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The role of positive academic self-concept in promoting school success

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ABSTRACT

Identity research argues for enhancing students' current and future positive academic self-concepts to strengthen educational success. However, multiple factors from youths' home and school ecologies, as well as structural disadvantage, influence this relationship. Using the data from the Beyond High School Study (N = 9658), this analysis examines the role of academic self-concept in predicting school success over and above co-occurring contributors. The effects of positive academic self-concept on future educational aspirations, accessing educational guidance counseling, and student GPA were tested using stepped linear regression, controlling for student socio-demographics, school environment factors, and parental support. Results confirmed hypotheses for each academic indicator, with positive academic self-concept demonstrating the strongest coefficient. Implications for school-based intervention are discussed, linking to social psychological literature on future-oriented self-cognitions and strengthening motivational and regulatory function, particularly among youth facing systemic challenges.

1. Introduction

Educational attainment is widely recognized as an enduring protective factor for young people's physical and mental health (Egerter, Braveman, Sadegh-Nobari, Grossman-Kahn, & Dekker, 2009; Suhrcke & de Paz Nieves, 2011). In the United States, a chronic and pernicious relationship exists between social group membership and attainment, underscoring the need to identify readily available points of intervention to promote school success. Related psychological structures of current and future academic self-concept show promise as mutable resources to bolster academic success that are potentially available to all youth (Oyserman, Bybee, & Terry, 2002, 2006). However, the picture of educational success is complex, as both educational success and positive academic self-concept are embedded with other risks and protective factors. The current study seeks to examine unique effects of academic self-concept on three indicators of school success, above and beyond other known parental and school contributors.

2. Conceptual framework and research hypotheses

2.1. Students academic self-concept: effects and social cognitive underpinnings

Academic self concept, or beliefs about oneself as a student, have been shown to have both direct and indirect effects on a range of educational outcomes, even after controlling for factors such as the previous achievement histories, and these effects can persist into higher education (Liu, Cheng, Chen, & Wu, 2009; Marsh & O'Mara, 2008; Valentine, DuBois, & Cooper, 2004; Wouters, Germeijs, Hilde, & Verschueren, 2011). Academic-self concept and student achievement are mutually reinforcing. As youth experience school success, their academic self-concept is enhanced; as academic self-concept is enhanced, student motivation, drive and academic accomplishments strengthen. Importantly, linkages between self concept and behavior appear to benefit from domain specificity (Ludtke, Koller, Artelt, Stanat, & Baumert, 2002). For example, academic self concept is demonstrated to be reciprocally engaged with academic achievement, whereas other domains of self-identity have less influence on academic success. Thus, focusing efforts on bolstering academic self concept may influence academic achievements more than interventions to promote global self enhancements, such as self-esteem (Marsh & Craven, 2006).

Individual's self-concept typically functions in a reciprocal relationship with the social environment. Youth derive meanings from experiences related to school and use these experiences in the creation of their self-concepts as students. Consistent negative or positive experiences with school, including experiences with teachers and classmates, become building blocks in academic self-concept, informing students' understandings about how one performs the role of student, and what future outcomes, positive or negative, are likely to stem from behaviors and efforts. For example, a young person who has experienced chronic academic failure and has a negative academic self-concept (e.g. "I am a poor student") will be perceptually biased toward environmental inputs (e.g. teacher remarks, peer attitudes, or larger cultural messages) that reinforce that identity, and less prepared cognitively to incorporate

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schema-discordant input (e.g., about promise of success). Indeed, people who already feel insecure in a particular domain (like academic ability), are more sensitive to environmental cues and subsequent metacognitive processes relevant to their insecurity (Tormala, Petty, & Briñol, 2002).

As negative experiences accrue, the self-concept of "poor student" becomes progressively elaborated, organized, and interwoven with other related self-conceptions (e.g. "lazy" "stupid" "failure"). Frequent activation of self concepts leads to automated processing that one is not even aware of. For example, the "negative student self" is drawn into active play when triggered by environmental cues, and subsequently regulates how the young person feels and makes decisions in that moment (Fiske & Taylor, 2007; Nurius & Macy, 2012). On the other hand, as youth experience school success, their academic self-concept is fortified, which in turn may increase motivation, drive, and strengthen academic accomplishments (Marsh & Craven, 2006; Yeung, Rhonda, Craven, & Kaur, 2012; Green, et al., 2012). Self concepts are incrementally built through on-going interactions with the environment and, although somewhat resistant to challenge, they are also mutable. Intervention trials attest that current and future academic self-concept, and subsequent performance, are malleable for youth at risk of school failure (Cohen, Garcia, Apfel, & Master, 2006; Cohen, Garcia, Purdie-Vaugns, Apfel, & Brzustoski, 2009; Oyserman et al., 2002, 2006).

2.2. Indicators of school success

The current work examines three aspects of school success that have been shown as important intervention targets: school grades, educational aspirations, and accessing academic guidance (Cohen et al., 2006, 2009; Oyserman et al., 2002, 2006). School attainment has been demonstrated, in turn, as a robust indicator of subsequent work and economic success (Crissey, 2009; Rouse & Barrow, 2006).

As an indicator of school success, GPA reflects both current academic standing as well as future educational prospects. Academic aspirations are associated with positive perception of parental aspirations (Tynkkynen, Tolvanen, & Salmela-Aro, 2012), educational attainment (Beal & Crockett, 2010; Heckhausen, Chang, Greenberger, & Chen, 2013; Marjoribanks, 2005), and adult income (Sabates, Harris, & Staff, 2011). Aspirations play a self-regulatory function in moving an individual toward goal-congruent behaviors and resisting diversions (Cross & Markus, 1994), whereas weaker self-regulatory capabilities are evident among those with, negative academic self-concepts (Hoyle & Sherrill, 2006; Roeser, 2002). Thus, self-concepts contain important information about one's current academic self-concept as well as informing aspirations for future educational success.

Aspirations represent desired end states whereas procedural knowledge takes the form of strategies to guide progress toward end states. School-based adults such as teachers and guidance counselors provide important resources for students to help develop strategies, and "connect the dots" between aspirations and outcomes. Accessing adult resource persons, therefore, serves as an important indicator of an agentic step that students can take to achieve procedural knowledge for how to actualize higher educational aspirations. Further, accessing adult resource persons may demonstrate self-efficacy in taking initiative toward a personal goal, as suggested by the recent findings (Morgan, Leenman, Todd, & Weeden, 2013).

Developing procedural knowledge, as a component of cognitive schemas, involves first learning and then encoding general "if-then" and "how to" procedural information into self-relevant and self-efficacious forms germane to attaining a future self (Fiske & Taylor, 2007). Scheduling and meeting with resource people such as guidance counselor manifest a pathway to enriching academic self-concept and to increasing the odds of achievement. Within a social cognitive framework, these actions demonstrate persistence and motivation toward a personal goal of accessing higher education.

2.3. Co-contributors for school success: parental and school factors

The ability of a young person to succeed academically is influenced by factors constituting ecological contexts, including social supports at home and in school, as well as student background characteristics such as race, ethnicity, socioeconomic status, and gender. From a young age, parents influence children's academic achievement, evident as early as the kindergarten years (Froiland, Peterson, & Davidson, 2013) with effects continuing into young adulthood (Faas, Benson, & Kaestle, 2013). Parental factors including involvement (Hill et al., 2004), academic encouragement (Witkow & Fuligni, 2011), acceptance (Pallock & Lamborn, 2007), educational aspirations/expectations (Spera, Wentzel, & Matto, 2009; Vitoroulis, Schneider, Vasquez, Soteras de Toro, & Gonzáles, 2012), and familial assets (Kim & Sherraden, 2011) are all associated with a range of indicators of academic success, with continuing effects evident in young adulthood achievement (Gordon & Cui, 2012).

Within the high school years, peers and school-related experiences grow in their influence of students' academic values and competencies/expectancies. Longitudinal studies provide compelling evidence for the effects of unsafe schools and poor teaching quality on student engagement and retention (Fortin, Marcotte, Thierno, Potvin, & Royer, 2013; You & Sharkey, 2009). In contrast, student perception of positive teaching climate is associated with decreased school drop-out rates (Barile, et al., 2012). Student academic achievement has been positively associated with range of school-level factors including perceived belonging (Frey, Ruchkin, Martin, & Schwab-Stone, 2009; Pittman & Richmond, 2007) and teacher support (Frey et al., 2009; Tinsley & Beale Spencer, 2010), whereas factors such as feeling unsafe are related to worse academic achievement (Akiba, 2010). Collectively, family, peer, and school factors constitute important aspects of students' ecologies within which academic self-concepts are forged and exert influence on academic success.

2.4. Research hypotheses

Our analytic-conceptual model (see Fig. 1) embeds adolescent positive academic self-concept as an individual factor within a multi-level set of success contributors. We tested two research hypotheses relative to three distinct, yet interrelated, variables theorized to promote academic success: higher educational aspirations, accessing the guidance counselor for academic purposes and GPA.

1) A multi-level framework capturing the domains of: a) demographics, b) family supports, c) school supports, and d) individual level academic self-concept, will provide significant cumulative explanation of each of the academic success indicators.
2) Academic self-concept will sustain unique and significant contribution to these indicators of success after accounting for other variables.

3. Methodology

3.1. Sample

The sample was drawn from five pooled survey waves of senior class cohorts from twelve high schools from the western Washington region between 2000 and 2005 (N = 9658) participating in the UW-Beyond High School Study of educational attainment and transition to adulthood. Schools were selected to capture a cross-section of communities in terms of area socioeconomic characteristics. Participants were recruited from class lists of students identified by each of the participating schools as completing their final semester of high school. All participants were surveyed within two months of commencement after obtaining direct consent or, (in the case of students under age 18) both direct consent and surrogate consent from a custodial parent/guardian. Surveys were pencil and paper. Participation was voluntary

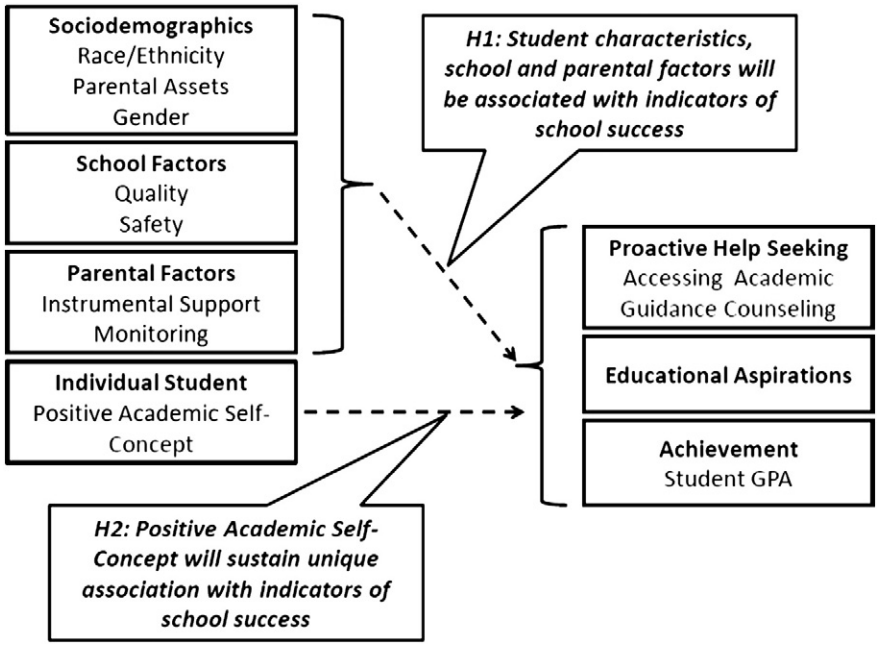

Fig. 1. Analytic-conceptual model of relationships between variables and research hypotheses.

with the nominal incentive of a movie pass upon completion. The overall response rate was 90%.

The average age of participants was 18 years with 54.6% being female. Racial/ethnic self-identification by students reflected the following: non-Hispanic Caucasian (60.4%), Hispanic (6%), Asian (13.2%), Native Hawaiian and Pacific Islander (4.7%), African American (13.8%) and Native American (1.5%). Research agreements with cooperating schools precluded the inclusion of survey items pertaining to income, therefore, we used home ownership and parental levels of education as indicators for socioeconomic status in the analysis: 67.7% had parent(s) who owned their home, 32.3% did not. 35.5% of participants' mothers and 30.8% of fathers had not finished high school, 36.4% of mothers and 29.8% of fathers had attended some college and 28.1% of mothers and 30% of fathers had completed a college degree or higher. Finally, 14.1% of the participants was foreign born and 28.8% came from immigrant families.

3.2. Dependent variables

Grade point average (*GPA*) was assessed on an 8-point self-reported scale (from 1 = mostly below D's to 8 = mostly A's). *Aspired level of educational attainment* is a seven-point ordinal scale reflecting how far participants would like to go in school, anchoring number of years of schooling to categories: less than high school graduation (11.5 years); high school graduation only (12 years); less than 2 years of college, vocational or business school (13 years), two or more years of college including 2-year degree (14 years); and finish college (16 years), master's degree or equivalent (18 years), PhD., M.D. or other professional degree (21 years). *Accessing guidance counseling for educational planning* is based on the self-reported frequency of talking to a guidance counselor in the past 12 months, averaged over 6 educational topics such as long-term educational plans, career counseling, college applications, and applying for financial aid (0 = never, 1 = once, 2 = twice, 3 = three or more times; $\alpha = .79$).

3.3. Potential promotive factors

3.3.1. School and parental contributors

Parental support is an eleven-item mean-based measure assessed on a 4-point Likert-type scale (1 = never to 4 = often) of parental behavior reflecting academic involvement (e.g., monitors homework, discusses school activities) as well as youth perceptions of parental love, concern, and availability ($\alpha = 0.73$). *School academic quality* is a five-item mean-based measure using a 4-point Likert type scale (1 = strongly disagree to 4 = strongly agree) of youths' appraisals of their school environment; e.g., teaching is good, teachers are interested in students, grading and discipline are fair ($\alpha = 0.87$). *School safety* is a 3-item mean-based measure using a 4-point Likert type scale (1 = strongly agree to 4 = strongly disagree) of youths' appraisals of school safety from; e.g., "I don't feel safe in this school" and "Fights often occur between different racial and ethnic groups" ($\alpha = .64$).

3.3.2. *Positive academic self-concept*

This is a six item mean-based measure using a four point Likert-type scale regarding whether the adolescent views school as a central aspect of his/her life, values doing well in school as an important part of his/her identity, feels that it is OK to do well in school, values the opinions of teachers and other adults in the school context and eschews antisocial academic behaviors (e.g. cheating on tests and homework) ($\alpha = 0.70$). Examples include: "My schoolwork is a central aspect of my life" and "How well I do in school is an important part of who I am as a person."

3.3.3. Control variables

3.3.3.1. Demographic characteristics. For purposes of regression analysis, sex was coded (0 = males, 1 = females). Socioeconomic status is captured by two indicators: home ownership (0 = no, 1 = yes) and mother/father level of education (coded: 1 = high school, 2 = some college 3 = college or higher). Each race/ethnicity category was dichotomously coded with the Caucasian as the referent group (0 = white, 1 = each category for youth of color).

3.4. Analysis

To test our study questions, we first examined the correlational patterns among the study variables (see Table 1).

We then sequentially regressed each of the three sets of the previously described explanatory variables – (a) *demographics*: home ownership and parental level of education (as family SES indicators), sex and race/ethnicity; (b) *school and parental factors*: youth appraisals of school

academic quality, school safety and parental support; and (c) positive academic self-concept – onto each of the dependent variables. This analysis plan allowed us to examine whether positive academic self-concept contributes significantly and uniquely to student academic success after accounting for other factors theorized to also contribute to success. In addition to testing significance of the overall models, each regression step was tested for significance of that set and for the individual path coefficients.

4. Results

4.1. Summary of findings

Overall, the findings confirmed our research hypotheses. Each full model achieved significance in explaining educational aspirations (see Table 2); accessing school guidance counseling (see Table 3), and GPA (see Table 4). At each regression step, significant change in R^2 was achieved. Finally, positive academic self-concept achieved significance for each dependent variable net of all other predictors and emerged as the strongest predictor with the largest beta coefficient. Significant differences in mean-level of academic self-concept were found based on home ownership (mean home owning = 3.03, mean none-home owning = 2.97, $t = 4.95$, $p < .0001$), sex (mean boys = 2.87, mean girls = 3.08, $t = -19.45$, $p < .0001$) and race/ethnicity $F(5, 9473) = 33.68$, $p < .00$).

4.2. Explaining educational aspirations

In the final model, home ownership, mother and father level of education, and gender sustained significant explanation of educational aspirations, with low-income students and boys having lower aspirations (see Table 2). The African American and Asian youth reported significantly higher educational expectations compared to the Caucasian students. School and parental factors significantly improved the model, with youth appraisals of school safety and parental support positively associated with educational aspirations (R^2 change = 0.02, $p < .001$). Finally, adding positive academic self-concept to the model improved the explanatory power (R^2 change = 0.04, $p < .001$).

4.3. Explaining accessing educational guidance counseling

Membership to a racial or ethnic minority group was significantly associated with accessing guidance counseling, with minority students significantly more likely to access guidance counseling than the Caucasian students (Table 3). Girls were more likely to access guidance counseling than boys. Although home ownership was not significant in the full model, when tested without race/ethnicity, non-home owning youth sought more help. School and parental factors significantly improved the explained variance (R^2 change = 0.06, $p < .001$), with all predictors positively contributing to accessing academic guidance counseling, and academic self-concept provided further model improvement (R^2 change = 0.02, $p < .001$).

4.4. Explaining student GPA

All demographic characteristics sustained significance into the final model predicting GPAs. Students with home-owning parent(s), parents with higher levels of education, and girls achieved significantly higher GPAs (see Table 4) than their respective comparison groups. African American, Native American, Hawaiian/Pacific Islander and Hispanic youth all had significantly lower GPAs compared to the Caucasian youth whereas the Asian youth GPAs were significantly higher. School and parent factors significantly improved the overall model (R^2 change = 0.04, $p < .001$); youth appraisals of school safety and parental support continued to be significantly associated with student GPA; whereas appraised school academic quality did not sustain significance. Academic identity again improved the model (R^2 change = 0.07, $p < .001$), again being the single strongest path coefficient ($\beta = 0.30$).

5. Discussion

Results from this study show that academic self-concept plays an important role in academic success, including increasing academic aspirations, access to guidance, and better grades. As expected, each of the theorized contributors – students' demographics, appraisals of their school environments (quality and safety), and parental support in addition to academic self-concept – play important roles in accounting for school success and pathways to continuation. Positive academic self-concept sustained its significant contribution over and above the other predictors and was consistently the most robust contributor, as indicated by its stronger coefficient. The findings indicate that positive academic self-concept is important for all students; the relationship being sustained after controlling for important differences across individual and family characteristics.

5.1. The explanatory role of academic self-concept in variation in school success

Our findings draw attention to the salience of components of youth identity – in particular self-concepts related to present and future academic ability/capability – on academic success in three ways. First, the cognitive development of positive academic self-concept in the 'present' supports a young person's future-oriented academic aspirations. Second, the action of accessing the guidance counselor for educational purposes illustrates the motivational role that academic self-concept plays in student behavior. Finally, the finding that positive academic self-concept emerged as the strongest contributor to student GPA reflects the value and potential of this aspect of self-identity as a mutable resource for student success.

The finding that academic self-concept provides unique explanation of educational aspirations is consistent with the formation and functioning of academic self-schemas within a social cognitive framework. In the same way that self-schemas for current characteristics (e.g., "I am an athlete," "I am good in math") become cognitively and affectively represented in memory and drawn into the work of prediction, interpretation,

Table 1
Bivariate correlations.

	1	2	3	4	5	6	7
1. School academic quality	1						
2. School safety	.41***	1					
3. Parental support	.27***	.17***	1				
4. Academic self-concept	.36***	.12***	.35***	1			
5. Educational aspirations	.09***	.12***	.15***	.22***	1		
6. Guidance counseling	.17***	.11***	.21***	.25***	.24***	1	
7. Grade point average	.17***	.13***	.21***	.35***	.33***	.20***	1

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

Table 2
Stepped regression analysis explaining educational aspirations ($N = 8064$).

Sets	Set 1			Set 2			Set 3		
	B	SE B	β	B	SE B	β	B	SE B	β
Sociodemographics									
Home ownership	.38	.07	.07***	.33	.07	.06***	.40	.07	.07***
Mother level ed.	.50	.04	.15***	.45	.04	.14***	.47	.04	.15***
Father level ed.	.48	.04	.15***	.43	.04	.14***	.43	.04	.14***
Sex	.50	.06	.10***	.44	.06	.09***	.19	.06	.04**
African American	.36	.09	.05***	.35	.09	.04***	.30	.09	.04**
Native American	−.20	.24	−.01	−.12	.24	−.01	−.19	.23	−.01
Asian	1.09	.09	.14***	1.14	.09	.15***	.99	.09	.13***
Hawaiian/Pacific Is	.30	.13	.03*	.28	.13	.02*	.15	.13	.01
Hispanic	.20	.13	.02	.19	.12	.02	.11	.12	.01
School & parental factors									
School academic quality				.10	.06	.02	−.24	.06	−.05***
School safety				.31	.05	.08***	.36	.05	.09***
Parental support				.45	.06	.09***	.11	.06	.02
Individual factor									
Positive academic self-concept							1.23	.07	.23***
F		90.61***			80.61***			102.47***	
R^2		.10			.11			.15	
R^2_{change}					.02***			.04***	

Caucasian is referent group for race/ethnicity.
* p < .05.
** p < .01.
*** p < .001.

and decision making, so too are schemas for self in the future (Hoyle & Sherrill, 2006; Markus & Nurius, 1986). Future aspirations in which a young person has invested considerable thought, feeling, and experience become part of future-oriented self-schema.

Goals and aspirations are demonstrated drivers in student achievement. Adolescents with well-elaborated future self-concepts inclusive of educational goals and success attain better school outcomes (Oyserman et al., 2002). Personal goals provide both the fuel for individual motivation toward self-actualization, as well as cognitively encoding a sense of purpose to guide or regulate current behaviors in ways that will connect the present self with the aspired-to future self (McInerney, 2003; Taylor, Neter, & Wayment, 1995). Positive academic self-concept is an operationalization of how goals or aspirations become internalized, shifting from external to intrinsic source motivation, with significant implications for goal persistence in the face of setbacks and roadblocks (see Koestner, Lekes, Powers, & Chicoine, 2002, for meta-analysis). Conversely, a lack of or very rudimentary self-schema in a particular domain – such as academics – means that a young person will be less inclined to recognize their ability within that domain, or adopt steps necessary for completing tasks associated with it (Cross & Markus, 1994). Thus, strengthening a young person's academic self-conceptualization includes future educational aspirations. A student may or may not be fully confident of her or his ability to achieve future educational goal, but embracing the goal is a pivotal step in the pathway to realization.

In our sample, the African American, Native American, Hawaiian/Pacific Islander and Hispanic students had significantly lower GPAs compared to the Caucasian students. Boys had significantly lower GPAs compared to girls. In addition, we found significantly lower

Table 3
Stepped regression analysis explaining accessing guidance counselor ($N = 7652$).

Sets	Set 1			Set 2			Set 3		
	B	SE B	β	B	SE B	β	B	SE B	β
Sociodemographics									
Home ownership	−.03	.12	−.00	−.18	.12	−.02	−.08	.12	−.01
Mother level ed.	.14	.07	.03	.01	.07	.00	.03	.07	.01
Father level ed.	.33	.07	.03***	.14	.07	.03*	.16	.07	.03*
Sex	.88	.10	.10***	.70	.10	.08***	.41	.10	.05***
African American	1.77	.16	.13***	1.79	.16	.13***	1.72	.16	.13***
Native American	.95	.43	.03*	1.01	.41	2.44**	.97	.41	.03*
Asian	1.24	.16	.09***	1.35	.15	.10***	1.17	.15	.09***
Hawaiian/Pacific Is	1.53	.23	.08***	1.42	.23	.07***	1.30	.22	.07***
Hispanic	.10	.22	.05***	.84	.21	.05***	.74	.21	.04***
School & parental factors									
School academic quality				.98	.10	.12***	.60	.12	.07***
School safety				.38	.09	.05***	.43	.09	.06***
Parental support				1.51	.10	.17***	1.12	.12	.13***
Individual factor									
Positive academic self-concept							1.44	.12	.16***
F		32.49			68.08***			75.55***	
R^2		.04			.10			.12	
R^2_{change}					.06***			.02***	

Caucasian is referent group for race/ethnicity.
* p < .05.
** p < .01.
*** p < .00.

Table 4
Stepped regression analysis explaining GPA ($N = 8662$).

Sets	Set 1			Set 2			Set 3		
	B	SE B	β	B	SE B	β	B	SE B	β
Sociodemographics									
Home ownership	.23	.03	.07***	.19	.03	.06***	.24	.03	.08***
Mother level ed.	.17	.02	.10***	.13	.02	.07***	.15	.02	.09***
Father level ed.	.19	.02	.11***	.15	.02	.09***	.16	.02	.09***
Sex	.62	.03	.22***	.57	.03	.21***	.34	.03	.14***
African American	−.48	.05	−.11***	−.47	.05	−.11***	−.52	.04	−.12***
Native American	−.22	.12	−.02	−.19	.12	−.02	−.20	.12	−.02
Asian	.38	.05	.09***	.40	.05	.10***	.29	.04	.07***
Hawaiian/Pacific Is	−.14	.07	−.02*	−.17	.07	−.03*	−.25	.06	−.04***
Hispanic	−.24	.06	−.04***	−.27	.06	−.05***	−.32	.06	−.05***
School & parental factors									
School academic quality				.24	.03	.09***	−.00	.03	.05
School safety				.10	.03	.04***	.14	.03	.06***
Parental support				.39	.03	.14***	.14	.03	.05***
Individual factor									
Positive academic self-concept							.90	.03	.31***
F		122.26***			128.05***			183.65***	
R^2		.12			.16			.23	
R^2_{change}					.04***			.07***	

Caucasian is referent group for race/ethnicity.
* p < .05.
** p < .01.
*** p < .001.

mean-levels of academic self-concept for both non-home owning youth and boys. This suggests that for these youth in particular, bolstering positive academic self-concept may have a greater impact on GPA through the "working" cognitive referents more frequently activated and drawn into working knowledge, and the resultant motivational, self-regulatory, and procedural skill benefits associated with these elaborated self-schemas.

5.2. Implications for intervention

Implications for our findings are particularly relevant within current efforts to tailor and target both instructional and behavioral interventions more effectively within schools. Our findings indicate that the internalization of goals and values related to academic success is broadly associated with greater success, even controlling for a variety of differences among students, the effect persists. Thus, school-wide messaging and conventional teaching instruction that purposefully attend to developing this aspect of students' self-concept is likely to provide value-added benefit for all students. However, as indicated above, youth who face systemic barriers and challenges in the educational pipeline may benefit additionally from interventions aimed at bolstering positive academic self-concept.

5.2.1. Considerations for youth who face systemic challenges

The previous research illustrates how positive identity formation is impinged for adolescents who face substantial social and economic disadvantage. For example, group images linked to circumstances that limit identity development opportunities (e.g., stereotypes, poverty) result in lower levels of positive future self-conceptualizations as well as fewer strategies to successfully achieve aspired-to goals (Kao, 2002; Oyserman & Fryberg, 2006). For racial/ethnic minority and low-income youth, positive academic self-concept development may be especially powerful to counter negative stereotyping and socioeconomic disadvantage that produces a paucity of positive academic self-beliefs. Thus, more focused interventions, including tailoring existing programs and bolstering student mentorship to focus explicitly on positive academic self-concept may be part of targeted outreach for vulnerable youth within schools.

5.2.2. Adapting interventions

Educators, administrators, school counseling, and guidance personnel as well as parents may play important roles in helping adolescents to envision and build detailed academic self-concept linked directly to educational goals and pursuits. Interventions that target (1) developing detailed visions of future self in the academic domain as well as (2) skills necessary for attaining these future educational aspirations serve to build competitive self-schemas that operationalize the future "where I want to be" descriptively as well as the procedural content for getting "from here to there" (Oyserman et al., 2006). Building on a social cognitive framework, Oyserman et al. (2002, 2006) describe program elements consistent with fostering positive academic self-concept and correspondent procedural knowledge and skill development. Key program elements included cognitive visualization of personal roadmaps from current place to future aspired-place, anticipatory problem solving of roadblocks or 'forks in the road' that may be faced, "mapping out" procedural details such as steps to graduation and accessing future education. Students worked with adult mentors to "fill in" their procedural knowledge, and joined with parents and community members to deepen local guidance related to job prospects and networking to learn about training pathways to those jobs. Students were introduced to and given the opportunity to practice informational interviewing with community members engaged in occupations of interest to the students. In a randomized controlled trial, students in the intervention achieved significantly higher GPAs, standardized test scores, and lower absenteeism. They were also twice as likely to advance on-time to ninth grade as control youth. Effects were sustained after one year, with youth in the intervention group achieving higher GPAs and experiencing less depression (Oyserman et al., 2006).

5.2.3. Guidance counselors and adult mentors

In general, students with higher positive academic self-concept were significantly more likely to access guidance counselors for educational purposes, a trend particularly evident for students of color compared with the Caucasian students. One interpretation is that youth of color may be more likely to be referred to guidance counselors or seek them out on their own initiative. Guidance counseling and linkage to mentors

thus represent a critical resource in proactively elaborating students' positive academic self-concept, including the specificity of their aspirations and the procedural knowledge to navigate and persist through paths to higher education. Students who have positive and trusting relationships with teachers or other mentors are better able to receive and make use of critical feedback and other learning opportunities (Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000; Cohen & Steele, 2002). Similarly, the availability of individuals who provide role models for young people has been found associated with greater academic orientation and investment in academic goals (Zirkel, 2002).

Thus, high school guidance counselors may benefit from incorporating a social cognitive framework of identity development into their everyday interactions with students. The counseling and mentorship programs many schools have in place provide a platform on which to build more directed activities, such as actively providing experiences designed to cognitively operationalize positive academic self-concept and strengthen skills related to problem solving and persistence. Counselors and role models who reflect the young persons' own gender and race provide self-relevant *content* that appears to facilitate development of academic-related goals and future educational aspirations and, subsequently, better academic performance (Zirkel, 2002).

Self-views have a strong impact on both academic and vocational decisions; with attainment in adulthood predicted by beliefs and aspirations in adolescence (Schoon, 2001). Educational staff with opportunities to work closely with youth argue the benefits of leveraging beyond general information provision to targeting future aspirations, "densifying" global aspirations through developing specific future selves, and enhancement of procedural knowledge and self-efficacy. Evidence from young adult learners suggests a developmental progression, wherein nascent goals and possible selves evolve within conditions of empowerment-oriented support, progressively undergoing revision, strengthening motivation and effectiveness (Rossiter, 2004; Terry, 2006).

6. Limitations

This study was conducted on cross-sectional data, limiting the ability to infer causal ordering. Findings are also limited by the availability of information regarding socio-demographic characteristics and risk and protective factors within youth's family and school ecology. The study sample is diverse, broadly representative for the Northwest region, includes a higher than typical proportion of students from immigrant families, and is based in communities with socioeconomic variation. In this respect, it provides an urban mix that is becoming increasingly typical. However, there is a lower proportion of some historically under-represented groups, particularly African-American, than in some major urban areas. Although there is little reason to believe that findings regarding the contribution of academic self-concept would inherently vary as a function of region, generalization of findings to other U.S. regions remains a question. Future research, particularly longitudinal, with diverse adolescents, can substantiate and extend these findings. Despite these limitations, our findings have significant implications for school-based indicated and universal intervention efforts to promote academic success.

7. Conclusion

It is heartening evidence that youth self-concept matters when it comes to indicators of academic success. The findings from this study illustrate that youth appraisals of self, parent support, and school contexts are important parts of the picture. Academic self-concept, as a part of individual self-concept, is malleable and responsive to interventions achievable within school settings. Demographic characteristics such as sex, race, and family assets reflect structural challenges that students from disadvantaged backgrounds contend with in the educational system. Although these challenges deserve robust interventions on their own, academic self-concept may provide one valuable tool for practitioners and parents to work with youth. The relative value of the enhancement of academic self-concept is likely to convey greatest benefit to students with fewer supports and greater challenges, where there is more "room" for these individual goals and efforts to exert influence in moving the student toward greater success.

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References

Akiba, M. (2010). What predicts fear of school violence among U.S. adolescents? *Teachers College Record*, *112*(1), 68–102 (http://www.tcrecord.org ID Number: 15769).

Barile, J. P., Donohue, D. K., Anthony, E. R., Baker, A. M., Weaver, S. R., & Henrich, C. C. (2012). Teacher-student relationship climate and school outcomes: Implications for educational policy initiatives. *Journal of Youth and Adolescence*, *41*(3), 256–267. http://dx.doi.org/10.1007/s10964-011-9652-8.

Beal, S., & Crockett, L. (2010). Adolescents' occupational and educational aspirations and expectations: Links to high school activities and adult educational attainment. *Developmental Psychology*, *46*(1), 258–265. http://dx.doi.org/10.1037/a0017416.

Caprara, G. V., Barbaranelli, C., Pastorelli, C., Bandura, A., & Zimbardo, P. G. (2000). Prosocial foundations of children's academic achievement. *Psychological Science*, *11*, 302–306.

Cohen, G. L., Garcia, J., Apfel, N., & Master, A. (2006). Reducing the racial achievement gap: A social-psychological intervention. *Science*, *313*, 1307–1310. http://dx.doi.org/10.1126/science.1128317.

Cohen, G. L., Garcia, J., Purdie-Vaugns, V., Apfel, N., & Brzustoski, P. (2009). Recursive processes in self-affirmation: Intervening to close the minority achievement gap. *Science*, *324*, 400–403.

Cohen, G. L., & Steele, C. M. (2002). A barrier of mistrust: How stereotypes affect cross-race mentoring. In J. Aronson (Ed.), *Improving academic achievement: Impact of psychological factors on education* (pp. 305–331). Oxford, England: Academic Press.

Crissey, S. R. (2009). *Educational attainment in the United States: 2007*. Washington, DC: U. S. Census Bureau.

Cross, S. E., & Markus, H. (1994). Self-schemas, possible selves, and competent performance. *Journal of Educational Psychology*, *86*, 423–438.

Egerter, S., Braveman, P., Sadegh-Nobari, T., Grossman-Kahn, R., & Dekker, M. (2009). *Education matter for health (Issue brief 6)*. Retrieved from Robert Wood Johnson Foundation (website: http://www.rwjf.org/pr/product.jsp?id=48252).

Faas, C., Benson, M. J., & Kaestle, C. E. (2013). Parent resources during adolescence: Effects on education and careers in young adulthood. *Journal of Youth Studies*, *16*(2), 151–171. http://dx.doi.org/10.1080/13676261.2012.704989.

Fiske, S. T., & Taylor, S. E. (2007). *Social cognition*. New York: McGraw Hill.

Fortin, L., Marcotte, D., Thierno, D., Potvin, P., & Royer, E. (2013). A multidimensional model of school dropout from an 8-year longitudinal study in a general high-school population. *European Journal of Psychology of Education*, *28*(2), 563–583. http://dx.doi.org/10.1007/s10212-012 0129-2.

Frey, A., Ruchkin, V., Martin, A., & Schwab-Stone, M. (2009). Adolescents in transition: School and family characteristics in the development of violent behaviors entering high school. *Child Psychiatry and Human Development*, *40*(1), 1–13.

Froiland, J. M., Peterson, A., & Davidson, M. L. (2013). The long-term effects of early parent involvement and parent expectation in the USA. *School Psychology International*, *34*(1), 33–50. http://dx.doi.org/10.1177/0143034312454361.

Gordon, M., & Cui, M. (2012). The effect of school-specific parenting processes on academic achievement in adolescence and young adulthood. *Family Relations*, *728–741*. http://dx.doi.org/10.1111/j.1741-3729.2012.00733.

Green, J., Liem, G. A., Martin, A. J., Colmar, S., Marsh, H. W., & McInerney, D. (2012). Academic motivation, self-concept, engagement, and performance in high school: Key processes from a longitudinal perspective. *Journal of Adolescence*, *35*(5), 1111–1122. http://dx.doi.org/10.1016/j.adolescence.2012.02.016.

Heckhausen, J., Chang, E. S., Greenberger, E., & Chen, C. (2013). Striving for educational and career goals during the transition after high school: What is beneficial? *Journal of Youth and Adolescence*, *42*(9-SI), 1385–1398. http://dx.doi.org/10.1007/s10964-012-9812-5.

Hill, N., Castellino, D., Lansford, J., Nowlin, P., Dodge, K., Bates, J., et al. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development*, *75*(5), 1491–1509.

Hoyle, R., & Sherrill, M. (2006). Future orientation in the self-system: Possible selves, self-regulation and behavior. *Journal of Personality*, *74*, 1673–1696.

Kao, G. (2002). Group images and possible selves among adolescents: Linking stereotypes to expectations by race and ethnicity. *Sociological Forum*, *15*, 407–430.

Kim, Y., & Sherraden, M. (2011). Do parental assets matter for children's educational attainment?: Evidence from mediation tests. *Children and Youth Services Review*, *33*(6), 969–979.

Koestner, R., Lekes, N., Powers, T. A., & Chicoine, E. (2002). Attaining personal goals: Self concordance plus implementation equals success. *Journal of Personality and Social Psychology*, *83*, 231–244.

Liu, K. S., Cheng, Y. Y., Chen, Y. L., & Wu, Y. Y. (2009). Longitudinal effects of educational expectations and achievement attributions on adolescent's academic achievements. *Adolescence*, *44*(176), 911–924.

Ludtke, O., Koller, O., Artelt, C., Stanat, P., & Baumert, J. (2002). Testing models on the genesis of academic self concepts: Findings of the PISA study. *Zeitschrift fur Padagogische Psychologie*, *16*(3–4), 151–164. http://dx.doi.org/10.1024//1010-0652.16.34.151.

Marjoribanks, K. (2005). Family background, academic achievement, and educational aspirations as predictors of Australian young adults' educational attainment. *Developmental Psychology*, *48*(6), 1674–1685.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, *41*, 954–969.

Marsh, H. W., & Craven, R. G. (2006). Reciprocal effects of self-concept and performance from a multidimensional perspective: Beyond seductive pleasure and unidimensional perspectives. *Perspectives on Psychological Science*, *133–163*.

Marsh, H. W., & O'Mara, A. (2008). Reciprocal effects between academic self-concept, self-esteem, achievement, and attainment over seven adolescent years: Unidimensional and multidimentional perspectives of self-concept. *Personality and Social Psychology Bulletin*, *34*, 542–552.

McInerney, D.M. (2003). Motivational goals, self-concept, and sense of self-what predicts academic achievement? Similarities and differences between aboriginal and Anglo Australians in high school settings (pp. 315–346). In H. W. Marsh, R. G. Craven, & D.M. McInerney (Eds.), *International advances in self research*. Charlotte, NC: Information Age Publishing Inc.

Morgan, S. L., Leenman, T. S., Todd, J., & Weeden, K. A. (2013). Occupational plans, beliefs about educational requirements, and patterns of college entry. *Sociology of Education*, *86*(3), 197–217. http://dx.doi.org/10.1177/0038040712456559.

Nurius, P.S., & Macy, R. J. (2012). Cognitive behavioral theory. In K. M. Sowers, & C. N. Dulmus (Eds.), *Comprehensive handbook of social work and social welfare, Volume 2: Human behavior in the social environment* (2nd ed.). New York: Wiley.

Oyserman, D., Bybee, D., & Terry, K. (2002). A possible selves intervention to enhance school involvement. *Journal of Adolescence*, *25*, 313–326.

Oyserman, D., Bybee, D., & Terry, K. (2006). Possible selves and academic outcomes: How and when possible selves impel action. *Journal of Personality and Social Psychology*, *91*.

Oyserman, D., & Fryberg, S. (2006). The possible selves of diverse adolescents: Content and function across gender, race and national origin. In J. Kerpelman, & C. Dunkel (Eds.), *Possible selves: Research, theory, and application (pp. 17–41)* (pp. 188–204). : Nova Publishing.

Pallock, L., & Lamborn, S. (2007). Beyond parenting practices: Extended kinship support and the academic adjustment of African-American and European-American teens. *Journal of Adolescence*, *29*, 813–828.

Pittman, L. D., & Richmond, A. (2007). Academic and psychological functioning in late adolescence: The importance of school belonging. *The Journal of Experimental Education*, *75*(4), 270–290. http://dx.doi.org/10.3200/JEXE.75.4.270-292.

Roeser, Lau (2002). On academic identity formation in middle school settings during early adolescence: A motivational-contextual perspective. In T. Brinthaupt, & R. Lipka (Eds.), *Understanding early adolescent self and identity: applications and interventions (p. 91–133)*. Albany: State University of New York Press.

Rossiter, M. (2004). Educational relationships and possible selves in the adult undergraduate experience. In R. M. Cervero, B. C. Courtenay, M. T. Hixon, & J. S. Valente (Eds.), *The Cyril O. House schoars in adult and continuing education program global research perspectives*, *volume 4*, Athens: University of Georgia.

Rouse, C. E., & Barrow, L. (2006). U.S. elementary and secondary schools: Equalizing opportunity or replicating the status quo? *Future of Children*, *16*(2), 99–123.

Sabates, R., Harris, A., & Staff, J. (2011). Ambition gone awry: The long-term socioeconomic consequences of misaligned and uncertain ambitions in adolescence. *Social Science Quarterly*, *92*(4), 959–977. http://dx.doi.org/10.1111/j.1540-6237.2011.00799.x.

Schoon, I. (2001). Teenage job aspirations and career attainment in adulthood: A seventeen-year follow-up study of teenagers who aspired to become scientists, health professionals, or engineers. *International Journal of Behavioral Development*, *25*, 124–132.

Spera, C., Wentzel, K., & Matto, H. (2009). Parental aspirations for their children's educational attainment: Relations to ethnicity, parental education, children's academic performance, and parental perceptions of school climate. *Journal of Youth and Adolescence*, *38*(8), 1140–1152.

Suhrcke, M., & de Paz Nieves, C. (2011). *The impact of health and health behaviors on educational outcomes in high-income countries: A review of the evidence*. Copenhagen: WHO Regional Office for Europe.

Taylor, S. E., Neter, E., & Wayment, H. A. (1995). Self-evaluation processes. *Personality and Social Psychology Bulletin*, *21*, 1278–1287.

Terry, M. (2006). Making a difference in learners' lives: Results of a study based on adult literacy programs. *Adult Basic Education*, *16*, 3–19.

Tinsley, B., & Beale Spencer, M. (2010). High hope and low regard: the resiliency of adolescents' educational expectations while developing in challenging political contexts. *Research in Human Development*, *7*(3), 183–201. http://dx.doi.org/10.1080/15427609.2010.505780.

Tormala, Z. L., Petty, R. E., & Briñol, P. (2002). Ease of retrieval effects in persuasion: A self-validation analysis. *Personality and Social Psychology Bulletin*, *28*, 1700–1712.

Tynkkynen, L., Tolvanen, A., & Salmela-Aro, K. (2012). Trajectories of educational expectations from adolescence to young adulthood in Finland. *Developmental Psychology*, *48*(6), 1674–1685. http://dx.doi.org/10.1037/a0027245.

Valentine, J. C., DuBois, D. L., & Cooper, H. (2004). The relations between self-beliefs and academic achievement: A systematic review. *Educational Psychologist*, *39*, 111–133.

Vitoroulis, I., Schneider, B., Vasquez, C., Soteras de Toro, M., & Gonzáles, Y. (2012). Perceived parental and peer support in relation to Canadian, Cuban, and Spanish adolescents' valuing of academics and intrinsic academic motivation. *Journal of Cross-Cultural Psychology*, *43*(5), 704–722. http://dx.doi.org/10.1177/0022022111405657.

Witkow, M., & Fuligni, A. (2011). Ethnic and generational differences in the relations between social support and academic achievement across the high school years. *Journal of Social Issues*, *67*(3), 531–552.

Wouters, S., Germeijs, V., Hilde, C., & Verschueren, K. (2011). Academic self-concept in high school: Predictors and effects on adjustment in higher education. *Scandinavian Journal of Psychology*, *52*(6), 586–594. http://dx.doi.org/10.1111/j.1467-9450.2011.00905.

Yeung, A. S., Rhonda, G., Craven, R. G., & Kaur, G. (2012). Mastery goal, value and self-concept: what do they predict? *Educational Research*, *54*(4), 469–485. http://dx.doi.org/10.1080/00131881.2012.734728.

You, S., & Sharkey, J. (2009). Testing a developmental-ecological model of student engagement: A multilevel latent growth curve analysis. *Educational Psychology*, *29*(6), 659–684. http://dx.doi.org/10.1080/01443410903206815.

Zirkel, S. (2002). Is there a place for me? Role models and academic identity among white students and students of color. *Teachers College Record*, *104*, 357–376.