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Learning and Motivational Characteristics of Urban Latino High School Youth

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Abstract

The academic achievement rates of urban Latino students are significantly lower than those of non-minority youth. To date, most of the research on this topic has focused on learning and motivational characteristics of underrepresented youth in elementary and middle school and much less on urban high schools. This study investigated variables related to learning, motivation, and engagement among high school–aged Latino youth. We found that learning and motivational variables were predictive of academic engagement for Latinos, paralleling work with non-minority samples. Motivational variables are seldom given adequate attention when considering interventions for low-achieving students, despite the abundant literature that demonstrates their connection to academic outcomes. Fortunately, the factors examined in the study are amenable to intervention.

Keywords

urban, Latino youth, learning and motivation

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Introduction

Research on motivational variables and academic engagement has come to the forefront as an important body of work (e.g., Fredricks, Blumenfeld, & Paris, 2004; Patrick, Ryan, & Kaplan, 2007; Wentzel & Wigfield, 2009) in understanding students' achievement differences. Studies increasingly have examined these associations with adolescents in urban school settings (Long, Monoi, Harper, Knoblauch, & Murphy, 2007; Oyserman, Bybee, & Terry, 2006; Sánchez, Colon, & Esparza, 2005; Urdan, 2004; Yowell, 2000). Although work in this area is growing, most of its focus is on elementary, middle school, or postsecondary outcomes. Less attention is given to urban Latino students during their secondary school experience. Given the large proportion of urban students who perform poorly in high school, as well as those who ultimately drop out, there is a need for research which may help minimize these patterns.

Latino youth are among those at highest risk for poor educational outcomes (Kena et al., 2014). Some of the early work on ethnic and racial differences in achievement drew on deficit-oriented perspectives which focused on presumed inherent characteristics such as lack of parental motivation, low intelligence, and presumed cultural deficits (Gándara, 1995; Valencia, 2012). In general, work of this type took the position that Latino students and families were at fault for poor academic outcomes.

In contrast, work in the area of learning and motivation, primarily from educational and cognitive psychology, has focused on factors that are amenable to change through instruction and targeted interventions (e.g., Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013; Oyserman & Destin, 2010). In addition, sociocultural theorists have broadened this focus by emphasizing the social and cultural factors which influence learning and achievement, including the impact of social context and social processes in learning (Moll, 2014). This sociocultural perspective has been especially important in shifting thinking about school achievement from focusing on real or presumed deficits to social, cultural, linguistic, and intellectual assets which might be leveraged for academic goals.

When considering group differences in school achievement, focusing on psychological factors which are malleable and on sociocultural characteristics which can be appropriated as assets may result in increased engagement and more effective outcomes than deficit-based approaches of the past. The ultimate goal would be to foster a climate which helps students become resilient, engaged learners who actively use effective learning strategies that help them achieve academically (Fergus & Zimmerman, 2005; Masten, Cutuli, Herbers, & Reed, 2009; Shetgiri et al., 2009). With these considerations in mind, the present study provides an examination of the motivation and family-related characteristics of urban Latino high school students, including how they relate to academic engagement and learning strategies.

Theoretical Framework

This work draws on two overarching theoretical traditions. The first, social-cognitive theory is the foundation of much of the contemporary work on social learning, self-regulation learning strategies, and motivational processes. The second framework is sociocultural theory based on Vygotsky's (1978) early work and later extensions of that work by researchers concerned with social, cultural, and contextual influences on learning and development.

Social-Cognitive Theory

Much of the research in educational psychology and related fields on motivational variables and processes is based on social-cognitive theory (Bandura, 1986). Social-cognitive theory in general posits that learning is mediated through *triadic reciprocality* or the bi-directional and interactive influences of the individual, their behavior, and the environment (Bandura, 1986; Schunk, Pintrich, & Meece, 2008). The early emphasis of social-cognitive theory was on social learning processes, especially on observational or vicarious learning and models. Later work drew on the social-cognitive view that for the individual, learning is affected by one's own thoughts and self-beliefs and their interpretation of the outside world. It is this last aspect of social-cognitive theory that provided impetus to the many motivational theories that define the field.

Social-cognitive theory also emphasizes that learning occurs in a social environment through the use of models and observations. In addition, individuals learn about potential consequences and outcomes of their behaviors by observing models, and base their beliefs about their abilities on these models. People's beliefs and feelings about their capabilities to perform successfully ultimately contribute to their performance in school (Schunk et al., 2008). It is important to note that while most contemporary motivation theories share a connection to social-cognitive underpinnings, there is not a single overarching theory of motivation that covers all the motivational constructs that have been studied. Rather, there are various subtheories of motivation such as expectancy-value theory (Wigfield & Eccles, 1992, 2000) or control value theory (Pekrun, Elliot, & Maier, 2009) that address various specific motivational constructs such as self-efficacy, task value, and attributions. Of importance to the present study is the assumption that these self-beliefs are an important aspect of learning and achievement outcomes.

Sociocultural Approaches to Learning

A sociocultural framework emphasizes the role of social processes in learning, as well as the role of culture, context, and sociocultural factors. Vygotsky believed that knowledge acquisition is the product of sociocultural experiences facilitated by social interactions with capable peers or adults (Ghosh, 2004). Of particular importance to this perspective is the extension of his work into the areas of small learning communities and legitimate peripheral participation, which has been studied by researchers such as Lave and Wenger (1991), Rogoff (2003), and Ghosh (2004). Vygotsky conceptualized human activities and learning as collaborative, guided, and transforming mental functions in cultural contexts (John-Steiner & Mahn, 1996), which develop a child with the support and guidance of experienced people such as adults and peers, help build his or her own cognitive ability to internalize learning in thought or verbal thought, and enable him or her to apply what he or she learns now to solve problems later on (Moll, 1989). The nature of the interactive cognition of a child, in social contexts, increases the reflective and self-regulated thoughts of the child for further learning and transforms socially shared activities and learning to deal with problems in his or her own ability (John-Steiner & Mahn, 1996). To clarify the actual learning zone of a child, Vygotsky (1978) pointed out that learning happens in two dimensions: the actual development level and the potential development level. The distance between the two learning levels is called the zone of proximal development in which the child can learn further with the help of adult guidance or in collaboration with more capable peers.

Vygotsky considered language as a critical means in a child's learning and development. Cultural tools such as writing and speech mediate information to the child through external and practical social activities (Moll, 1989). Cultural tools develop the child's streams of internalized language and conceptual thought (John-Steiner & Mahn, 1996). These means and interactive activities are internalized, transform his or her mental functioning, and then become resources for him or her to perform in an independent activity (John-Steiner & Mahn, 1996). According to Vygotsky's theory, a learner's intellectual ability is developed through the dialectic relations produced by social, practical activities that use cultural tools (Moll, 1989). Thus, when considering psychological processes such as learning and motivation, it is important to keep in mind sociocultural influences that affect and mediate these processes.

Review of Related Literature

Factors That Promote Learning: Motivational Beliefs

Current psychologically based models of academic achievement suggest that an important mechanism for understanding and influencing students' academic engagement and learning is through motivational processes (Wentzel & Wigfield, 2009). Motivation has been defined as "... the process whereby goal-directed activity is instigated and sustained" (Schunk et al., 2008, p. 4). Rooted in the Latin word "to move," motivation generally describes the relationship between the internal processes of beliefs, values, and goals with the external expression of action, such as choice, persistence, and effort (Eccles & Wigfield, 2002; Schunk et al., 2008; Wigfield, Cambria, & Eccles, 2012; Wigfield & Eccles, 2000).

It is important to realize that there is no single overarching theory of motivation, but rather there are various subtheories that focus on various components of motivation such as self-efficacy, interest, goal orientation, attributions, and other variables that in turn affect effort and persistence in learning. These subtheories are loosely linked, however, in the sense that they are based on a social-cognitive perspective, and they focus on a learner's beliefs, values, and goals. These motivational factors have been shown to be related to a wide variety of academic outcomes. There is a significant body of research findings that supports the connection between these motivational variables and the students' use of learning strategies and self-regulatory behavior, as well as their overall and academic achievement (Bandura, 1997; Deci & Ryan, 1985; M. A. Zimmerman, 2000).

One influential motivational perspective, expectancy-value theory, stresses the importance of expectancy (a person's belief about how well he or she will perform on a task in the future) and task value (how valuable is it to engage in a task) as key motivational variables (Wigfield & Cambria, 2010). Value has four components, including importance, utility value (usefulness of doing a particular task), interest, and perceived cost (estimated cost of doing the task instead of spending time and effort in others) in the task (Schunk et al., 2008). In this study, we targeted interest specifically because of its potential salience of secondary-level students and its connections to other motivational variables, engagement, and academic outcomes (Hidi, 2006; Hidi & Renninger, 2006) including reading (Guthrie, McRae, & Klauda, 2007).

As noted earlier, social-cognitive theory posits that individuals learn about potential consequences and outcomes of their behaviors by observing models, and base their beliefs about their abilities on these models. These beliefs and feelings about their capabilities to perform successfully, which can focus on specific tasks or activities or can encompass larger domains such as reading or mathematics, ultimately contribute to their performance in school (Daniels & Arapostathis, 2005; Schunk et al., 2008). At the more general level, self-concept is a general feeling about the self that is perpetuated by self-evaluations, while at the more specific level, self-efficacy is a belief about one's ability to successfully complete a task or activity (Bandura, 1986). These self-related constructs have been studied extensively in the motivation literature, and they share similar features such as arising from experiences and feedback from the environment, a focus on perceived competence, social comparison, self-appraisals, and the prediction of motivation, emotional states, and performance to varying degrees. However, they are distinct, and researchers (e.g., Bong & Clark, 1999; Bong & Skaalvik, 2003; Pajares & Schunk, 2002) have made an effort to clearly define the distinguishing features of the two constructs. While very general beliefs about the self are not strong predictors of performance, domain- and/or task-specific variants of self-beliefs are better in this regard. In this study, we focused on both general domain beliefs (academic self-concept) and specific domain beliefs (e.g., reading and math).

Engagement

Motivation theories have heavily influenced school-based research, because they are found to be associated with what are known as indicators of engagement such as academic effort, choice, and persistence (Esparza & Sánchez, 2008; Patrick et al., 2007). Choice is an important motivational action; motivated students are likely to select a particular task that helps them achieve their goals when they are given multiple choices. In terms of persistence as an action, students do not give up on a task when they encounter obstacles. Motivated students make efforts on challenging tasks. As motivated students choose a goal-directed task to engage themselves, persist, and exert effort, they are likely to learn and perform academically. In other words, choice, effort, and persistence are significant factors that predict academic achievement. These factors can be seen as indicators of engagement, such that motivational beliefs energize engagement which may then be related to increased academic outcomes (Cooper, 2013; Patrick, Ryan, & Kaplan, 2007). Although engagement and motivation are related, they are separate constructs.

In terms of engagement, three aspects of engagement have recently been discussed and examined in the literature—behavioral, affective, and cognitive (Fredricks et al., 2004). Behavioral engagement refers to the nature of the behaviors (positive or negative) and where it occurs (in or out of the classroom). Affective engagement includes feelings, beliefs, and attitudes about school, and includes constructs such as belongingness and value of education (Cooper, 2013; Sosa & Gomez, 2012). Cognitive engagement includes psychological processes of self-regulation, goal orientation, and use of learning strategies, among others (Fredricks, Blumenfeld, Friedel, & Paris, 2005). Motivation is inferred by indicators of engagement as noted, and engagement influenced by motivational beliefs (Pekrun, Frenzel, Goetz, & Perry, 2007). Motivational beliefs that do not result in increased engagement are unlikely to result in achievement differences. In the present study, the three dimensions of engagement (cognitive, behavioral, and affective) were included.

Learning Strategies and Self-Regulated Learning

Research has suggested that self-regulated learning incorporates cognitive, motivational, and metacognitive dimensions (B. J. Zimmerman & Schunk, 2001) and suggests the importance of self-regulatory skills in academic achievement (M. A. Zimmerman, 1990; B. J. Zimmerman & Martinez-Ponz, 1990). Research also indicates that students who self-monitor their learning progress and engagement with tasks generate internal feedback. This internal feedback works to assess possible gaps in performance, and the result may lead to improved learning outcomes (Azevedo & Cromley, 2004; Butler & Winne, 1995; Ley & Young, 2001). Students who are capable of effective learning tend to choose appropriate learning goals, use adaptive knowledge and skills to direct their learning. These students are also able to select effective learning strategies appropriate to the task at hand. In other words, they are able to regulate their learning and take responsibility for the acquisition and maintenance of new skills. Boekaerts's (1997, 1999) model suggests that self-regulated learning is a complex, interactive process involving motivational as well as cognitive self-regulation.

One of the central aspects of self-regulated learning is students' ability to select, combine, and coordinate learning activities (B. J. Zimmerman & Martinez-Ponz, 1990). The cognitive aspects of effective self-regulated learning include elaboration, memorization, and control strategies (Marsh, Hau, Artelt, Baumert, & Peschar, 2006). Memorization is a self-regulated strategy that involves cognitive capacity in processing new information through verbatim representations of knowledge (e.g., the construction, integration, and transfer of information). Elaboration is an effective learning strategy as a student relates new information to contexts that he or she experiences and cognitively questions how it is useful in real-world settings (e.g., actively processing new information in ways that help integrate it with existing knowledge). Control strategies involve metacognitive strategies such as identifying learning goals, formulating control questions, checking information, and adapting learning activities to accomplish tasks (e.g., planning, monitoring, regulation). These self-regulated learning strategies enable students to plan and carry out goal-directed activities, and finally achieve learning outcomes. Because of the centrality of effective strategies in meaningful learning (Mayer, 2011), in this study we included scales that examined students' use of elaboration, memorization, and control strategies.

Sociocultural Factors

While motivational beliefs and learning strategies are important to learning and achievement, they are not acquired in a vacuum (Moll, 2014). They develop in social contexts and are influenced by a variety of sociocultural factors. For example, social partners such as parents and siblings in family, teachers and classmates in schools, neighbors and community members interact with and influence the self of a student: self-systems and self-perceptions. External and environmental influences equally affect student outcomes in addition to the individual processes associated with motivation (e.g., the student himself or herself) and learning and metacognitive strategies. Students' social knowledge is informed by the events in which they have engaged and to which they have been exposed in the past, and predicts how they will act in the future. In addition, individuals are influenced by the explicit instruction from important others such as parents and peers (Burks, Dodge, Price, & Laird, 1999).

Two important contexts to consider are those at school, and in the student's culture and family. Researchers have found that school-related forces, such as the instructional and counseling practices employed by teachers and counselors, and the school climate, have a considerable effect on students' motivation, and thus performance, in their academic work (Eccles & Midgley, 1989). In addition, cultural and family-related values play an integral role in modeling student perceptions and motivation as well, especially in populations of students from minority backgrounds (Alfaro, Umaña-Taylor, & Bámaca, 2006; Esparza & Sánchez, 2008; Plunkett, Henry, Houltberg, Sands, & Abarca-Mortensen, 2008). For example, some studies in the literature on motivation for Latino adolescents have investigated the ways in which identity factors relate to motivation in school. The strength of one's ethnic identification was found to correlate with motivational appraisals, specifically the utility value and intrinsic value of school, self-concept, and sense of belonging. The degree of identifying with a group of people and sharing a common purpose was key, much more than the ethnic label (e.g., "Latino") itself (Fuligni, Witkow, & Garcia, 2005). In a similar study, Abrego (2006) examined the relationship between lack of documentation (of immigration status) and academic achievement in high school. Her findings indicated that these youth faced more difficulties enrolling in college and pursuing a promising career because of their undocumented status. She goes on to suggest that these experiences often result in decreased motivation and increased tendency to drop out.

Aspirations and expectations are also important aspects of identity and development that are heavily influenced by the social context, both for students and for their families. A common belief is that aspirations and expectations are low for Latino students from poor families. There is some evidence, however, that this is not rooted in fact (Valencia, 2012). For example, Goldenberg, Gallimore, Reese, and Garnier (2001) looked at how the aspirations and expectations of immigrant Latino families affect student performance. This study found that low performing students do not come from families with low expectations. In fact, the contrary was found; immigrant families hold high aspirations and expectations for their children's current and future performance in school. In addition, it was found that these beliefs are influenced by their children's performance in school, rather than the beliefs influencing performance (Goldenberg et al., 2001). Similarly, Fuligni (1997) looked at the influence of familial and peer support on Latino high school students' achievement in school. His study showed that contrary to prevailing deficit theories that portray ethnic youth as products of families that do not value education. Students from immigrant families actually receive just as much, if not more, parental and peer support for their academic endeavors when compared with their Caucasian counterparts (Suarez-Orozco & Suarez-Orozco, 1995). In this study, we included measures which attempted to assess some of these sociocultural influences, including educational and occupational aspirations and expectations, and family orientation.

Purpose of the Study and Research Questions

In spite of the importance of motivational processes in learning and achievement, few studies have been conducted that target cognitive, motivational, and sociocultural factors with Latino students in urban schools. Given this gap, this study examined factors that contribute to Latino high school students' resiliency in an urban high school setting by examining factors in each of these three areas.

The current work was designed to empirically evaluate students' academic-related motivational beliefs, educational and occupational aspirations and expectations, and perceived family and school support, and how these are related to their engagement and use of learning strategies. The relationships that were examined in this study are depicted in Figure 1. This study sought to answer the following research question:

> **Research Question 1:** What are the academic-related motivational and family characteristics of urban Latino high school students and how do they relate to academic engagement and learning strategies?

Method

Participants

Our sample consisted of 200 Latino students, who were recruited from one large multi-track high school in Southern California. In a multi-track system, students and teachers are divided into four tracks due to over population, and

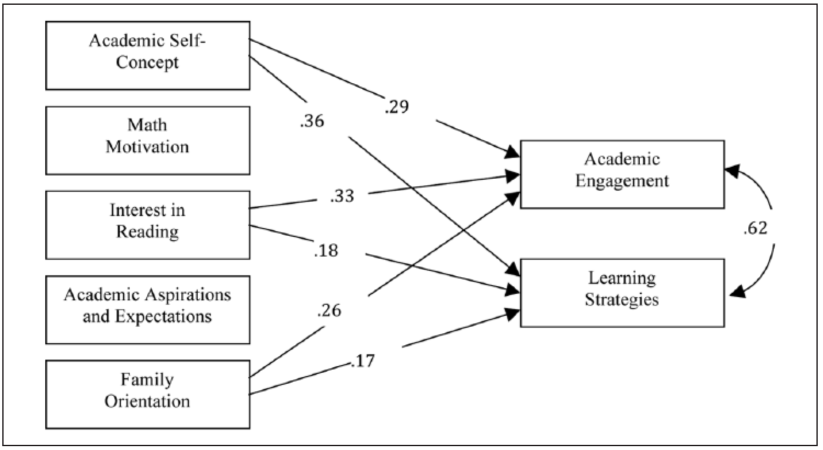

Figure 1. Path model predicting academic engagement and learning strategies.
Note. Standardized parameter estimates are shown. The regression path between the two latent factors is significant. All paths are significant at $p < .05$.

at any one time, three of the four tracks are attending school while the fourth one is on vacation. The sample included 127 (63.5%) females and 73 (36.5%) males. A total of 190 (95.0%) of the respondents self-identified as *Latino*, 5 as *mixed*, and five as *Other.* One hundred forty-seven (73.5%) reported that English was not their first language. It is important to mention that prior to administering the survey to the Latino students, the language and content on the survey were first tested to ensure that appropriate language was used. The survey was piloted with 20 Latino students who were recruited and asked to volunteer. For these 20 students, English was not their first language.

Regarding student status, 57 (28.5%) students self-identified as freshmen, 82 (41.0%) self-identified as sophomores, 32 (16.0%) self-identified as juniors, and 29 (14.5%) self-identified as seniors. Nearly three fourths of the sample indicated that the first language they learned to speak was not English. Nevertheless, the majority of the sample reported that they could understand spoken English (n = 152; 76.0%), speak English (n = 143; 71.5%), read English (n = 137; 68.5%), and write English (n = 134; 67.0%) "very well."

Procedure

Bilingual (English and Spanish) packets, which consisted of a parent letter describing the study and a parent consent form, were distributed to students in 10 homeroom classes during the fall semester. Also, prior to administering the student questionnaire, the authors piloted the questionnaire with 25 bilingual/English Language Learner (ELL) students. ELLs are students whose primary language is not English. Students' responses to the questionnaire gave no indication that reading and completing the questionnaire was problematic. Only students who returned positive parental consent forms signed an assent form and completed the questionnaires, which required roughly 15 to 20 min. The questionnaire consisted of 82 items.

Measures

The current study utilized a set of subscales taken from other studies and surveys that measured motivational and sociocultural factors related to school engagement. These subscales were adopted and modified to address the research question of this study. What follows are the five main subscales with sample items and levels of reliability.

Educational and Occupational Aspirations and Expectations. Consistent with past research (Farmer et al., 1981; Fuligni, 1997; Ibanez, Kuperminc, Jurkovic, & Perilla, 2004; Rosenblum, 1993), educational and occupational aspirations and expectations were each assessed with single items (i.e., "If you were completely free to choose any job, what would you like to do most in the future?" and "If you were free to go as far as you wanted to go in school, what level of education would you like to complete?"). Similarly, Educational and Occupational Expectations (i.e., "What job do you actually expect to end up with in the future?" and "Sometimes what we like to do is not the same as what we expect to do. What level of education do you expect to complete?") were each assessed with single items. The students responded to the two educational items on a 1 (*less than high school graduation*) to 7 (*professional-level degree—PhD, MD, or JD lawyer*) scale. The two occupational items had a free-response format, and we coded the students' responses into categories.

Family Orientation. Urdan's (2004) four-item Family Orientation subscale was used to assess this construct. The students responded to items (e.g., "An important reason that I try to do well in school is to please my parents.") assessing whether they aimed to please their family by doing well in school on a 1 (*not at all true*) to 5 (*very true*) scale. Past research with high school students has shown this subscale to have acceptable levels of reliability ($\alpha = .72$; Urdan, 2004). With the current sample, Cronbach's alpha for this subscale was $\alpha = .71$.

Motivational Beliefs. Eight subscales from Marsh et al.'s (2006) motivational beliefs questionnaire were utilized. The sample items of the subscales included

Control Expectations (e.g., "When I sit myself down to learn something really difficult, I can learn it?"), Self-Concept Reading (e.g., "I get good grades in English?"), Self-Concept Math (e.g., "I have always done well in mathematics?"), Academic Self-Concept (e.g., "I learn things quickly in most school subjects?"), Instrumental Motivation (e.g., "I study to increase my career opportunities?"), Interest in Reading (e.g., "I read in my spare time."), Interest in Math (e.g., "When I do mathematics, I sometimes get totally absorbed?"), and Effort and Persistence (e.g., "When studying, I work as hard as possible?"). The current study used a 4-point Likert-type scale ranging from 1 (*disagree*) to 4 (*agree*). The reliabilities of these eight subscales ranged from α = .59 (control expectations) to α = .90 (self-concept math) in the current study.

Learning Strategies. Three subscales from Marsh et al.'s (2006) learning strategies survey were administered: Elaboration, Memorization, and Control Strategies. The sample items of the each scale are as follows: the *elaboration* (e.g., "When I study, I relate new material to things I have learned in other subjects?"), *memorization* (e.g., "When I study, I memorize all new materials so that I can recite it?"), and *control strategies* (e.g., "When I study, I try to figure out which concepts I still haven't really understood?"). A 4-point Likert-type scale was utilized (1 was *disagree* to 4 *agree*). The Elaboration (α = .81), Memorization (α = .78), and Control Strategies (α = .83) subscales have shown acceptable reliability in past research (Marsh et al., 2006). In the current sample, we found that the subscales had reliability estimates that ranged from α = .75 (Memorization) to α = .78 (Control Strategies).

Academic Engagement. We utilized Fredricks and colleagues' (2005) 19-item School Engagement scale to assess the student's *behavioral* (e.g., "I pay attention in class?"), *emotional* (e.g., "I like being at school?"), and *cognitive* (e.g., "I check my schoolwork for mistakes?") engagement. The students responded to each item on a 1 (*never*) to 5 (*all the time*) Likert-type scale. Prior research with elementary school students has shown Behavioral Engagement (α = .77), Emotional Engagement (α = .82), and Cognitive Engagement (α = .86) subscales to have good reliability (Fredricks et al., 2005). Cronbach's alphas for each subscale in the current sample were α = .74 (behavioral), α = .83 (emotional), and α = .81 (cognitive).

Data Analysis

Descriptive Statistics

Descriptive statistics represent the numbers or information used to summarize and describe data that were collected from a survey. We calculated means and standard deviations of *motivational beliefs, learning strategies, academic engagement*, and *family orientation*. The mean of each measure was calculated by dividing the sum of its all items by the number of the items. Standard deviation measured how far the data points varied from the mean. Percentages and frequencies were calculated based on the students' responses to the items dealing with *educational aspirations and expectations* and *occupational aspirations and expectations.* Frequency was computed by a total number of the student responses in each Likert-type scale point in an observed variable. Percentage was computed by the frequency in each Likert-type scale point divided by the total number of frequency in the observed variable.

Path Analysis

A path analysis is used to compare the strengths of direct and indirect relationships between predictors and outcomes. The examination of the strengths enables us to find out which causal model best fits the correlations between variables within a data set. For the study, we created and tested a conceptual model that specified the relationships among the variables, using a path model approach that predicted the students' *academic engagement* and *learning strategies.* The predictor variables were *academic self-concept, math motivation* (i.e., a composite variable based on the mean of *self-concept math* and *interest in math*; $\alpha = .82$), *interest in reading, academic aspirations and expectations* (i.e., the mean of the two items; $\alpha = .79$), and *family orientation.* The outcome variables included *academic engagement* (i.e., a composite measure based on the three engagement subscales and *effort and persistence*; $\alpha = .81$) and *learning strategies* (i.e., a composite variable based on the mean of the Elaboration, Memorization, and Control Strategies subscales; $\alpha = .84$). Because of the sample size, two separate models were created and tested, one for each outcome variable. The composite measures were created based on the theoretical proximity of the variables and the high correlations among the variables. The small sample size precluded the creation of latent variables. As an alternative, however, the subscales were summed to create a new scale.

Results

The internal reliability coefficient alphas of the subscales with the current sample are shown in Table 1. Alphas above .70 are generally indicative of an acceptable level of reliability for subscales. Based on this cutoff, the Control Expectations, Self-Concept Reading, and Instrumental Motivation subscales did not exhibit acceptable levels of reliability. The remaining subscales showed acceptable to excellent levels of reliability. As the sample size

Table 1. Reliabilities of the Subscales With the Current Sample.

Subscale	α	Number of items in subscale
Family Orientation	.71	4
Control Expectations	.59	5
Self-Concept Reading	.69	3
Self-Concept Math	.90	3
Academic Self-Concept	.72	3
Instrumental Motivation	.68	3
Interest in Reading	.78	3
Interest in Math	.74	3
Effort and Persistence	.76	4
Elaboration	.77	4
Memorization	.75	4
Control Strategies	.78	4
Behavioral Engagement	.74	5
Cognitive Engagement	.81	8
Emotional Engagement	.83	6

increases with the addition of more respondents, the alphas for the subscales with low levels of reliabilities may improve to more acceptable levels.

Table 2 illustrates the correlations among the predictor and outcome variables, means, and standard deviations for the variables investigated in this study. Students reported moderate mean levels of *self-concept math, interest in reading*, and *interest in math* in comparison with their means. However, the results showed that the students had fairly high mean levels of *academic self-concept* as well as *effort and persistence.* In addition, the students reported fairly high mean levels of *learning strategies* (i.e., *elaboration, memorization*, and *control strategies*).

In terms of *academic engagement*, the *behavioral engagement* items were rated higher than the *emotional and cognitive engagement* items. Finally, the mean on the Family Orientation subscale showed that nearly all of the students aimed to please their families by doing well in school.

As Table 3 indicates, students also reported high *educational aspirations.* Slightly more than half of the students (53.6%) indicated that they would like to obtain a professional-level degree, and 87.8% of the sample reported that they would like to obtain at least a bachelor's degree. The students' *academic expectations* were also high. However, their expected levels of education were not as high as their aspirations. The students listed a wide range of careers in response to the questions pertaining to their *occupational aspirations and*

Table 2. Correlations, Means, Standard Deviations, and Range.

	1.	2.	3.	4.	5.	6.	7.
1. Academic self-concept[a]	—						
2. Math motivation[a]	.40*	—					
3. Interest in reading[a]	.35*	.06	—				
4. Academic aspirations and expectations[d]	.22*	.11	.23*	—			
5. Family orientation[c]	.07	.12	.09	.07	—		
6. Academic engagement[b]	.42*	.30*	.46*	.23*	.31*	—	
7. Learning strategies[a]	.43*	.27*	.32*	.18*	.20*	.72*	—
M	3.13	2.57	2.80	5.56	4.14	3.50	3.18
SD	0.57	0.80	0.82	1.37	0.77	0.78	0.59
Range	1-4	1-4	1-4	2-7	2-5	1.4-4	1.3-4
n	200	199	199	198	199	198	198

[a]The Motivational Beliefs and Learning Strategies subscales are measured on a 1 (*disagree*) to 4 (*agree*) scale.
[b]The Academic Engagement subscales are measured on a 1 (*never*) to 5 (*all of the time*) scale.
[c]Family orientation is measured on a 1 (*not at all true*) to 5 (*very true*) scale.
[d]Academic aspirations and expectations are measured on a 1 (*no high school graduation*) to 7 (*professional degree*) scale.
*p < .05.

expectations. The two career areas most reported were health care practitioners and technical occupations, and arts, design, entertainment, sports, and media occupations.

Path Model Predicting Academic Engagement and Learning Strategies

We initially specified the path model with every possible path between each of the predictor variables and the two outcome variables (i.e., 10 total regression paths). Non-significant paths between the predictor and outcome variables have been removed from the model in Figure 1. The fit indices, $\chi^2(4, N = 200) = 7.73$, *ns*, $\chi^2/df = 1.93$, comparative fit index (CFI) = .99, revealed that the theoretical model in Figure 1 was an excellent fit for the data. As shown in Figure 1, students' *academic self-concept, interest in reading*, and *family orientation* were all correlated with their *academic engagement* and *learning strategies*. In other words, students with high levels of *academic self-concept*, for example, also had high levels of *academic engagement* and *learning strategies* even after accounting for the other

Table 3. Academic Aspirations and Expectations.

	Academic aspirations		Academic expectations	
	n	%	*n*	%
No high school graduation	0	0.0	1	0.5
High school diploma	12	6.1	21	10.7
Vocational/technical program	4	2.0	9	4.6
Two-year college degree	8	4.1	23	11.7
Bachelor's degree	30	15.3	*n* = 50	25.5
Master's degree	37	18.9	50	25.5
Professional degree	105	53.6	42	21.4

predictor variables in the model. All of the paths between the predictor and outcome variables were small to moderate in size. In addition, the students' *academic engagement* and *learning strategies* were highly related in the model (r = .62).

The path model based on the survey data provided empirical support that *academic self-concept, interest in reading*, and *family orientation* were significant predictors of the students' *academic engagement* and *learning strategies.* Small but significant correlations were evident between *math motivation* and *academic aspirations and expectations*, and the two dependent variables (i.e., *academic engagement* and *learning strategies*) in the path. These results revealed that students with higher *math motivation* and *academic aspirations and expectations* also had higher *academic engagement* and *learning strategies.* However, these associations did not remain significant after accounting for the effects of the other predictors—*academic self-concept, interest in reading*, and *family orientation.*

Discussion

This study contributes to the growing body of work regarding adolescents' academic motivation, and enriches understanding of the motivational beliefs and needs of Latino high school students in an urban setting. Evidence from large-scale research shows invariance on motivation and learning strategy constructs among a broad range of cultural groups (Marsh et al., 2006; Witkow & Fuligni, 2007). Other studies, however, have reported cross-ethnic differences in these domains (Elliot, Chirkov, Kim, & Sheldon, 2001; Garcia, Yu, & Coppola, 1993). While the learning and motivation literature has increasingly recognized sociocultural factors as important, few studies have explored the robustness of the relationships among these factors for students from different ethnic groups. The sparse existing literature highlights the connections between learning and motivational constructs, which have largely been ignored in intervention and school reform efforts. Early motivational intervention for urban Latino students can prove to be beneficial in helping them meet their personal and academic needs, while increasing their potential for academic engagement and experiencing positive outcomes (Wigfield & Wentzel, 2007). In other words, detecting urban Latino youth's motivational struggles earlier and strengthening a sense of belonging and self-efficacy will reduce drop-out rates and increase levels of academic engagement.

The correlations among the factors in path model provided further evidence for validity. In agreement with prior research (e.g., Goldenberg et al., 2001; Marsh et al., 2006), there were strong associations between the math motivational aspirations/expectations and academic engagement. The positive correlations between these variables could result from students who have positive experiences learning about math are showing more effective learning strategies and feel more confident in continuing to seek out more similar experiences. However, these associations may be weakened if students' performance in other subjects, such as reading, does not increase their self-efficacy and if family does not value these subjects.

This study demonstrates the need for secondary school teachers and counselors to better support urban Latino students by understanding their motivational beliefs, their level of interest in reading, and the dynamics of their home lives. Until recently, little was known about the consequences of these factors in the lives of urban Latino students. This study also documents specific evidence of the importance of teachers and counselors understanding the home lives of urban Latino youth and fostering their self-efficacy and interest in reading. Latino students who lack confidence use less-effective learning strategies; teachers and counselors therefore should evaluate students' current strategies used in class and make suggestions for improvements. Also, Latino students whose experiences at home are not supportive of education have difficulty engaging in class and employing proper learning strategies. Although time and other constraints often prevent teachers and counselors from fully understanding each of their students' home lives, simply asking about the quality of a student's family life can give some indication of whether the student is on track for potential academic difficulties. Because this study revealed that interest in reading influences academic outcomes above and beyond math performance, teachers should consider suggesting reading sources that might pique Latino students' interest outside of the school and encourage them to read more from all types of media (e.g., newspapers and news magazines, as well as Internet sources). In general, teachers can and should use the measures in this study to better understand Latino students and their sociocultural experiences. Such knowledge opens the doors to postsecondary options that may otherwise remain closed for urban groups of Latino students.

This study points to the importance of promoting motivation and school engagement to improve urban Latino youth's learning and academic achievement in school. That is, urban Latino students who are motivated and value learning will be more interested in what they are learning, feel competent, and persist at achieving a set of learning tasks (e.g., math and reading). Also, feeling fully supported by teachers and counselors, these students will be full participants in school life, increase their self-concept, and build resiliency.

Implications for Teachers and Counselors

The present study has several important implications for teachers and counselors. First, teachers can work with Latino youth to help them improve their self-efficacy in school by assigning them manageable tasks that are hard but doable and link the tasks to the students' culture. Second, teachers can integrate career concepts into their curriculum that connects schoolwork with real-life jobs. When students are able to make a connection between schoolwork and careers, their motivation and aspirations improve. Third, counselors can learn more about students' culture and community assets and use them as resources to help Latino students become more resilient when facing challenges. Finally, counselors can monitor students' level of engagement and learning via a personal education plan that leads to careers.

Limitations and Future Directions

The exclusive reliance on self-report measures for this study makes its findings somewhat selective. In addition, the associations among the variables in the study could be inflated due to shared method variance. In other words, students who tend to rate one construct highly may also tend to rate other constructs highly, even in the absence of actual associations between the constructs. This study is also restricted by the fact that three of the subscales did not show adequate levels of reliability and could not be included in the analyses. We will investigate rewording the items that make up these three subscales, so that they are more understandable, in the hope that doing so will improve the reliability of the measures. Another limitation was using Latinos with a mixed status. That is, Latinos who identify with a second ethnic background other than Latino. A final limitation was the small sample size, which prevented us from testing more complex models based on multivariate latent variable approaches. Future analyses with a larger sample could investigate whether the impact of the predictors varied across students with different demographic characteristics.

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