student academic characteristics have been shown to be related to the educational plans of students, such as academic ability (Boyle, 1966; Hauser & Anderson, 1991; Sewell & Shah, 1968), academic rank (Nelson, 1972), and test scores (Hearn, 1991; Trusty, 2000). These findings are not surprising, considering the fact that students' aspirations are correlated with success.

High School

Although high school contextual factors (e.g., socioeconomic status of high school peers, aspirations of high school peers, aptitude of high school peers) have been found to have an impact on the educational plans of students, the evidence is unclear. Most of the literature on high school contextual factors is dated, going back to as early as the 1960s. The literature that does exist supports the notion that these factors have a very complex and contradictory influence, which could be seen as ultimately resulting in an unpredictable contribution. College preparatory curricula (Hauser, Sewell, & Alwin, 1976; Kandel & Lesser, 1979), higher academic standards (Boyle, 1966), peer groups who value education (Boyle, 1966), higher academic rank (Nelson, 1972), and higher school socioeconomic status (Kandel & Lesser, 1979; Nelson, 1972) have all been found to be significant contributors to higher educational plans. The impact of these factors, however, has been confounded by evidence of the 'frogpond effect,' in which researchers have found that although students' aspirations increase with an increase in the social status and average academic ability of their high school, they may also decrease under the same conditions as students compare themselves to other students of higher academic ability. Researchers have found that these contradictory influences may work to cancel each other out, and render the influence of the high school as negligible (Alwin & Otto, 1977; Meyer, 1970; Nelson, 1972). Nevertheless, they are definitely competing influences that complicate the estimation of high school effects on educational plans. These findings are dated, and it is possible that the dynamics of high school contextual factors have changed over time. This has not been investigated under current economic, political and societal

conditions. Perhaps, the most valuable contribution of these findings is that they underscore the importance of a student's perception of his or her ability in relation to the peers with whom they are compared.

Academic Self-efficacy

Work done on the effects of college entrance examinations has provided some evidence that low college entrance examination scores have negative psychological effects. In a study examining the effects of obtaining low college entrance examination scores on high achieving Mexican-American students, Gandura and Lopez (1998) found that students were twice as likely to express worry about taking another entrance examination if they scored lower on their college entrance examination, despite the fact that many of them reported that the scores were random or unimportant. They found that students internalized the results of their scores, and were more likely to report having lower academic ability, even after high school grades were controlled.

A factor that is closely related to academic ability and performance is students' academic self-perceptions. Self-efficacy has been noted as a factor contributing to college students' aspirations (Carter, 1999), has been noted as fostering academic achievement (Schabo Grabowski, Call, & Mortimer, 2001), has been pointed out as a potential indicator of educational plans, and has been suggested as a possible explanation of gaps between students' aspirations and expectations (Trusty, 2000). Weidman's (1987) model of undergraduate socialization in college focuses on how students reevaluate their position and change or maintain their aspirations, values, and goals, partially due to the influence of normative and interpersonal interaction factors. The literature indicates that students have been found to adjust their aspirations to the 'real world' as they progress through adolescence (Kerckhoff, 1976) because they adjust their aspirations based on their experiences and perceived future constraints. If this is true, it is possible that this reevaluation takes place consistently as students adjust their aspirations and expectations about the future, while moving through high school and on to college as a result of the

influence that their academic performance (i.e. grades, test scores, curricular track) has on their academic self-efficacy. There is a possibility that test scores, or potentially one test score (e.g. an ACT score), could negatively affect self-perceptions and social interactions between a student and peers, family, counselors, or teachers, and subsequently have a negative indirect impact on students' educational aspirations, expectations, and plans.

If students are consistently reevaluating their ability and their world in relation to the future, there is a need to understand the process by which different factors contribute to different patterns in how students formulate educational plans. Although there is some understanding of what factors contribute to the formation of different educational plans, there is a need for information regarding the process by which academic policies and practices directly, or indirectly via psychological factors such as academic self-perceptions, affect the educational plans of students. This paper focuses on the effect that academic input characteristics and psychological factors may have on the educational plans of first-year college students. More specifically, in what ways do college entrance examination scores affect academic self-efficacy and the educational plans of college freshmen? This study hopes to garner insight into the answer to this question and raise many more for further inquiry.

Methods

Conceptual Framework

Predictors were classified into three main groups to explain influences on students' plans. The framework for this analysis includes ascriptive variables, high school experience variables, and self-efficacy variables. High school contextual variables (e.g., high school socioeconomic status, aspirations of peer groups, academic aptitude of peer groups) were excluded from the framework due to the fact that there was no appropriate measure of high school context contained in the survey data that were analyzed.

The framework assumes that students' demographic characteristics and high school experiences, in part, shape

educational plans prior to students' first year in college. These variables also affect the self-efficacy of students and, in turn, potentially indirectly affect educational plans via the students' self-perceptions. The third pattern of influence in the framework is the direct impact of self-efficacy on the educational plans of the students at the time they enter college. The focus of this study is the pattern of influences involving the interaction between academic experiences, academic self-efficacy, and educational plans.

Sample and Population

This study used information from the national freshman survey from the Cooperative Institutional Research Program (CIRP). The survey is administered once every two years at institutions across the United States. The data used for this analysis was the result of a CIRP freshmen survey administered to all incoming first-year students at one large public research-intensive university, and was completed in the fall semester of 2003.

Missing values originally posed a problem in this fairly large sample, which consisted of 4,496 respondents, resulting in a total final sample size of 2,667. The nonrandom removal of cases, as a result of using listwise deletion, significantly reduced the sample size and could potentially bias the final sample. There were 461 students excluded from our analysis because they failed to report an ACT score when completing the survey, and another 499 were excluded due to the fact that they failed to report their parental income. This could be problematic because there is a good chance that self-selection was the cause of the choice to abstain from reporting that information. However, descriptive statistics indicated that the final usable sample was representative of the original population under investigation.

Given the population under investigation and the sample that was drawn from that population, the results should be interpreted with caution. It is difficult to apply the results to any populations outside of that institution. Therefore, generalizations to larger populations should not be made until the results are replicated with a larger and more representative sample of those populations.

Measures

Independent Variables. Seven measures of demographic characteristics were used in the first block of the model. The coding of the variables can be seen in Table 1. Gender, English as a native language, and eight categories of race/ethnicity were coded as dichotomous variables. The only race that was not coded as a dichotomous variable was White/Caucasian, which was used as the comparison group. Instead of using several factors to calculate a single measure of socioeconomic status, family income, mother's education, and father's education were all included separately so that the individual impact of each variable could be determined. Finally, parental influence was coded ordinally by level of influence parents had on students' college attendance.

[Insert Table 1]

The second block of predictors represented students' high school experiential characteristics, which included four measures. ACT composite scores, average high school grades, involvement in extracurricular activities, and interaction with teachers outside of the classroom were used as factors related to high school experience. Extracurricular activities and interaction with teachers outside of the classroom were the reported average number of hours spent on each activity per week during the last year of high school.

The final group of variables included the self-perceived academic ability and self-reported intellectual self-confidence of respondents. These indicators were used as proxies for academic self-efficacy because students' perceptions of and confidence in their ability were the best available indicators and they provided two good components of self-efficacy. Self-perceived academic ability was included to measure how the students perceived their own capability, in comparison to the rest of the students in the academic arena with which they identified. Intellectual self-confidence was included to measure what the students thought about their own attitudes toward their own intellectual ability. The students were asked to rate themselves on a one-to-five Likert-type scale, with options including "lowest 10%," "below average", "average", "above average", and "highest 10%". Self-efficacy variables

should be interpreted with caution, due to the fact that a population comparison is not specified, which means that the students could rate themselves using different groups for comparison. The main relationship of interest in the study was the role that these variables played in the conceptual model explaining educational plans.

Dependent Variable. The outcome used in this analysis was educational plans reported by first-year college students in response to the 2003 CIRP survey. Educational plans were measured using the highest degree-level that respondents planned to complete at any postsecondary institution. The original values of none, vocational degree, and associates degree were collapsed into the value less than a bachelor's degree, due to the extremely small number of students in these categories. Law, medical, and doctoral degrees were also collapsed into one professional category. The variable was ultimately coded with the lowest value being plans to obtain less than a bachelor's degree, and the highest value indicating plans to obtain a professional or doctoral degree. The middle two values consisted of plans to obtain a bachelor's degree, and plans to obtain a master's degree.

The model was tested and examined using a multivariate linear regression analysis. The predictors were entered into the model in three steps in order to estimate and compare the individual contribution of each group. The demographic variables were entered in the first block, high school experience variables were entered in the second block, and measures of self-efficacy were entered in the final block. This hierarchical regression procedure was used so effects of the three groups of variables could be compared. A secondary analysis tested the significance of self-efficacy measures as indirect mediating factors between college entrance examination scores and educational plans.

Results

The results of the complete regression model are shown in Table 2. High school experiential factors explained the largest variation in the model. Ascriptive characteristics were entered into the model as the first block of predictors. They explained 3.4 percent of the variation in the model. High school experiential factors were

then added and explained an additional 5.4 percent of variation in educational plans. The third block of variables contained the two measures of self-efficacy and explained an additional 1.4 percent of variation in the model. Perhaps the most interesting finding is that all three blocks, including self-efficacy alone, were statistically significant and produced statistically significant changes in the size of the effect. The final model produced an F-value of 14.56 and explained only 10 percent of the variation in educational plans. This low effect size deserves attention because several of the statistically significant predictors, demographic variables in particular, explained little variation in the model.

[Insert Table 2]

The individual regression results are displayed in Table 3. The beta-weights represent the standardized unit change in the predictor variable for every one standard deviation unit change in educational plans, while controlling for the other variables in the model. Examination of these beta-weights reveals the relative contribution of each variable, while controlling all other variables in the model. The beta-weights of primary concern were those associated with ACT scores and measures of academic self-efficacy.

[Insert Table 3 here]

In the final model, students' gender, father's education, mother's education, being black, being Asian, being of an "other" race, and parental influence were all statistically significant. The beta-weight for gender and being black were both statistically significant and positive at .001. Speaking English as a native language was statistically significant and negative at .001. ACT scores, extracurricular activities, and interaction with teachers were all significantly positive at .001, while the beta-weight associated with average high school grades was significantly positive at .01. These findings support the notion that actual academic ability, interaction with faculty, and involvement in extracurricular activities significantly affect students' educational plans. Both measures of academic self-efficacy were statistically significant. More specifically, according to the corresponding beta-weights, for every

one-standard deviation change in a student's self-rating of their own intellectual self-confidence, we can expect an approximate change of .10 standard deviations in their educational plans.

Mediating relationships

Evidence of the mediating relationship between ACT scores, self-efficacy, and educational plans, can be found in examination of the beta-weights associated with ACT scores. In the second step of the analysis, the beta-weight associated with ACT scores is .14. When measures of self-efficacy are added into the model and controlled, the associated beta-weight is reduced significantly, to .08. This indicates that much of the overall effect of ACT scores is in the form of indirect effects via self-efficacy.

To examine this relationship, two mediating relationships within the model were tested. The first test was to determine the significance of the indirect path between ACT scores, intellectual self-confidence, and educational plans. The second test was conducted to determine the significance of the indirect path between ACT scores, self-perceived academic ability, and educational plans. In order for a mediating relationship to be significant, all three variables in each model must be correlated with each other, and the $A \rightarrow B \rightarrow C$ path must yield a significant t-value (Howell, 2001).

All of the correlations, represented in the first and the second relationship were significant. The path between ACT scores, intellectual self-confidence and educational plans produced a t-value of 6.5, and was statistically significant using a critical p-value of .05. The path between ACT scores, academic ability, and educational plans produced a t-value of 3.3, and was also significant. These findings indicate that there is a significant mediating relationship caused by self-perceived academic ability and intellectual self-confidence and that the effect ACT scores have on self-efficacy measures significantly affects the educational plans of freshmen. As a result, we can be fairly confident that having lower ACT scores is likely to lead to lower perceptions about one's academic ability and intellectual self-confidence and, in turn, lower educational plans.

Limitations

There were a few important limitations of the data from the CIRP survey and the methods employed. The CIRP freshmen survey consists of approximately forty variables and focuses on the characteristics that the students bring with them when they enter their first year in college. Indicators of high school context, parental involvement, and parental encouragement could not be sufficiently added to the model because adequate measures of those variables were not included in the survey. Given prior evidence that these factors do have substantial influence on educational plans, it is clear that failure to include them in the model is a significant limitation.

The second important limitation of this study stems from the fact that the sample used for the analysis was a single institution sample and cannot be generalized to any larger population. This study was meant to be an exploration into the possible relationship between test scores, self-efficacy, and educational plans. Further study should attempt to replicate the results using a more comprehensive model and a larger nationally representative population so that inferences can be made on a broader scale.

The final major limitation of this study has to do with the results obtained here. The explained variation for the complete model used in this analysis was 10 percent. This appears to be low in comparison to earlier studies but could be at least partially due to the constraints in the instrument and the selection of variables used. The variables chosen to be included in the model were limited by the availability of measures included in the survey instrument utilized. Using a linear regression model, Carter (1999) examined the degree expectations of students in college with the inclusion of several predictors, including institutional characteristics of the college students attended, and explained .46 of the variation in expectations. Trusty's (2000) model explained 17.6 percent of variation in educational expectations for females and 24.1 percent for males, including several predictors such as help-seeking activity, parents' expectations, self-efficacy, and behavior. It appears that in previous analyses, different statistical techniques and more inclusive models were used. The limitation of variables and the design of this study could account for the low amount of variation in the model.

Discussion

The results of this study provide support for findings from past research with regard to demographics, although most of the significant demographic predictors explained a variation so low that their interpretability is questionable. A few were considered to be salient and deserve some attention. The results of this analysis are consistent with Trusty's (1998) finding that being female had a modest positive impact on educational expectations, and with Astin's (1998) observation of an increase in the degree plans of female students. Consistent with the findings of Carter (1999), that African-American students have slightly higher degree expectations than their white counterparts, the results of this analysis show some support of Solorzano's (1992) findings that any lack of success by underrepresented students is not a result of low educational aspirations, at least in the case of African-American students.

There is also support for earlier findings of the importance of socioeconomic status in the prediction of educational plans, although the impact found here is relatively and surprisingly low. The findings of this research are inconsistent with Sewell and Shah's (1968) conclusion that socioeconomic factors had, in some cases, a stronger effect than academic intelligence characteristics, and are consistent with Alwin and Otto's (1977) findings that the effect of socioeconomic status was smaller than previous studies had indicated. The relationship is complex, however, and examination of the correlation and partial correlation show that much of the effect of socioeconomic factors could be indirect as Hanson (1994) has suggested. Nevertheless, academic factors played a larger role in the prediction of educational plans, than did socioeconomic status.

Test scores, self-efficacy, and educational plans

These findings provide some support for the positive correlation that Trusty (2000) found between self-efficacy and expectations. It is clear that the data indicate that students with higher levels of academic self-efficacy are more likely to plan to attain a higher degree. Although it is beyond the scope of this paper, it should be pointed out that Carter (1999) found the effects of intellectual self-confidence to differ over time, for students of different racial,

or ethnic, backgrounds. This could mean that these dynamics are different across subgroups, and could be an indication that some subgroups of students are more susceptible to the influence of academic self-perceptions, or intellectual self-confidence. These differences could be examined in the future by running parallel analyses of different subgroups of students.

In what ways do college entrance examination scores impact the academic self-efficacy and the educational plans of college freshmen? These findings support data reported by Gandura and Lopez (1998) that indicate students internalize the scores they receive on college entrance examinations. The results show that students who score lower on college entrance examinations are more likely to have lower academic self-efficacy, and are consequently more likely to have lower educational plans.

Implications for Future Research

The findings of this analysis have important implications for both research and policy. It is important for research in this area to go beyond the focus of past exploration of demographic and high school factors and into the psychological aspects of students' educational planning. Very little is known about how these factors influence the decisions students make, or what predictors indirectly affect students' decisions via psychological factors such as self-efficacy. If the nature in which current policies and practices affect the educational plans of students through academic self-efficacy or other mediating psychological factors can be better understood, it could contribute to better decision-making regarding how access to higher education can be improved, and how those students who are underrepresented can be encouraged to, or discouraged from, furthering their education.

Although the methods employed in this study had many limitations, the results raise many questions for further study. Further analyses could be conducted with larger representative samples so that these findings can be generalized to the larger national student population. Also, different methods, such as structural equation modeling and longitudinal quasi-experimental designs could be employed so that direct and indirect impacts on educational

plans can be more confidently attributed to a particular point in time or event, such as the taking of college entrance examinations.

In addition to exploring the nature of the factors that affect students' decision-making processes and educational plans, there is a need to determine how these effects work for different subgroups of students. It is clear that students coming from different cultural backgrounds can be affected by policies in different ways. If policymakers are to be concerned with increasing the likelihood that particular underrepresented students will apply to college and pursue higher levels of education, there should be a better understanding of how different experiences influence the decision-making processes of students, and how those effects are different across subgroups. If these college entrance examinations affect the self-efficacy and future plans of particular students, it is prudent for us to examine how these factors contribute, not only to access to particular institutions, but also to the suppression of those students' academic motivation and success.

Policy Implications

High school curriculum that includes skills useful in standardized test preparation could contribute to higher self-efficacy and higher educational plans. High schools are challenged with the task of preparing their students to acquire the skills to attend as well as perform successfully in institutions of higher education. The effects of preparing students for college entrance examinations could very well extend far beyond the high school admissions process, and into the postsecondary years.

The ongoing debate about the use of ACT and SAT scores in the college admissions process has been confounded by debates over evidence that standardized tests may be systematically biased against minority, female, and economically disadvantaged students. If current college entrance examinations are inadequate measures of students' ability to do well in college, and if they do maintain some systematic and systemic bias against particular subgroups of students, these tests may be differentially and unjustly affecting the self-efficacy and educational plans of students. If further inquiry indicates that this is true, it may warrant consideration of alternative forms of assessing a student's ability to succeed.

References

- Alwin, D. F., & Otto, L. B. (1977). High school context effects on aspirations. *Sociology of Education*, 50, 259-273.
- Astin, A. (1998). The changing American college student: Thirty-year trends, 1966-1996. *The Review of Higher Education*, 21(2), 115-135.
- Astin, A., & Panos, R. (1969). *The educational and vocational development of college students*. Washington D.C.: American Council on Education.
- Blau, P. M., & Duncan, O. D. (1967). *The American occupational structure*. New York: Wiley.
- Boyle, R. P. (1966). The effect of high school on students' aspirations. *The American Journal of Sociology*, 71(6), 628-639.
- Carter, D. F. (1999). *The impact of institutional choice and environments on African American and white students' degree expectations*, 40(1), 17-41.
- Gandura, P., & Lopez, E. (1998). Latino students and college entrance exams: how much do they really matter? *Hispanic Journal of Behavioral Sciences*, 20(1), 17-38.
- Hanson, S. L. (1994). Lost talent: Unrealized educational aspirations and expectations among U.S. youths. *Sociology of Education*, 67(3), 159-183.
- Hauser, R. M., & Anderson, D. K. (1991). Post-high school plans and aspirations of black and white high school seniors: 1976-86. *Sociology of Education*, 64(4), 263-277.
- Hauser, R. M., Sewell, W. H., & Alwin, D. F. (1976). High school effects on achievement. In W. H. Sewell, R. M. Hauser, & D. L. Featherman (Eds), *Schooling and Achievement in American Society*. New York: Academic Press.
- Hearn, J. C. (1991). Academic and nonacademic influences on the college destinations of 1980 high school graduates. *Sociology of Education*, 64(3), 158-171.
- Howell, D. C. (2001). *Statistical methods for psychology* (5th ed.). Pacific Grove, CA: Duxbury.

- Kandel, D., & Lesser, G. S. (1979). School, family, and peer influences on educational plans of adolescents in the United States and Denmark. *Sociology of Education*, 43(3), 270-287.
- Kerckhoff, A. C. (1976). The status attainment process: Socialization or allocation? *Social Forces*, 55(2), 367-381.
- Meyer, J. W. (1970). High school effects on college intentions. *The American Journal of Sociology*, 76(1), 59-70.
- Nelson, J. I. (1972). High school context and college plans: The impact of social structure on aspirations. *American Sociological Review*, 37(2), 143-148.
- Pascarella, E. T. (1984). College environmental influences on students' educational aspirations. *The Journal of Higher Education*, 55(6), 751-771.
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students*. San Francisco: Jossey-Bass Publishers.
- Rottinghaus, P. J., Lindley, L. D., Green, M. A., & Borgen, F. H. (2002). Educational aspirations: The contribution of personality, self-efficacy, and interests. *Journal of Vocational Behavior* 61(1), 1-19.
- Schabo Grabowski, L. J., Call, K. T., & Mortimer, J. T. (2001). Global and economic self-efficacy in the educational attainment process. *Social Psychology Quarterly*, 64(2), 164-179.
- Sewell, W. H., & Shah, V. P. (1968). Social class, parental encouragement, and educational aspirations. *The American Journal of Sociology*, 73(5), 559-572.
- Shilkret, R., & Nigrosh, E. (1997). Assessing students' plans for college. *Journal of Counseling Psychology*, 44(2), 222-231.
- Solorzano, D. G. (1992). An exploratory analysis of the effects of race, class, and gender on student and parent mobility aspirations. *The Journal of Negro Education*, 61(1), 30-44.
- Thistlewhite, D. (1959). *College environments and the development of talent*. *Science* (130), 71-76.
- Thistlewhite, D., & Wheeler, N. (1966). Effects of teacher and peer subcultures on student aspirations. *Journal of Educational Psychology*, (57), 35-47.

- Trusty, J. (1998). Family influences on educational expectations of late adolescents. *The Journal of Educational Research*, 91(5), 260-270.
- Trusty, J. (2000). High educational expectations and low achievement: Stability of educational goals across adolescence. *The Journal of Educational Research*, 93(6), 356.
- Weidman, J. C. (1987, Nov). Undergraduate socialization. Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Baltimore, MD.

Table 1
Variable definitions and alpha codes

Variables	Description and Coding
Ascriptive/Demographic characteristics	
1. Gender	Coded: 0 = male, 1 = female.
2. Native language	Whether, or not, English is the respondent's native language. Coded: 0 = no, 1 = yes.
3. Race/ethnicity	The category included nine different ethnicities, eight of which were coded: 0 = no, 1 = yes. "White" was used as the constant. The other ethnicities included in the sample were (1) black/African-American, (2) Native American/Alaskan, (3) Asian, Asian-American, (4) Hawaiian/Pacific, (5) Mexican American/Chicano, (6) Puerto Rican, (7) Other Latino (8) Other
4. Income	Total annual parental income Coded: 0 = less than \$10,000, 1 = \$10,000-14,999, 2 = \$15,000-19,999, 3 = \$20,000-24,999, 4 = \$25,000-29,999, 5 = \$30,000-39,999, 6 = \$40,000-49,999, 7 = \$50,000-59,999, 8 = \$60,000-74,999, 9 = \$75,000-99,999, 10 = \$100,000-149,000, 11 = \$150,000-199,999, 12 = \$200,000-249,000, 13 = \$250,000 or more.
5. Father's education	The highest level of education attained by the father of the student. Coded: 0 = less than a high school diploma, 1 = high school diploma, 2 = some college, 3 = college graduate, 4 = graduate degree.
6. Mother's education	The highest level of education attained by the mother of the student. Coded: 0 = less than a high school diploma, 1 = high school diploma, 2 = some college, 3 = college graduate, 4 = graduate degree.
7. Parental Influence	The important of parental influence on student's choice to attend college. Coded: 0 = not important, 1 = somewhat important, 2 = very important,

High school factors	
8. ACT score	The reported composite ACT score, ranging from 15-36.
9. Average high school grade	Reported average grade received in high school. Coded: 0 = C+ or less, 1 = B-, 2 = B, 3 = B+, 4 = A-, 5 = A or A+.
10. Extracurricular involvement	Hours spent per-week participating in extracurricular activities, during the last year of high school. Coded: 0 = none, 1 = less than 1, 2 = 1-2, 3 = 3-5, 4 = 6-10, 5 = 11-15, 6 = 16-20, 7 = over 20.
11. Interaction with teachers	Hours spent interacting with teachers outside of the classroom. Coded: 0 = none, 1 = less than 1, 2 = 1-2, 3 = 3-5, 4 = 6-10, 5 = 11-15, 6 = 16-20, 7 = over 20.
Academic self-efficacy	
12. Academic ability	Self-reported academic ability. Coded: 0 = lowest 10%, 1 = below average, 2 = average, 3 = above average, 4 = highest 10%.
13. Intellectual self-confidence	Self-reported intellectual self-confidence. Coded: 0 = lowest 10%, 1 = below average, 2 = average, 3 = above average, 4 = highest 10%.
Dependent variable	
14. Educational Plans	The highest degree that the student plans to obtain at any postsecondary institution. Coded: 0 = less than a bachelor's degree, 1 = bachelor's degree, 2 = master's degree, 3 = professional degree or doctorate.

Table 2
 Complete Model regression results.
 Dependent variable: Highest degree-level planned.

Variable	r	Beta-Weights		
		Model 1	Model 2	Model 3
Ascriptive characteristics				
1. Female	.04*	.05**	.04*	.07***
2. English	-.05**	-.07**	-.09***	-.08***
3. Income	.06*	.04*	.04	.03
4. Father's education	.11***	.07**	.05*	.05*
5. Mother's education	.10***	.07***	.04	.05*
6. Parental Influence	-.04*	-.06**	-.05*	-.04*
7. Race/Ethnicity				
Black	.03	.03	.08***	.06***
Native American	.03	.04	.04*	.04
Asian	.04	.04	.05*	.06*
Hawaiian/Pacific	-.03	-.03	-.03	-.03
Mexican	-.02	.02	.03	.02
Puerto Rican	-.02	-.02	-.02	-.02
Other Latino	-.01	-.03	-.02	-.02
Other races	.05*	.05**	.06*	.05**
High school experiences				
8. ACT scores	.16***	--	.15***	.10***
9. Average grade	.15***	--	.10***	.06**
10. Extracurricular	.13***	--	.07***	.06***
11. Interaction w/teachers	.12***	--	.10***	.09***
Self-efficacy				
14. Self-confidence	.17***	--	--	.10***
15. Academic ability	.17***	--	--	.07**
<u>Model R-squared</u>	--	.03	.09	.10

p < .05 *

p < .01**

p < .001***

The variable "White" was not included in the table because it was used as the constant. Correlation coefficients reported are from the final model.

Table 3
Complete Model Regression Results

Model	F	r^2	r^2 -change
Block 1	6.97	.031	---
Block 2	15.30***	.085	.054***
Block3	14.56***	.099	.015***

p < .05 *

p < .01**

p < .001***

Model 1 is the standardized beta coefficients with background characteristics controlled for. Model 2 is the standardized beta coefficients with background characteristics and high school experiences controlled for. Model 3 is the standardized beta coefficients with background characteristics, high school experiences, and self efficacy controlled for.