The Role of High School Experiences and Influences in the Development of Psycho-Social Well-Being[1]

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I.   Introduction

Self-esteem and self-efficacy are two components of psycho-social well-being that are important for the seeking and attainment of opportunities in society and that impact physical and economic well-being. These relationships may exist as a result of the impact esteem and efficacy have on educational outcomes (Bandura 1977, 1982; Rosenberg, 1965; Rutter, 1987), with higher rates positively impacting educational attainment. In young adults, esteem and efficacy are significant in a wide variety of academic contexts, for both high school (Bradley and Corwyn 2001) and college populations (Luzzo et al. 1999), for many different academic outcomes, including GPA and choice of major (Bates and Khasawneh 2004; Phillips and Gully 1997; Po Yin and Watkins 1998), and across many different population groups, including minority racial/ethnic groups and those with educational special needs (Caldwell and Siwatu 2003; Hampton and Mason 2002; Zeldin and Pajares 2000).

Self-esteem and self-efficacy also aid in the development of "resilience" in at-risk youth (Arrington and Wilson 2000; Dumont and Provost 1999; Olsson et al 2002). The ability of some individuals to overcome harmful life circumstances and thrive has been investigated for decades (Spencer 1986; Bennett, et al. 1998). Studies of urban African American (Cunningham et al. 2002; Winfield 1991; Zimmerman, Ramirez-Valles, and Maton 1999) and Latino (Chin and Kameoka 2002) youth have found that esteem and efficacy can mitigate negative environmental and experiential occurrences that so often lead to poor behavioral and academic outcomes.

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The value of esteem and efficacy extends beyond educational outcomes, as they also influence health-related behaviors (Steptoe and Wardle 2001; Turner 1999) and have a long-term impact on oral communication and civic participation (Verba and Nie 1972; Verba, Schlozman, and Brady 1995), job satisfaction, job performance, and labor market earnings (Bowles and Gintis 1974; Bowles, Gintis, and Osborne, 2001; Judge and Bono, 2001). That their development *in high school* has long-term impacts has been demonstrated by Jencks and colleagues (1972), who found that those with higher rates of esteem and efficacy have more favorable occupational and earnings achievement years later.

Part of the life-long benefits derived from esteem and efficacy are likely attributable to the impact they have on college-going and success in college. Massey and colleagues (2003) found that the extent to which students have positive experiences in high school has important implications for their self-esteem and plans to pursue postsecondary education. Once in higher education settings, self-esteem and self-efficacy are predictors of adjustment to college, including academic, social, and personal-emotional adjustment, and institutional attachment (Bettencourt et al. 1999; Friedlander, et al. 2007; Hickman, Bartholomae, & McKenry 2000; Mooney 1991). Given their importance to numerous quality of life factors for young adults, the role of experiences during the high school years in developing the esteem and efficacy of young people merits further consideration. What can schools and families do to promote the development of esteem and efficacy in young people?

A mainstay of educational theory has been that schools and teachers impact students' social and psychological orientations, in addition to their cognitive abilities. The assertion that schools reward personality traits such as discipline, subordinancy, and hard work as a means of social control was first put forward by Bowles and Gintis (1974) (see also Swartz 2003 and Farkas 2003). Furthermore, teacher encouragement is among the "verbal and social persuasions" Bandura (1977) theorizes to have a direct impact on students' self-efficacy. Questions remain, however, as to which school characteristics impact which non-cognitive traits. Some have found the psychological impact of teacher perceptions and expectations to affect learning for African American students (Jussim, Eccles, and Madon 1996; Casteel 1997), while others accurately point out that weak measurement of both academic and psychological factors cloud our knowledge of many of the underlying relationships (see, for example, Usher and Pajares 2008).

This study seeks to better identify the educational factors that play a direct role in students' psycho-social well-being. The experiences and influences of high school students originate both in families and through schooling. We distinguish between these two sources of influence in order to determine the extent to which schools and

teachers might impact esteem and efficacy. We address the following key questions: How is the psycho-social well-being of high school students related to familial and educational influences and experiences? And do these relationships vary by racial/ethnic subgroups?

II.   Literature

Self-esteem refers to one's sense of self-worth and whether one has a favorable attitude about oneself (Rosenberg 1965). Self-efficacy refers to one's self-perception of his/her likelihood of success for a given task or behavior (Bandura 1977). Self-esteem and self-efficacy have been theoretically and operationally defined in both global and domain-specific terms. In a global sense they refer to one's overall evaluations about oneself. Global self-efficacy has also been referred to as having an "internal locus of control" (Rotter 1966).   The domain-specific concepts tap into how confident or positive one feels about his or her abilities in an educational setting, for example. Research has found that academic-specific esteem and efficacy are more strongly related to academic outcomes (Zeldin and Pajares 2000; Usher and Pajares 2008); however, the global measures are still often found to be significant when domain-specific measures are unavailable (Friedlander et al 2007).

Theories of social and cultural capital (Coleman 1988; Bourdieu and Passeron 1977; Lamont and Lareau 1988) have been useful for articulating how family and schooling may function to promote or develop personal characteristics such as esteem and efficacy: it may be the social networks or cultural competencies from school and home that lead to positive psycho-social outcomes. Coleman (1988) defines social capital as the obligations and expectations, information flow, and norms accompanied by sanctions that make possible the achievement of certain ends. Cultural capital theory (Bourdieu and Passeron 1977) asserts that value systems about class and culture are transmitted to children at home and in other social settings. Bourdieu and Passeron theorize that schools also operate within and transmit a value system which privileges "high" cultural aesthetics, experiences and personal orientations.

Recent research has found that social and cultural capital, including information channels, networks, value systems, social norms, and cues about social class are related to the decisions to attend and when to attend college, and have been found to vary by racial/ethnic groups (Bohon et al. 2006, Perna 2000, Perna and Titus 2005, Rowan-Kenyon 2007). In addition, school-related social capital, such as involvement of parents and friends in school-related or college preparation activities has been shown to significantly improve college attendance rates for at-risk high school students (Horn and Xianglei 1998). However, the mechanisms through which social

and cultural capital operates are unclear. Do these outcomes result because social and cultural capital impacts the esteem and efficacy of young people?

Some have suggested that social connections help provide the psycho-social resources needed for success in college (Robbins 2004, Le et al. 2005). Thus, if students gain a positive feeling of success and encouragement from parents and school personnel at their high school, they may develop a positive attitude towards education and be more likely to pursue postsecondary education. Additional evidence in support of this hypothesis is found in a small study of high-achieving African American students who reported that parental influences had an impact on internal "motivation to succeed" (Griffin 2006). Given the debates about the extent to which cultural capital theory is applicable to school contexts in the U.S. (Kingston 2001), this study invokes social and cultural capital frameworks only to suggest an alternative theoretical structure for thinking about school and home influences on psycho-social well-being.

Previous research has explored differences by race/ethnicity with regard to the psycho-social characteristics of students and the potential impact of school-related influences on esteem, efficacy and educational achievement (see Kao and Thompson, 2003, for a review). Recent ethnographic research on the educational achievement of Latino and Mexican-American youth has focused on school climate. In an in-depth case study of Latinos in a high school in the western U.S., Conchas (2001) found that institutional supports can have an important impact on Latino students' engagement and success in school. According to Valenzuela's (1999) study of Mexican-American students in a Houston high school, teachers' and administrators' relationships matter a great deal to students' development of a positive attitude towards education and their school. The schools' lack of recognition of basic cultural understandings had a negative impact on students' attitudes, engagement, and ultimately their educational aspirations. Finally, in their examination of students attending elite institutions, Massey et al. (2003) found higher levels of self-esteem present amongst Latino and African American students vis à vis their white and Asian-American counterparts.

The extant research, while providing guidance about the types of relationships that exist between psycho-social characteristics and educational outcomes, has lacked an ability to simultaneously examine both familial and educational influences on esteem or efficacy in order to determine where opportunities might exist to nurture and promote their development. Nor have many studies had robust samples of different racial and ethnic subgroups, as this one does, in order to explore the circumstances under which such differences may matter for psycho-social development in schools. Research also indicates that gender plays a separate role in self-esteem development [**need cite**], and the sample size of this dataset enables a

separate control by gender for the analysis. This study addresses these prior deficiencies in order to enhance the understanding of these concepts by educational researchers and practitioners.

III.   Model and Hypotheses

The left side of Model A displays the theoretical relationships we are testing.

Model A
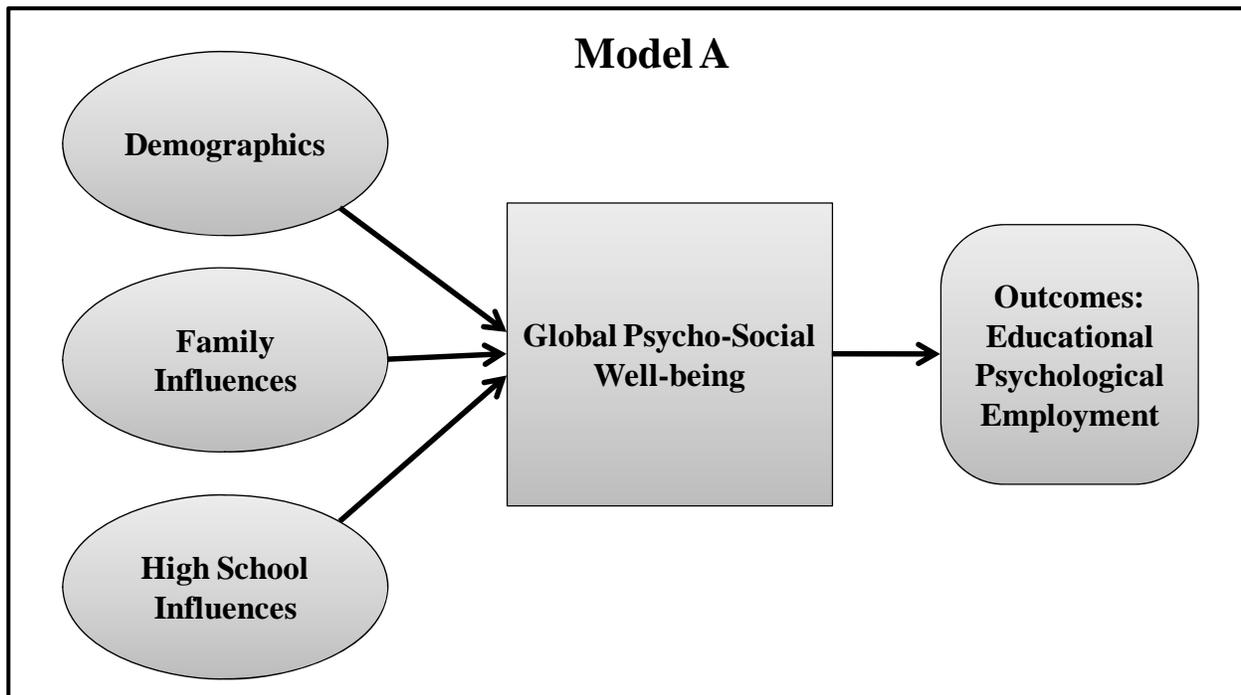
Psycho-social well-being, which is operationalized with measures of both esteem and efficacy, mediates the impact of demographics, family influences, and high school experiences on a variety of lifelong outcomes. This study examines the relationships on the left side of the model and tests the unique contributions of family and high school while controlling for demographics, to determine where interventions might best be targeted to improve psycho-social well-being among high school students.

We expect to find that after controlling for parental and familial influences and demographics, teachers and school contexts impact the esteem and efficacy of high school youth. Further, we expect that gender and race/ethnicity are important for the development of global psycho-social well-being.

This study contributes to both educational policy and theory. It offers practitioners and high school policy-makers concerned about college-going and life-long educational attainment examples of the types of high school experiences that

promote esteem and efficacy. Theoretically, this study advances the knowledge base of educational scholars by disentangling family and school influences on psycho-social well-being and by offering some insight into when racial and gender sub-groups may merit a further disaggregated investigation of these relationships.

IV. Methods

Dataset: This study uses the Texas Higher Education Opportunity Project baseline survey data for high school seniors, conducted in spring 2002, and a follow-up survey conducted one year later. Initially, THEOP used a stratified sampling of all Texas public high schools to select 108 schools, with 93 percent participating in the survey. This yielded a total sample of 13,803 students, of whom only 5,268 were white. In 2003, 5,836 (42%) of those students were re-interviewed to collect wave-2 of the data. A total of 4,065 students were enrolled in college, with the majority of others in technical schools, working or in the military. Approximately 49% of respondents at Wave-2 were white, 10% African American or Black, and 28% were Mexican, Mexican-American, or Chicano. The sample sizes and racial diversity of the dataset enables controlling for gender and race/ethnicity for the following analyses.

Sample Selection: For these analyses the original Wave-1 data sample N = 13,803 was restricted to a subset of respondents based on dual criteria. The first restriction was to restrict the sample to students who are considered "college bound," that is, students who expect to, plan to, desire to, or have thought about attending college. Since the vast majority of the sample can be considered college-bound, we excluded those who have no goal of pursuing education beyond high school under the assumption that these students may have unmeasured differences in their attitudes about and identification with academic life and the high school experience. This restricts the sample to a subset of N = 12,261 students, which is used as a baseline data set in order to address the missing data within the sample.

Data in the THEOP dataset violates the Missing at Random (MAR) principle (Allison, 2002; see Domina et al, 2008 for an example of this violation); therefore cases with missing values cannot be deleted since deletion could induce significant parameter estimate bias. Furthermore, the large amount of missing data on some variables (ie. SAT scores) would severely reduce the number of cases available for analysis and the value of the dataset if listwise deletion was performed. However, the richness and diversity of variables available in the THEOP dataset allow for the use of sophisticated techniques for inferring the effects of the missing values with a good deal of confidence. In this analysis, the technique of multiple imputation was used to substitute for missing values among the students with missing data.

After imputation, the dataset was further restricted to students who responded to the Wave-2 questionnaire (excluding the 64 students who responded by military proxy) because non-respondents to Wave-2 had no data for the dependent variables, and because non-response to Wave-2 is correlated with student performance (Domina et al, 2008), meaning the mechanism of missing data is not ignorable (Allison, 2002). Since the W-2 variables are missing for an entire group of students that share some undefined but non-ignorable characteristics, these missing values cannot be imputed with a great deal of confidence. Therefore, the students missing W-2 data are dropped from the analysis, resulting in a final sample size of N=5302 (see Table 1).

Table 1 :
Sample Exclusions based on Responsiveness and College Intentions

	W-2 Responsive	**W-2 Non-Responsive**
College bound	N=5302* [t]	N=6959*
Non-college bound	N=470	N=1072

Included in imputation
[t]*Included in final data sample*

Weighting: A two-component weighting system is used for THEOP data (see THEOP Baseline Survey Methodology Report, 2003). The first component is a sampling weight representing the probability of selection and/or sub-selection within the school. The second component is a post-stratification adjustment that modifies enrollment figures to match populations published by the Texas Education Agency. These weights allow us to correctly represent the distributions of Texas public schools and to draw conclusions about the population as a whole.

Imputation: Multiple Imputation (MI) is a process to estimate missing data using a method where missing values are obtained by a combination of predictive modeling and drawing over a posterior distribution (Schafer, 1997). MI has several advantages over other methods for dealing with missing data. Along with methods such as maximum likelihood, MI allows values to be retained from the cases with missing data and can mitigate the estimation bias that comes from listwise deletion of data. MI is more flexible than other approaches to missing data, can be used with many types of data and models, and can be done on conventional software, while still producing estimates that are consistent and efficient (Allison, 2002). Table 2 displays the percent of missing data for each variable used in the analysis.

Table 2 : Missing Data by Predictor Variable (N = 5302)

Variable Description	Obs	% Missing
Taking Highest Math Class Available at School	5302	0.0%
Metropolitan School	5302	0.0%
High Minority School	5302	0.0%
Counselor Encouragement of College	5266	0.7%
Teacher Encouragement of College	5263	0.7%
Peer Plans About College	5253	0.9%
Parent Encouragement Of College Attendance	5244	1.1%
Taking Only Low Level Math Class	5241	1.2%
Belief in the Value of Education	5241	1.2%
Semester GPA in Core Classes	5238	1.2%
Parent Involvement in School	5202	1.9%
Class Engagement	5176	2.4%
Perceived School Support	5096	3.9%
Immigrant	5078	4.2%
Female	5039	5.0%
African American	5035	5.0%
Mexican American / Latino	5035	5.0%
Asian	5035	5.0%
Other Race	5035	5.0%
Taken an AP Class	4963	6.4%
Sibling Dropped Out of HS	4941	6.8%
Always Wanted to Attend College	4938	6.9%
Parents Own Their Home	4784	9.8%
Would Be First Generation College Student	4674	11.8%
SAT Score	2164	59.2%
# of AP Courses Offered by High School	2060	61.1%

Using the variables that will be employed in subsequent modeling, we defined an imputation model to generate predictions of missing variables. The imputation was conducted using the ICE method in STATA, which utilizes the Multivariate Imputation by Chained Equations (MICE) approach (Van Buuren & Oudshoorn, 1999) to multiple imputation. Five imputed values are produced for each missing value, in order to increase the efficiency of each predictor (Schafer, 1997), and explicitly account for the uncertainty that comes from non-response.

Students who were non-respondents of Wave-2 were included in the imputation process under the assumption that non-response in a post-secondary survey did not correspond to a distinct difference in Wave-1 characteristics (used as predictor variables) from respondents. However, Wave-2 non-response cannot be dismissed as a factor in the predicted variables (global psycho-social well-being, self-esteem, and

self-efficacy) and therefore the Wave-2 non-respondents were dropped after the imputation process.

Linear regression models were used to predict the outcome measures and the estimates across the imputations were averaged according to Rubin's Rules of Combination (Rubin, 1987).

Dependent Variables: A total of nine queries about self-esteem and self-efficacy are combined into a measure of global psycho-social well-being (see Table 3). These queries include 6 of the 10 items in Rosenberg's Self Esteem Scale (Rosenberg, 1965), and 3 items measuring global self-efficacy or locus of control (Lefcourt 1982; Rotter 1966). Rosenberg's Self-Esteem Scale is a brief and unidimensional measure of global self-esteem, with questions related to overall feelings of self-worth or self-acceptance. The items are answered on a four-point scale, ranging from strongly agree to strongly disagree. Questions that indicated negative measures of self-esteem (eg. "I feel useless at times") were recoded so that in all cases higher values correspond with positive feelings of self-esteem. The Rosenberg Self-Esteem Scale has demonstrated good reliability and validity across a large number of different sample groups. The scale has been validated for use with both male and female adolescent, adult and elderly populations.

The concept of a locus of control was developed to describe differences in how much one believes one's actions versus outside influences control one's life (Rotter 1966). Those with an internal locus of control perceive their own behavior, skill, or efforts will determine events in one's life, whereas those with an external locus of control consider fate, chance, or luck to be more determinative of one's future. Three questions about locus of control were asked using a four-point scale, ranging from strongly agree to strongly disagree. Questions that indicated external measures of locus of control (eg. "I don't have enough control over the direction my life is taking") were recoded so that all higher values correspond with a higher internal locus of control.

Because neither the entire esteem nor efficacy scale was included in the survey, the nine measures are aggregated into a general measure of global psycho-social well-being, (alpha inter-item coefficient = .65). They are also indexed into two separate dependent variables, self-esteem (alpha inter-item coefficient = .74) and self-efficacy (alpha inter-item coefficient = .47), for exploratory purposes to begin to identify how esteem and efficacy might be related differently to familial and educational influences. Moller et al. (2009) found distinctions between esteem and efficacy self-concept measures in their meta-analysis of 69 prior studies.

Table 3: Dependent Variables

Variable	Mean	Alpha
Self Esteem	**3.22**	**0.74**
I feel good about myself	3.46	
I am able to do things as well as most other people	3.30	
On the whole, I am satisfied with myself	3.24	
I feel useless at times (*)	2.89	
I feel I do not have much to be proud of (*)	3.19	
I feel I am a person of worth, the equal of other people	3.24	
Self Efficacy	**3.08**	**0.47**
I don't have enough control over the direction my life is taking (*)	3.11	
In my life, good luck is more important than hard work for success (*)	3.18	
Every time I try to get ahead, something or somebody stops me (*)	2.94	
Global Psycho-Social Well-Being (combination of all 9 indicators)	**2.94**	**0.65**

(*) indicates measures are reverse coded

Independent Variables: The independent variables are summarized in Table 4. Demographic variables include gender, race, immigrant status, and a proxy for socio-economic status: whether parents own their home. Parent/family factors include measures for whether the student would be of the first generation from his/her family to attend college, parents' encouragement to attend college, parents' involvement with their students' education, and having a sibling who dropped out of high school. High school factors included measures for its demographic profile, the curricular and academic aspects of the high school, and its social aspects.

Interaction Variables: A set of five interaction variables are also included in the models in an effort to examine how certain combinations of family, school, and demographic characteristics might play out to influence psycho-social well-being for specific subgroups of students. Our intention here is to focus on student groups within specific classroom and school settings. Given recent federal efforts and national discussions about the need to improve performance in math and science disciplines, we examine separately male and female students in high math classes. We also examine the impact of always wanting to go to college to determine if instilling this desire at a very early age works to mediate other negative relationships with psycho-social well-being. High minority schools are also examined in combination with the first generation college going variable in order to explore whether such schools might offer a boost to the psycho-social resources that would be needed for college attendance. These interaction variables are multiplicative combinations of the separate variables and are listed at the bottom of Table 4.

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Table 4: Independent Variables

Demographics	
Gender	Binary, 1 = male (Q55)
Race	Race indicated: White, African American , Mexican American / Latino, Asian, Other (Q56)
Immigrant Status	Binary, 1 = born outside of the U.S. (Q57)
Parents own home	Binary, 1 = Parents own home (Q60)

Student/Parent/Family Factors	
First generation college students	Binary, 1 = Neither parent attended college (Q49, Q51)
Parent involvement	0-7 Additive scalar variable indicating parents' involvement in educational issues such as: Giving or limiting privileges based on grades, motivating to improve bad grades, reminding or helping with homework, knowing when student is in trouble, and talking about school problems (Q30a-Q30e)
Parent encouragement of college	Binary, 1 = parents encouraged college and discouraged other options (Q29a)
Sibling dropped out of high school	Binary, 1 = at least one sibling left high school before graduating (Q66)
Student always wanted to go to college	Binary, 1 = student has always wanted to go to college (Q45)
Student belief in the value of education	1-4 Scalar variable indicating students agreement with the following statements: Most school work is boring, Homework is a waste of time, Things I learn will help me later in life, Grades are important to me, Things I learn are interesting to me (Q40a-Q40e)

High School Factors	
Curricular/ Academic Aspects:	
Class Engagement	1-4 Scalar variable indicating student's engagement in class based on answers to the following about class activities: Do you do more than is required? Do you stay focused? Do you daydream?* Do you concentrate? Do you think about other things?* (Q02a-Q02f)
Enrollment in low level math classes only	Binary, 1 = has not taken or enrolled in pre-calculus or higher math classes (Q05)
Enrollment in highest math class offered (including calc)	Binary, 1 = has taken calculus or highest math class offered by school (Q04a-Q05e)
SAT score	Scalar variable of SAT or converted ACT score (Q67, Q69)
Semester average in core courses	0-4 Scalar average of core (Eng, Math, Sci, Hist) course GPA last semester (Q06)
Have taken AP classes	Binary, 1 = has taken or currently enrolled in an AP class (Q09a-Q09f))

Demographic Profile:

Metro School District	Binary, 1 = Metro School, (MSA as defined by 2000 Census) (THEOP stratification)
School offers AP courses	0-6 Scalar measure of the number of AP courses offered by a school (Q07a-Q07f)
School is considered high minority	Binary, 1 = High Minority School, >70% minority (THEOP stratification)

Social Aspects:

Peer Plans about attending college	Binary, 1 = more than 3 friends plan to go to college (Q22b)
Teacher encouragement to go to college	Binary, 1 = Teachers have encouraged college (Q28a)
Counselor encouragement to go to college	Binary, 1 = School counselors have encouraged college (Q27a)
Perceived school supportiveness (nonlinear)	1-4 scalar variable of student's perceived school supportiveness indicated by support of the following statements: I am proud of belonging to this school, I wish I were in a different school*, I can really be myself at this school, Sometimes I feel like I don't belong at this school*, I feel like a real part of this school, I feel like I am successful at this school(Q20)

Interaction Variables

Teacher encouragement of students in high math classes to go to college

Teacher encouragement of FEMALE students in high math classes to go to college

Always wanted to go to college and an Immigrant

Always wanted to go to college and perceived school supportiveness

First generation college students in high minority schools

IV. Results

Descriptive statistics for all of the variables in the analysis are provided in Tables 3 and 5. With regard to the dependent variables in Table 3, overall students reported moderate amounts of self-esteem and self-efficacy. Slightly higher scores were found on average for the self-esteem indicators than for the self-efficacy indicators.[3] Cronbach's alpha inter-item correlation for the global scale was .65, indicating the

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[3] The overall lower average on the global well-being scale is due to the fact that it is not a simple additive combination of each of the nine indicators. Rather, the self-esteem and self-efficacy variables are separately combined and scaled into a range of 1-4. The two scales are added together to create the measure of global psycho-social well-being , which is then rescaled to range from 1-4.

items in the scale were reasonably well associated. The self-esteem indicators were more closely related to each other (as indicated by an alpha of .74) than were the self-efficacy indicators (α=.47). Caution must be used when interpreting results of the separate model for self-efficacy given the limited number of indicators available for this dependent variable and their overall weak relationship to each other. These results are provided for an exploratory comparison with self-esteem and model estimates are not robust.

Table 5

Variable Description	N	Weighted Mean or %	Range
Demographics			
Female	5039	54%	Binary
African American	5035	16%	Binary
Mexican American / Latino	5035	30%	Binary
Asian	5035	6%	Binary
Other Race	5035	3%	Binary
Immigrant	5078	13%	Binary
Parents Own Home	4784	85%	Binary
Student/Parent/Family Factors			
First Gen College Student	4674	26%	Binary
Parent Involvement	5202	2.37	0-7
Parent Enc. Of College	5244	28%	Binary
Sibling Dropped out of HS	4941	15%	Binary
Always wanted collage	4938	62%	Binary
Belief in the Value of Education	5241	1.02	1-4
High School Factors: Curricular/Academic Aspects			
Class Engagement	5176	2.78	1-4
Low Math	5241	3%	Binary
High Math	5302	18%	Binary
SAT Score	2164	1084	500-1600
Semester Ave in Core Classes	5238	3.21	1-4
Taken AP Class	4963	42%	Binary
High School Factors: Demographic Profile			
Metro School	5302	71%	Binary
# of AP Courses offered	2060	4.62	0-6
High Minority School	5302	32%	Binary
High School Factors: Social Aspects			
Peer Plans About College	5253	81%	Binary
Teacher Encouragement of College	5263	84%	Binary
Counselor Encouragement of College	5266	78%	Binary
Perceived School Support	5096	2.87	1-4

Table 5 displays the descriptive statistics for the independent variables. Over half of the sample was female (53%), and over one-quarter (30%) was Mexican American

or Latino, while 16% were African American and 6% were Asian. Students who were immigrants comprised 13% of the sample. A full 85% of students reported their parents owned their homes, indicating that this variable is likely only identifying those very poorest of students in the sample.

The students and parents in the sample were moderately involved with educational issues, including college-going. Approximately 28% of parents encouraged their children to attend college and did not encourage other post-high school activities, such as working or the military. Their involvement in their child's school was also only moderate, in that they engaged in less than half of the activities that were queried, such as motivating to improve bad grades, reminding or helping with homework, and talking about school problems. This is perhaps less surprising given that more than 1 in 4 students did not have an elder in the family who attended college (26%), and 15% reported having a sibling who dropped out of high school. When asked about the importance of their high school education, most students did not value it very highly (mean = 1.02 on a 4 point scale). Despite this, a full 62% of students reported that they "always wanted to attend college".

With regard to high school factors and influences, three variables are used to measure the structural characteristics of the high school, namely location, demographics, and course offerings. A full 71% of the students attended a school in a metropolitan area, and in 32% of cases the school had a high minority population. On average, the schools offered between four and five Advanced Placement courses. Students' academic experiences and performance in high school was measured with variables for mathematics and AP course-taking, semester GPA, SAT score and level of class engagement. Nearly 1 in 5 students reported taking the highest math class available (18%), while only 3% reported their highest math classes was at a low level, below pre-calculus. Additionally, 42% of students had or was currently enrolled in an AP class. The average semester GPA of students in the sample was 3.2. Students' overall level of classroom engagement (which was 2.8 on a 4-point scale) reflected their academic achievements. Interactions with teachers, school staff, and peers in high school were also measured. The vast majority of both teachers and counselors encouraged college-going (87% and 78%, respectively). Overall, schools were rated 3 out of 4 in terms of their supportiveness, and 80% of students reported that more than 3 friends at school were planning to attend college.

Table 6 provides the results of an OLS regression model to predict global psycho-social well-being. Overall, the model predicted nearly 11% of the variance in the dependent variable.

Table 6: OLS Regression Model for Global Psycho-Social Well-Being

Predictors	B values	(s.e.)	
Demographics			
Female	-0.022	(0.020)	
African American	0.056	(0.030)	
Mexican American / Latino	-0.038	(0.028)	
Asian	-0.167	(0.031)	***
Other Race	-0.010	(0.051)	
Immigrant	0.005	(0.053)	
Parents Own Home	0.052	(0.028)	
Student/Parent/Family Factors			
First Gen College Student	0.022	(0.037)	
Parent Involvement in School	0.007	(0.004)	
Parent Enc. Of College Only	0.089	(0.023)	***
Sibling Dropped HS	0.025	(0.034)	
Always wanted college	0.237	(0.092)	*
Belief in the Value of Education	0.073	(0.061)	
High School Factors: Curricular/Academic Aspects:			
Class Engagement	0.046	(0.010)	***
Only Low Math Classes	-0.048	(0.060)	
Taking Highest Math Class	0.059	(0.057)	
SAT Score	0.000	(0.000)	
Semester Ave in Core Classes	0.047	(0.016)	**
Has Taken AP Class	0.051	(0.022)	*
High School Factors: Demographic Profile			
Metro School	0.032	(0.022)	
# of AP Courses Offered by School	0.015	(0.008)	
High Minority School	-0.004	(0.026)	
High School Factors: Social Aspects			
Peer Plans About College	0.050	(0.023)	*
Teacher Encouragement of College	0.075	(0.031)	*
Counselor Encouragement of College	-0.020	(0.021)	
Perceived School Support	-0.314	(0.100)	**
Perceived School Support ^2	0.074	(0.018)	***
Interaction Variables			
Teacher Enc of College X High Math	-0.143	(0.064)	*
Teacher Enc .of College X Female X High Math	0.073	(0.042)	
Immigrant X Always wanted college	-0.056	(0.060)	
Always wanted College X Perceived School Support	-0.070	(0.031)	*

High Minority School X First Gen. College Student	-0.091	(0.044)	*
Constant	2.422	(0.191)	

Adj. R2=	**0.107**		

*p<.05 **p<.01 ***p<.001*

Of the demographic variables, only Asians (when compared with whites) had lower levels of psycho-social well-being. Students who always wanted to go to college and whose parents encouraged college-going had higher levels of psycho-social well-being. Several of the high school academic measures also predicted higher levels of psycho-social well-being, including stronger engagement with classes, a higher GPA in core classes, and taking an AP class. High school interpersonal interactions with friends and teachers regarding college attendance also bore a positive relationship to psycho-social well-being. Students' evaluations of school supportiveness had a non-linear relationship with well-being. In its linear form it had a negative relationship to well-being, but when square it demonstrated that a very supportive school had a strongly positive relationship with well-being.

Several of the interaction variables constructed to examine specific student subgroups also had significant relationships. The first two interaction terms examined males and females separately in high math classes with teachers strongly encouraging college attendance. The signs on these two coefficients are opposite, indicating male and females do not have a similar reaction to this context. For males, the negative coefficient is significant, meaning this group has lower scores on the psycho-social well-being measure than all others. The interaction between always wanting to attend college and perceive school supportiveness indicates that the negative linear relationship found for school supportiveness is somewhat mediated for those students who always wanted to attend college. Finally, those attending high minority schools who would also be of the first generation to attend college had lower levels of psycho-social well-being.

Findings from the model predicting the combination of self-esteem measures are reported on in Table 7. The model explained 8% of the variance in self-esteem. Several differences from the prior model can be found. Females and Asians (when compared with males and whites, respectively), had lower levels of self-esteem. However, African American students had significantly higher levels of self-esteem than did white students. Those students whose parents were involved in school matters, and encouraged college-going had higher levels of self-esteem. The only academic high school experience related to self-esteem was having a higher level of class engagement.

Once again, school supportiveness had a non-linear positive relationship to self-esteem and teacher encouragement of college was also related to higher levels of self-esteem. Males in the highest math classes with teachers strongly encouraging college had lower levels of self-esteem, as did would-be first generation college students in high minority school.

Table 7: OLS Regression Model for Self-Esteem

Predictors	B values	(s.e.)	
Demographics			
Female	-0.047	(0.021)	*
African American	0.079	(0.029)	**
Mexican American / Latino	-0.023	(0.028)	
Asian	-0.128	(0.029)	***
Other Race	-0.013	(0.065)	
Immigrant	0.022	(0.045)	
Parents Own Home	0.049	(0.032)	
Student/Parent/Family Factors			
First Gen College Student	0.035	(0.035)	
Parent Involvement in School	0.009	(0.004)	*
Parent Enc. Of College Only	0.082	(0.022)	***
Sibling Dropped HS	0.017	(0.036)	
Always wanted college	0.200	(0.111)	
Belief in the Value of Education	0.042	(0.047)	
High School Factors: Curricular/Academic Aspects:			
Class Engagement	0.021	(0.009)	*
Only Low Math Classes	-0.028	(0.048)	
Taking Highest Math Class	0.063	(0.052)	
SAT Score	0.000	(0.000)	
Semester Ave in Core Classes	0.027	(0.017)	
Has Taken AP Class	0.036	(0.019)	
High School Factors: Demographic Profile			
Metro School	0.016	(0.019)	
# of AP Courses Offered by School	0.013	(0.007)	
High Minority School	0.012	(0.025)	
High School Factors: Social Aspects			
Peer Plans About College	0.015	(0.022)	
Teacher Encouragement of College	0.063	(0.030)	*
Counselor Encouragement of College	-0.035	(0.019)	
Perceived School Support	-0.212	(0.101)	*

Perceived School Support ^2	0.058	(0.017)	**
Interaction Variables			
Teacher Enc of College X High Math	-0.121	(0.058)	*
Teacher Enc. of College X Female X High Math	0.037	(0.041)	
Immigrant X Always wanted college	-0.094	(0.057)	
Always wanted College X Perceived School Support	-0.054	(0.036)	
High Minority School X First Gen. College Student	-0.082	(0.042)	*
Constant	2.860	(0.176)	

	Adj.R2=	**0.084**	

*p<.05 **p<.01 ***p<.001*

Table 8: OLS Regression Model for Self-Efficacy

Predictors	B values	(SE)	
Demographics			
Female	0.012	(0.019)	
African American	0.011	(0.030)	
Mexican American / Latino	-0.038	(0.026)	
Asian	-0.141	(0.032)	***
Other Race	-0.003	(0.048)	
Immigrant	-0.015	(0.046)	
Parents Own Home	0.035	(0.026)	
Student/Parent/Family Factors			
First Gen College Student	0.001	(0.039)	
Parent Involvement in School	0.003	(0.004)	
Parent Enc. Of College Only	0.061	(0.021)	**
Sibling Dropped HS	0.023	(0.027)	
Always wanted college	0.183	(0.079)	*
Belief in the Value of Education	0.076	(0.063)	
High School Factors: Curricular/Academic Aspects:			
Class Engagement	0.053	(0.009)	***
Only Low Math Classes	-0.050	(0.061)	
Taking Highest Math Class	0.033	(0.060)	
SAT Score	0.000	(0.000)	*
Semester Ave in Core Classes	0.048	(0.014)	**
Has Taken AP Class	0.047	(0.021)	*
High School Factors: Demographic Profile			
Metro School	0.035	(0.021)	
# of AP Courses Offered by School	0.011	(0.009)	
High Minority School	-0.020	(0.024)	
High School Factors: Social Aspects			
Peer Plans About College	0.065	(0.023)	**
Teacher Encouragement of College	0.057	(0.030)	
Counselor Encouragement of College	0.003	(0.020)	
Perceived School Support	-0.294	(0.092)	**
Perceived School Support ^2	0.062	(0.017)	***
Interaction Variables			
Teacher Enc of College X High Math	-0.108	(0.066)	
Teacher Enc .of College X Female X High Math	0.081	(0.039)	*
Immigrant X Always wanted college	0.003	(0.055)	

Always wanted College X Perceived School Support	-0.059	(0.027)	*
High Minority School X First Gen. College Student	-0.065	(0.044)	
Constant	2.598	(0.177)	

Adj. R2		**0.090**	

Findings from the model predicting self-efficacy are reported on in Table 8. The full model explained 9% of the variance in self-efficacy. Because of the fewer measures available for this construct, and the weaker relationship between the measures, these results should be interpreted with caution, and are meant more to suggest possible differences that might exist between esteem and efficacy development in youth.

Asian students were the only demographic group significantly different from whites and they reported lower levels of self-efficacy than the comparison group. Students whose parents encouraged college and who always wanted to attend college had higher levels of self-efficacy. Several academic aspects of high school were positively related to self-efficacy, including higher levels of class engagement, higher SAT scores, higher semester GPAs and taking an AP course. Students with more than three peers planning to attend college were also more highly efficacious. The non-linear transformation of school supportiveness was significantly and positively related to self-efficacy. Finally, two different interaction variables were also related to self-efficacy. Female students in high math classes whose teachers encouraged college attendance had more positive feelings of self-efficacy. The linear version of school supportiveness was negatively related to self-efficacy even for those who always wanted to attend college.

In general, the self-efficacy model exhibited numerous differences from the esteem model. More independent variables were significantly related to self-efficacy. In addition, for self-efficacy, both academic and social aspects of high school were important predictors, whereas for self-esteem academic factors were far less relevant.

V. Conclusions

This study identified numerous factors related to the psycho-social well-being of adolescents in high school, many of which had to do with their school contexts. In terms of demographic differences, Asian students had consistently lower levels of psycho-social well-being in all three models tested. In addition, females had lower self-esteem while African Americans had higher self-esteem. These significant relationships point to the need for future analyses to disaggregate by gender and race for a more complete understanding of how families and schools may impact psycho-social well-being differently for specific demographic groups.

Parents' greatest contribution to esteem and efficacy may be through encouraging college attendance, and *not* encouraging other post-high school plans such as working or the military. Also, students were found to have higher levels of psycho-social well-being when they reported they always wanted to attend college, and parents are those most likely to instill a desire to attend college at an early age.

In none of the instances did the demographic profile of the high school have an impact on psycho-social well-being. This should be an encouraging finding for school administrators because for these students school location or population was unrelated to esteem and efficacy. Rather, what happened in the school setting mattered more.

School contributions to psycho-social well-being were found in both academic and social aspects of high schools. Students with higher levels of engagement with classroom activities were consistently found to have higher levels of general psycho-social well-being and of esteem and efficacy when they were modeled separately. In addition, academic success as measured by taking at least one an AP class and having higher semester GPAs were both related to global well-being and self-efficacy. In contrast, SAT scores were only related to self-efficacy, a finding supported by prior studies (Moller et al. 2009) and by Marsh (2007) who suggests that direct feedback from teachers has a larger impact on self-concept than general standardized test performance.

Social interactions with teachers and peers (but not school counselors) about attending college had a positive impact on psycho-social well-being. Additionally, the feeling that high school is very supportive was positively related to all three psycho-social measures, and this was a non-linear relationship, meaning that the most supportive schools offered the greatest positive impact, and that even only moderately supportive schools may have a negative relationship to psycho-social well-being.

The method of creating interaction terms to explore the psycho-social well-being of specific student groups was particularly helpful for distinguishing between males and females taking the highest math classes available at their schools. Both of these groups had teachers who encouraged college attendance, which by itself was positively related to psycho-social well-being. However, a significant and negative coefficient was found for males for the model of psycho-social well-being and self-esteem. For females the coefficient was positive, but not significant, except for the model of self-efficacy, where it was significant and positive. Overall, this gives us some indication that males and females in similar types of classes do not experience a similar impact on their psycho-social well-being. An analysis of domain-specific (English and mathematics) self-efficacy also found race (non-white) and gender (female) to be primary predictors (Dykeman et al. 2003). Additionally, Mandara and colleagues (2009), in their study of African American adolescents, found that self-esteem was related to different factors for male and female youth (see also Bong 1999). These findings underscore the need for disaggregation by gender and race when psycho-social well-being is examined.

For all models the amount of variance explained in the dependent variables is around 10%. This small amount of explained variance may be an artifact of the small number of indicators available to separately measure esteem and efficacy, and that only global measures are available for analysis, rather than domain-specific measures of *academic* esteem and efficacy. Prior research would suggest that the amount of variance explained would increase and that the relationships would be stronger were domain-specific measures available (Zeldin and Pajares 2000; Usher and Pajares 2008; Friedlander et al 2007).

An additional limitation is that the directionality of some of the findings is unclear. For example, it may be that girls with higher levels of self-esteem choose to take higher math classes, and likewise boys taking these classes already have lower levels of self-esteem. Because regression analyses cannot determine the directionality of the relationships, these possibilities cannot be ruled out. We suggest that the relationship is most likely mutually reinforcing for girls, in that those with higher self-esteem take higher level math classes and their performance in these classes is likely to further increase their self-esteem. The exact nature of these relationships for adolescent boys remains unclear and merits further examination with a pre- and post-test experimental design.

This study sought information about the ways in which psycho-social factors are related to parent and school influences for high school students. Despite limitations in the dependent variables, both parent/family and school-based factors were found

to bear relationships to psycho-social well-being, esteem and efficacy when race, gender and socio-economic status were controlled. Given their long-term importance to adult quality of life, additional studies are needed that examine the ways in which school curricula and personnel can aid in the development of psycho-social well-being for specific subgroups of high school students.

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