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This dissertation, THE IMPACT OF MOTIVATION, PSYCHOLOGICAL FUNCTIONING, AND PERCEIVED TEACHER SUPPORT ON ACADEMIC ACHIEVEMENT: A MULTILAYERED APPROACH, by ALVA M. ARCHIBALD, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree, Doctor of Philosophy, in the College of Education & Human Development, Georgia State University.

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THE IMPACT OF MOTIVATION, PSYCHOLOGICAL FUNCTIONING, AND PERCEIVED
TEACHER SUPPORT ON ACADEMIC ACHIEVEMENT: A MULTILAYERED APPROACH

by

ALVA M. ARCHIBALD

Under the Direction of Miles A. Irving, Ph.D.

ABSTRACT

THE IMPACT OF MOTIVATION, PSYCHOLOGICAL FUNCTIONING, AND PERCEIVED TEACHER SUPPORT ON ACADEMIC ACHIEVEMENT: A MULTILAYERED APPROACH

by

Alva M. Archibald

While there is extensive research on numerous factors that influence students' academic achievement, there is little research that captures the dimensionality of the learning experience by simultaneously taking into account motivational, psychological and classroom contextual factors. For this study, multiple predictors of academic achievement are assessed for a predominantly Latinx sample. Investigating various configurations of determinants becomes especially important during adolescence, a time when motivation tends to wane with age and grade level (Caprara et al., 2008; Fredricks & Eccles, 2002; Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002; Watt, 2004). An appraisal of the interplay among the sources of influence can be particularly instructive in identifying unique combinations of determinants that contribute to student achievement and may potentially offer a window of opportunity to put empirically-based findings into practice to improve academic outcomes for students. This study examined ethnicity, English Language Learner (ELL) status, academic self-efficacy, cost value, internalizing risk, and perceived teacher support as predictors of academic achievement. Interactions were also assessed. A hierarchical multiple regression was used to examine the predictive value of ethnicity, ELL status, academic self-efficacy, cost value, internalizing risk, and perceived teacher support on academic achievement within a sample of middle school students (N=1,206). Ethnicity, internalizing risk, and perceived teacher support each predicted academic achievement. While ethnicity and internalizing risk negatively predicted academic achievement, teacher support positively predicted achievement. Theoretical and practical implications are discussed.

INDEX WORDS: Hispanic, Latinx, Ethnicity, Motivation, Self-Efficacy, Cost Value, Internalizing Risk, Teacher Support, Achievement

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A Dissertation

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Doctor of Philosophy
in
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in
the Department of Learning Sciences
in
the College of Education &
Human Development
Georgia State University

Atlanta, GA

2020

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DEDICATION

This study is dedicated to my parents, Wrigbie A. and Ideta R. Archibald. You are my examples of commitment, integrity, tenacity, and faith.

To my siblings, Carol, Angela, Amy, Alex, and Wrigbie Jr., your unceasing support never went unnoticed. This study is also dedicated to my ancestors, whose mere existence demands excellence.

“I go forth alone, and stand as ten thousand.” -Maya Angelou

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ABBREVIATIONS

ADHD	Attention Deficit Hyperactivity Disorder
AP	Advanced Placement
BESS	Behavior and Emotional Screening System
CV	Cost Value
ELA	English Language Arts
ELL	English Language Learners
GPA	Grade Point Average
HMR	Hierarchical Multiple Regression
IR	Internalizing Risk
PALS	Patterns of Adaptive Learning Scales
TS	Perceived Teacher Support
SE	Self-Efficacy
STEM	Science Technology Engineering and Math

CHAPTER 1

SOCIAL COGNITIVE THEORY: A REVIEW OF THE LITERATURE

Psychology is an expansive research field that has contributed to our understanding of learning and motivation. In the United States, between the 1930s to the 1950s, Behaviorism dominated the discussion of human learning but fell short of achieving full authority due to a linear conceptualization of human functioning (Bandura, 1999). Although a preeminent model in understanding behavior, the behaviorist theory can be viewed as a reductionist theory because it postulates that human behavior is primarily conditioned and controlled by environmental stimuli with a unidirectional causation tenet (Bandura, 1986). Humans are believed to be influenced by external stimuli, with little to no accounting for self-direction. Subscribing to a more comprehensive model of appraising human behavior, Bandura (1986) and other social cognitive theorists advanced the idea that there is a dynamic process involving personal, environmental, and behavioral determinants of human behavior (Pajares, 2002). The purpose of this review is to examine the contributions made by Bandura's (1986) social cognitive theory, discuss the gaps in the literature that may account for unexplained or mixed findings in the field of motivation and achievement, and propose a new model that attempts to resolve the gaps in the literature. More specifically, a focus on the gaps in the literature that seems to overlook diverse populations, and on the void in the literature relevant to aspects of motivation that challenges one's self-beliefs will be discussed. Because motivation is a main mechanism for regulating behavior, it is imperative to explore not just the aspects of motivation that are promotive of positive outcomes such as achievement, but also those aspects that can thwart growth and success. An understanding on these gaps in the literature and a proposed model to address these voids can

add to the literature of human behavior and learning, but also enhance the research on motivation and ultimately achievement, with an inclusive approach.

The proposed model, which will address some of the gaps in the literature, will expand on Bandura's motivational concept of self-efficacy with the inclusion of a cost value concept (a motivational concept that may impede achievement), grounded within the context of ethnicity. A more enhanced model, compared to Bandura's model, that may capture nuances in the motivational process, is proposed by assessing a wider view of motivation with the inclusion of cost value, and a more complex assessment of individuals, one that includes ethnicity. First, a summary of Bandura's foundational idea of triadic reciprocal causation will be provided, followed by human agency and its four central properties. An in-depth focus on the concept of self-efficacy is followed by a synthesis of both past and current research findings to explore the relationship between self-efficacy and achievement. Finally, directions for future research are proposed that could potentially provide enhanced contributions to the field by expanding the depth and breadth of our knowledge. With the introduction of the proposed model, the importance of the inclusion of cost value and ethnic consideration will be discussed to address the gaps in the current literature related to factors that are often absent in research and can obstruct motivation, and the deliberate acknowledgement of ethnicity.

Guiding Questions

The significance of a theory can increase as it becomes relevant and useful for more diverse populations and under varying conditions. As we review the social cognitive theory, I pose a few guiding questions to critically discuss the present model and to inform the conversation for an enhanced model. I plan to address the following questions:

1. Is social cognitive theory applicable and appropriate for diverse populations?

2. Are there meaningful aspects of human behavior that the social cognitive theory fails to account for in the discussion of motivation?
3. How has current, new, and emerging research and knowledge advanced our understanding of social cognitive theory and motivation?

Social cognitive theory, a framework for analyzing human development, espouses an agentic perspective related to self-development, adaptation, and transformation (Bandura, 2006). It theorizes human motivation, thought, and action (Bandura, 1986). The theory portrays individuals as intentional and meaningful architects of their lives, as well as the products of complex social systems. Aspects of social cognitive theory, particularly modeling and observational learning, have early origins that can be traced back to the work of Miller and Dollard (1941), which offered a theory of social learning. Miller and Dollard (1941) posited four contributors (drives, cues, responses, and rewards) that explain learning. According to Miller and Dollard (1941), learning takes place when individuals have a desire for something (drive), and in the presence of a stimulus (cue), they act (respond) and are then rewarded (reinforcement) for their actions.

One criticism of this theory was that it ignored novel responses and non-reinforced behaviors (Pajares, 2002). Over the years and with several adaptations (Bandura, 1977; Bandura, 1986; Bandura & Walters, 1963), social learning theory evolved into what is now the seminal social cognitive theory, which addressed some of the criticism of social learning theory. The early philosophy behind social cognitive theory was that learning took place through observation of others' behaviors and the consequences of them. According to Wood and Bandura (1989), the four systems that oversee observational learning are attention (selective focus), retention (the transformation of observed information into memory codes and rules), reproduction (action), and motivation (direct, vicarious, and self-produced).

By his own admission, Bandura's early works centering on modeling and observational learning were considered "too limited a vision of human functioning" (Davidson, 2016). The belief that individuals are a product of complex social systems and Bandura's acknowledgment of a need for a more substantial view of human functioning (Davidson, 2016) provide justification for an evolving theory. This new model could better address not only the complexity of social systems and individual functioning but could also improve as our knowledge about social systems, human functioning, and motivation advances. The recognition that the process of self-development, adaptation, and change was a more complex phenomenon spawned Bandura's social cognitive theory and the idea of a triadic reciprocal causation.

Triadic Reciprocal Causation

Triadic reciprocal causation is Bandura's model of causation and the underlying concept of social cognitive theory. Behaviorist theory ascribes human behavior as the result of one-sided determinants, either via the environmental or internally. By contrast, triadic reciprocal causation specifies that behavior is the product of a dynamic interaction between three determinants (Bandura, 1986). Social cognitive theory explains that human behavior, rather than being influenced primarily by environmental stimuli, is affected by personal, behavioral, and environmental determinants through a bidirectional interaction (Figure 1.1). In the triadic reciprocal causation model, the term triadic refers to the three determinants (personal, behavioral, and environmental), while reciprocal refers to the shared interaction between each determinant.

A bidirectional interaction implies that personal, behavioral, and environmental factors can each influence and be influenced by one another at any given time. For example, behavioral factors (e.g., effort) can modify environmental factors (e.g., level of teacher support), which can,

in turn, alter behavioral factors. Given this bidirectional idea, individuals can be both the product and manufacturer of their environments, and ultimately development, adaptation, and transformation occur. Bandura (1989) emphasized that personal, behavioral, and environmental factors can each operate with different levels of influence, depending on the activity, individual, and situation, and they may not occur simultaneously. For instance, when an individual is required to complete a novel task, personal characteristics such as their self-confidence can become the strongest influence. In this case, an individual's self-confidence may be the overriding influence on his or her ability to learn a new task. However, if the task changes to a rote task, environmental determinants (i.e., whether he or she has teacher support) may be the strongest determinant.

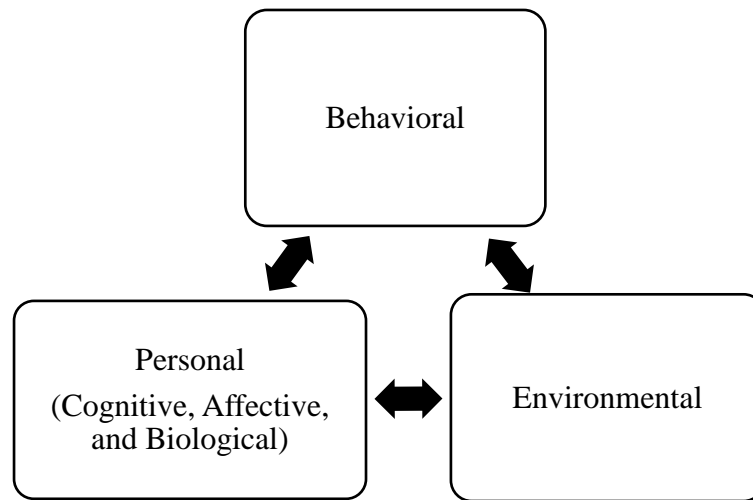


Figure 1.1 Triadic Reciprocal Causation of Social Cognitive Theory

Personal determinants (cognition, emotions, and biology) include expectations, beliefs, emotions, and cognitive abilities. They can also include social status and physical characteristics, because the social environments react to individual social status and roles, as well as physical attributes (i.e., size, race, perceived attractiveness, sex; Bandura, 1986). For example, a governor of a state, who is typically ascribed high social status, and a state employee with lower social

status, would prompt different social-environmental reactions. Environmental determinants, which can include either the physical or social environments as well as social interactions, are explained as the external social context in which behaviors occur.

Environmental influencers transpire through three types of structures: (a) imposed environments, (b) selected environments, and (c) created environments (Bandura, 1997). Imposed environment refers to the physical and sociocultural environment into which an individual is propelled. The individual has little power over the presence of the imposed environment but does have power over how to interpret and respond to it. Aspects of the environment, such as family systems, socioeconomic status, and educational structures, influence the individuals' goals, emotional states, and beliefs (Pajares, 2002). Behaviors include responses to incentives to attain aspirations. Once an individual behaves in a particular manner, he/she interprets the consequences of his/her behavior, which then informs and modifies the environment and personal characteristics. These then subsequently influence future behavior.

Consider a couple who has to relocate to another state because of the career of one of the partners; the new location is an imposed environment. The selected environment constitutes the section of a potential environment that the individual chooses. The couple selects a specific part of the city in which to purchase their home. The created environment denotes social systems, such as a neighborhood running club or church groups, that individuals build to exert control in their lives (Bandura, 1986).

Using the same example of the couple, the partners create a social network of friends within their neighborhood. The three environmental structures represent the varying degrees of adjustment requiring the application of growing levels of individual agency. If we accept Bandura's (1986) theory that behavior is a product of this triadic bidirectional relationship, a

more contemporary model, one that is equipped to handle meaningful and predominant attributes such as race and ethnicity, should attempt to regularly incorporate more of the three determinants into the appraisal of behaviors. The recurrent inclusion of ethnicity, as an example of a personal determinant, acknowledges the value of ethnicity in the development of one's self-beliefs.

Human Agency

A principal aspect of social cognitive theory is human agency, which depicts people as proactive participants in their own development. Bandura (2006) explained, "To be an agent is to influence intentionally one's functioning and life circumstances" (p. 164). The beliefs individuals have about themselves allow them to regulate their thoughts, feelings, and behavior (Bandura, 1986). In other words, human beings have the power to construct, select, and regulate action, and subsequently alter their environments and their futures. Social cognitive theory stipulates that human agency functions through three means. According to Bandura (1999), these three means of human agency can function through an individual's influence on the environment (personal), through another individual (proxy), and through the influence of a group (collective).

Four Central Properties of Human Agency

Bandura (1999, 2006) postulated that there are four central properties of human agency: (a) intentionality, (b) forethought, (c) self-reactiveness, and (d) self-reflectiveness. According to social cognitive theory, *intentionality* is the initial component of human agency. Intentionality is a commitment to a goal and the development of an action plan to engage in a particular action. For instance, a student vowing to sign up for tutoring in hopes of earning a better grade in a class is an example of intentionality. Bandura (1999) defines intentions as "a representation of a future course of action to be performed. It is not simply an expectation or prediction of future actions but a proactive commitment to bringing them about." (p. 6). Therefore, plans of action that are self-motivated are the center of intentionality.

Following a plan of action, an individual may alter his or her plans given *forethought* into what possible paths may occur as a result of one's action. Unlike intentionality, which only involves future goals, *forethought* involves both future goals and the anticipated outcomes of actions. When individuals recognize an association between environmental events and observed consequences, outcome expectations are formed, which lead to foresight that motivates and guides current actions (Bandura, 1986). For instance, a student who intends to attend tutoring sessions learns that students who work with the Monday and Wednesday tutor seem to grasp the classroom content better than those students who work with the Tuesday and Thursday tutor. Consequently, the student decides to attend tutoring on Mondays.

Self-reactiveness is the process that links intentions to plans, and *forethought* to action. The capacity to generate, motivate, and execute behavior are the components of self-reactiveness, which involves self-monitoring, regulation, and corrective responses (Bandura, 1986, 2001). Using the earlier example, the student who attends tutoring on Mondays continues to struggle grasping class content. So, they decide to attend tutoring not only on Mondays but also on Wednesdays as well. Self-reactiveness is the ability to manage and adjust behavior to the demands of a situation to attain selected goals. Thus, it is governed by goals and morals.

The final component of human agency is *self-reflectiveness*. Perhaps one of the most important components of individuals taking a proactive role in their development is their ability to self-evaluate and to have insight into his/her thoughts and behavior (Bandura, 2001). The awareness and complex ability to consider themselves a thinker and learner is a critical component for individuals to assess their motivation, morals, goals, and actions. Again, using the previous example, the student reflects on the decision to go to tutoring on Wednesdays in addition to Mondays and evaluates this decision as a good option to increase the chances of

meeting the goal to pass the class. With an understanding of human agency as individuals having the power to influence their circumstances through their beliefs about themselves, an exploration of their underlying belief system is warranted. This belief mechanism, the foundation in which human agency is nested, can stimulate individuals to construct, select, and regulate action. This is referred to as self-efficacy.

Self-Efficacy

Bandura (1999) asserted that self-efficacy is the most dominant and ubiquitous mechanism through which human agency is executed. According to Bandura (1982), self-efficacy “is concerned with judgments of how well one can execute courses of action required to deal with prospective situations” (p. 122). Self-efficacy is the belief in one’s ability to produce a desired result and succeed based on one’s actions. These self-beliefs include an assessment of abilities to integrate cognitive, social, and behavioral skills into action, which helps individuals regulate their thoughts, feelings, and behavior. Self-efficacy beliefs are important because they are direct determinants of behavior, thoughts, and emotional reactions used in an individual’s evaluation process to achieve (Bandura, 1982). Individuals who are more self-efficacious experience positive effects related to task choice, effort, persistence, and performance (Pajares, 1996; Schunk, 1995). What people believe about their capabilities is the groundwork that shapes behavior and impacts achievement.

Based upon the importance of self-efficacy, it is impossible to ignore the fact that individuals receive sustained, race/ethnicity-based, implicit and explicit messages (positive and negative) that can permeate their self-efficacy beliefs (Siddle Walker, 2000; Venzant Chambers & Tabron, 2013). Thus, the inclusion of ethnicity in a model to help better understand behavior is crucial. Current literature echoes the need not only for a more advanced model, but for a

phenomenological approach to self-efficacy research that incorporates race, ethnicity, or culture into the equation (Chiu & Klassen, 2010; McInerney, 2011; McInerney & Liem 2018; Usher & Pajares, 2008). It is important to note that, while race, ethnicity, and culture are distinct concepts with some overlap, they have at times, unfortunately, been used vaguely and interchangeably in the literature. However, research including any of the three concepts is scarce but important. Usher and Pajares (2008) effectively argue for more culturally sensitive research. The researchers highlight that despite the changing, increasingly diverse cultural background, and findings of self-efficacy differences as a function of culture, Whites have been the subject matter of a preponderance of self-efficacy research. Usher and Pajares (2008) proposed a qualitative measure for assessing self-efficacy in an attempt to better evaluate the circumstances (i.e., personal, social, cultural) in which individuals cognitively process self-efficacy beliefs. Including race, ethnicity, or culture is important because such research may lead to racial/ethnic/culturally sensitive theory and practices that improve the behaviors, motivation, and academic achievement for a large population of individuals.

The substantial role that self-efficacy plays in predicting or influencing behavior overall and in specific domains has been consistently confirmed (Bandura, Caprara, Barbaranelli, Gerbino & Pastorelli, 2003; Caprara, Barbaranelli, Pastorelli, & Cervone, 2004; Dever, 2016). Self-efficacy is influential in predicting achievement in various academic domains and across several levels (Pajares & Urdan, 2006). Higher levels of self-efficacy have also been associated with more frequent progress assessments, increased commitment to tasks, and increased self-regulatory strategies (Schunk & Pajares, 2005). It is important to clarify that this is not based on an individual's actual abilities. Instead it is based on his/her belief in their capabilities that can stimulate behaviors and perhaps explain varying achievement levels among individuals with

comparable abilities. Self-efficacy represents confidence in one's abilities. For instance, a student believes that she possesses specific math abilities to be successful in class, rather than believing that engaging in certain behaviors (studying hard, attending tutoring) will lead to success.

The social cognitive theory concept of self-efficacy mirrors the concept of expectancies in expectancy-value theory (Eccles et al., 1983). Expectancies have been defined as "individuals' beliefs about how well they will do on upcoming tasks, either in the immediate or long-term future" (Eccles & Wigfield, 2002, p. 119). Furthermore, expectancy beliefs are defined as broad beliefs regarding one's ability (Eccles et al., 1983). The importance of self-efficacy is evident from the robust literature, not only in the field of education (Graham & Weiner, 1996), but also in medical and other career fields (Jenkins, 1994; Sojung & Nam-Hyun, 2016; Yu-Hsuan, Yen-Ju, Jo-Ping, & Shu-Yueh, 2018).

Sources of Self-Efficacy

Self-efficacy beliefs are engendered when individuals infer information from four sources: (a) enactive mastery experience, (b) vicarious experience, (c) verbal persuasion, and (d) psychological and affective states. While some sources of self-efficacy have shown more influence than others (Phan & Ngu, 2016), it is not surprising that individuals who draw from multiple databases for self-efficacy information had the more adaptive profiles and embraced a theory of malleable abilities or skills, rather than a theory of fixed abilities. They also had higher self-efficacy beliefs and higher achievement levels than individuals who relied on just one source of information. (Chen & Usher, 2013).

When an individual engages and experiences the consequences of their actions, valuable information is conveyed about their capabilities. *Enactive mastery experience* is an individual's interpretation of his/her first-hand experience, leading to an appraisal of their competencies.

Bandura (1997) declared that enactive mastery experiences are the most impressive source of self-efficacy information because they provide legitimate evidence about whether one can exhibit the behaviors and master the criteria needed to succeed. A longitudinal study of elementary school students provided evidence of the influential power of enactive mastery experience as a source of self-efficacy (Phan & Ngu, 2016). In examining the predictive influence of the four sources on self-efficacy during three different time periods, Phan and Ngu (2016) found that during the first time period, enactive mastery experience and vicarious experience positively influenced self-efficacy.

During the second time period, only enactive mastery experience was significant, and during the third time period, its significance was sustained. Additionally, self-efficacy had a significant impact on academic achievement at all three time periods (Phan & Ngu, 2016). Success in one area can produce more generalized efficacious beliefs, whereas failures undermine self-efficacy (Bandura, 1997). Challenges allow individuals to exercise and learn new skill sets, strengthening their perceptions about their capacities, and subsequently raising their self-efficacy appraisal in the wake of success. However, self-efficacy is not only developed from one's performance but as a product of performance and one's cognitive interpretation of the performance.

Through enactive mastery experience, self-efficacy judgments are modified by cognitive processing of performance information rather than just by the performance itself (Bandura, 1997). This process informs studies where self-efficacy has been found to be a stronger predictor of task choice and achievement than prior achievement (Akar & Altun, 2017; Bandura, Barbaranelli, Caprara, & Pastorelli, 2001). Bandura (1997) asserted that self-efficacy judgment considers a slew of information beyond just one's action on a task. Self-efficacy judgment based

on mastery experiences takes into account preexisting concepts of one's abilities, perceived task difficulty, contextual factors, the quantity of effort expended, and the extent of external support one receives. Thus, performance provides one source through which self-efficacy beliefs are established and altered.

The second source of self-efficacy information is from *vicarious experience*. When there are no clear objective criteria for how well one is performing, people assess their capabilities in comparison with the performance of others. Vicarious experience is the evaluation that comes from observing and comparing the achievement of others when they perform a task (Bandura, 1997). From their observations, people make judgements about whether they have comparable capabilities to master similar tasks. Bandura (1997) states that self-efficacy beliefs are established and increased when people observe others who they deem similar to themselves successfully completing a task. When people observe individuals whom they perceived as like them fail at a task, their self-efficacy belief to master similar tasks is lowered. The key component for vicarious experience is the level of assumed similarity an individual perceives he/she has to the model or the person being observed. Vicarious models are more persuasive when the perceived similarity level is high (Bandura, 1997). In other words, the more I assume an individual is similar to me, the more persuasive this model's successes and failures are in the development of my own self-efficacy beliefs.

Vicarious experiences are important for self-efficacy development, not only for comparative purposes, but when a clear criterion for measuring performance is unavailable. Vicarious experiences become more valuable in the development and modification of self-efficacy beliefs when individuals are uncertain about their abilities or have limited prior experience with the presented tasks (Bandura, 1997). If an individual lacks prior experience and

direct knowledge of their capabilities, social models become more relevant and instructive. Also, when models exhibit persistence, the vicarious experience can boost individuals' self-efficacy beliefs by observing others exhibiting effective coping skills and succeeding (Schunk, 1983, Schunk & Hanson, 1985, 1988). Especially for individuals who have experienced repeated failure, vicarious experiences with models using good coping skills can counter direct experiences and alter negative self-efficacy beliefs (Bandura, 1997).

Verbal persuasion, sometimes described as social persuasion, is another pathway by which self-efficacy beliefs are developed and revised. Verbal persuasion refers to the influence significant others have on the self-efficacy appraisal process by way of the confidence they express in their capabilities (Bandura, 1986). Although verbal persuasion may not have a long-lasting impact on self-efficacy, it can be most beneficial for individuals during the early periods of skill development and early childhood (Bandura, 1986, 1997; Usher & Pajares, 2008). Younger individuals who may not yet be proficient at accurate self-evaluation are likely to rely on others for appraisal messages. Parents, friends, classmates, and teachers can all serve as social persuaders. While empirical studies on the influence of verbal persuasion on self-efficacy have been mixed, verbal persuasion has been found to predict self-efficacy for diverse populations, including Indo-Canadian students from multiple persuasion sources, and girls and African American students when the teacher was the source of the information (Klassen, 2004; Usher & Pajares, 2008). Often the appraisal message comes in the form of evaluative feedback. When individuals are given messages that they are capable of mastering certain tasks, their self-efficacy beliefs are bolstered, and they are likely to put forth greater effort and remain persistent.

The final source of self-efficacy information consists of *psychological and affective states*. Psychological indicators and affective states (e.g., anxiety, depression, heart rate, and

fatigue) are often interpreted as indicators of personal competencies (Schunk & Meece, 2005). Positive affective states enhance self-efficacy judgments, while negative affective states prejudice how people attend to, interpret, cognitively organize, and recall information (Bandura, 1997). Emotional well-being informs self-efficacy beliefs and raises one's confidence, motivation, and performance. This then results in a reciprocal relationship to enhance mood.

According to Bandura (1997), individuals read emotional arousal as indicators of vulnerability to dysfunction and subsequently debilitating performance, which is then interpreted as inefficacy. Emotional arousal has been found to undermine self-efficacy beliefs and subsequently weaken academic performance (Klassen, 2004). Emotional arousal can also be viewed as a stimulant rather than an inhibitor, thus having a different influence on self-efficacy development.

One's perception and interpretation of his/her affective state, more than the actual level of intensity of that affective state, are the factors that influence self-efficacy beliefs. In addition to the interpretation of their affective state, the level of activation of the emotional state, and the complexity of the task ultimately produces the greatest significance in the self-efficacy judgment process. According to Bandura (1997), moderate levels of arousal allow individuals to function at their best because they amplify attentiveness and abet the deployment of skills. Yet the complexity of the task cannot be too simple or too complex. This is because easy tasks are not readily interrupted by emotional arousal, while more complex tasks that rely on more sophisticated cognitive processing are more sensitive to impairment due to emotional arousal.

Bandura (1997) asserted that information is gleaned from different configurations of all four sources and is then weighed and integrated to develop self-efficacy beliefs. The information is weighted based on its unique, novel contribution to the assessment of the participant's

capabilities, filtering out any redundant information. Information that is retained is then utilized to develop self-efficacy beliefs, which then informs behavior. Behavior is regulated by self-efficacy beliefs through four major processes. Cognitive processing, emotional processing, decision/selection, and motivation are the four modalities that govern self-efficacy beliefs in the process of regulating behavior.

Self-Efficacy Regulation

Cognitive Process

When information about self-efficacy is inputted through any of the four sources (i.e., master experience, vicarious experience, verbal persuasion, and psychological and affective states), it becomes instructive when filtered by the cognitive process (Bandura, 1997). The cognitive process allows for information to be chosen, weighted, and integrated so that individuals can make discernments about their self-efficacy. One of the two main functions of the cognitive process is to attend to and select information to utilize in regulating self-efficacy beliefs. The second function, once information is attended to and selected, is to weigh and integrate self-efficacy data from various sources. The impact of self-efficacy beliefs on an individual's functioning through means of cognitive processing has been found to be far-reaching (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Wood & Bandura, 1989; Wood, Bandura, & Bailey, 1990). In general, self-efficacy beliefs can trigger optimistic or pessimistic thinking, which in turn influences behavior. If one espouses to the theory that ability is an acquirable skill, or that ability is an innate aptitude, then this belief determines the manner of influence on the self-regulatory mechanisms governing thinking and performance (Wood & Bandura, 1989). In other words, individuals who espouse to the theory that ability is a learned skill tend to be more optimistic in their thinking compared to an individual who believes that ability is innate, which

thus produces more pessimistic thinking. Furthermore, individuals who are more optimistic, and believe that they can influence outcomes, tend to put forth greater effort.

The more efficacious an individual is and the more they accept abilities as acquirable skills, the more likely the individual is to regulate behaviors to set higher goals, persist in goal commitment, exhibit high levels of resilience when facing challenging tasks, and employ analytical strategies in decision making (Wood & Bandura, 1989; Wood, Bandura, & Bailey, 1990). In a study examining the sources of self-efficacy for middle and high school students, Chen and Usher (2013) found that students who adopted the theory that science ability is pliable, and can be increased through effort, were more likely to pull from multiple sources for self-efficacy information, had higher self-efficacy beliefs, and had higher science achievement. Cognitively, self-efficacy beliefs can positively influence individuals' forethought and goal setting, cognitive resourcefulness, schematic flexibility, and analytical thinking (Bandura, et al, 1996; Bandura & Cervone, 1986; Locke, Frederick, Lee, & Bobko, 1984; Taylor, Locke, Lee, & Gist, 1984; Wood & Bandura, 1989). Thus, the cognitive process plays an instrumental role in when and how an individual's self-efficacy beliefs are processed and functions to affect behavior and performance.

An early criticism of the self-efficacy concept is that it fails to provide an account of the process that encompasses behaving and behavior change (Lee, 1989). Lee (1989) asserts that the strength of self-efficacy is in predicting behavior, but its weakness lies in a description of behavior that does not deepen the appreciation for the behavioral process or provide a model for explaining behavior. This criticism may still be argued today. Let's accept that cognitive process regulates behavior through self-efficacy beliefs by attending, selecting, weighing, and integrating data. According to Bandura (1997) self-efficacy judgments consider, among other factors, task

difficulty, the quantity of effort expended, and the external support given. These specific pieces of information can be at the expense of, and can negatively interfere with and alter, the development of self-efficacy beliefs.

However, because of the scant research on factors that can negatively impact self-efficacy beliefs, an appraisal of factors such as task difficulty and effort expended seems to be minimized, if not ignored, when self-efficacy is examined (Multon, Brown, & Lent, 1991; Stajkovic & Luthans, 1998). This scarcity in the research leaves a gap in the literature that could be informative in the motivation field, one that will be discussed further in the proposed model. If self-efficacy judgments consider factors that negatively influence one's beliefs, and we do not assess those factors that may reduce one's self-efficacy, are we failing to capture a true account of the cognitive process while missing important information? Appraising more of the information (i.e., effort needed to succeed, difficulty of task) that influences the cognitive process, particularly those that more negatively weigh in the formation of self-efficacy beliefs, may be an initial step in bridging the gap between self-efficacy and a richer understanding of the process of explaining behavior (Multon, Brown, & Lent, 1991).

Emotional Process

Self-efficacy beliefs can often regulate behavior by means of one's emotional state. An individual's belief in his/her abilities to manage stressors will influence their level of vulnerability to emotional risks (Bandura et al., 1996). Higher levels of self-efficacy have been found to have a significant relationship with lower depressive symptoms (Bandura, 1999; Bandura et al., 1996). Self-efficacy beliefs regulate how individuals perceive and process stress. Subsequently, they can also affect how individuals perceive their capabilities. Depending on the significance of a task, if an individual has low levels of self-efficacy, his/her anxiety levels and sense of inadequacy are likely to increase, consequently undermining performance (Bandura,

1997). In addition, there is a cyclical relationship with increased emotional risk, where higher levels of depression have been found to weaken an individuals' self-efficacy beliefs (Kavanagh & Bower, 1985).

Selection Process

Self-efficacy is a major influence on the choices people select. Self-efficacy beliefs influence the types of environments, activities, and tasks, and perhaps, the relationships people decide to engage in (Bandura, 1999). Academically, self-efficacy beliefs have been determined to be significant in course selection and task choice. In one occurrence, these beliefs were more important than prior achievement in making important decisions (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Simpkins, Davis-Kean, & Eccles, 2006). In the domain of occupation and career, individuals with high self-efficacy beliefs considered a broader range of career selection opportunities and enhanced their plans for the future (Lent, Brown, & Hackett, 1994; Lent & Hackett, 1987). Consequently, the trajectory of an individual's life's path can be shaped by self-efficacy beliefs through choice processes (Bandura, 1999).

Motivational Process

Perhaps one of the most immediate pathways by which self-efficacy beliefs regulate behavior is through the process of motivation. Through motivation, the impact of self-efficacy beliefs is manifested by the level of effort and perseverance an individual commits to a task. Difficult tasks can make an individual question his/her capability, which can result in reduced efforts and persistence (Wood & Bandura, 1989). Yet high levels of self-efficacy may be most beneficial for learning when the learner faces challenging tasks that would require increased preparation and effort, rather than when pursuing a perceived easy task, where preparation and effort are viewed as unnecessary (Bandura, 1982).

Academic Self-Efficacy and Achievement

The social cognitive theory concept of self-efficacy has been utilized in a plethora of studies, research based on a vast number of topics including academics, work, and health (Graham & Weiner, 1996; Joseph, Ainsworth, Mathis, Hooker, & Keller, 2017; Pajares & Miller, 1994; Wilroy & Turner, 2016). Research on self-efficacy has made a tremendous impact in the educational field. The robust body of research on academic self-efficacy has had theoretical and practical implications for teaching and learning (Alkharusi, Aldhafri, & Alnabhani, 2014; Graham & Weiner, 1996; Kudo & Mori, 2015; Pajares & Johnson, 1994; Pajares, Miller, & Johnson, 1999; Schunk, 1985). As a result, one can easily argue for the positive predictive power of academic self-efficacy on academic behavior and performance.

Specifically, in a study of undergraduate students, Pajares and Miller (1994) found that math self-efficacy was more predictive of problem-solving than math self-concept, the utility of math, and prior math experience. According to Pajares and Miller (1994), self-concept beliefs measures assess more global beliefs (e.g., I am good in math) about self-worth rather than capability and less item/task specific than self-efficacy beliefs (e.g., I can solve this math problem.). Utilizing a social cognitive theory approach to analyzing the predictive value of several variables for learning computer programming, Akar and Altun (2017) identified self-efficacy as a significant predictor, in one instance outranking many other variables (e.g., spatial memory, mental orientation, verbal memory), while prior knowledge and gender were not significant. Academic self-efficacy also served as a mediator for gender and prior experience. The predictive power of academic self-efficacy has also been found across grade levels (Pajares & Johnson, 1994; Pajares, Miller, & Johnson, 1999). In a study of students with and without the diagnosis of Attention Deficit Hyperactivity Disorder (ADHD), academic self-efficacy was

associated with higher academic achievement for both groups (Martin, Burns, & Collie, 2017). However, the positive outcomes were significantly greater for students with ADHD, indicating a potential protective effect of self-efficacy among students with special learning needs.

The scope of the methods through which academic self-efficacy beliefs influence achievement is not yet fully known, which is why self-efficacy continues to be an evolving research field. Illustrating its powerful predictive role, Galyon, Blondin, Yaw, Nalls, and Williams (2012) found that regardless of the level of academic self-efficacy (low, medium, and high), it significantly predicted students' class participation and performance on tests. What is known from the research is that the role that academic self-efficacy plays in achievement is complex and far-reaching (Caprara, Barbaranelli, Pastorelli, & Cervone, 2004; Hoigaard, Kovac, Overby, & Haugen, 2014; Honicke & Broadbent, 2016; Locke, Frederick, Lee, & Bobko 1984).

Self-efficacy beliefs have also been found to be related to social-emotional factors that, in turn, have an impact on academic outcomes (Bandura et al. 1996, 1999; Caprara et al., 2004; Zychinski & Polo, 2012). With an appreciation of how emotional states can adversely compromise academic outcomes, the role of self-efficacy beliefs becomes crucial in any discussion about improving student achievement. Self-efficacy has been found to predict positive social adjustment and higher academic achievement for adolescents (Caprara et al., 2004). Adolescents who perceived that they were more capable of regulating their behaviors while enduring a period of peer pressure achieved better grades, reported fewer behavioral problems, and gained more popularity among their peers. Caprara et al. (2004) reported that, specifically for girls, higher self-efficacy levels predicted lower levels of externalizing problems a couple of years later. Externalizing problems consist of the development of overt behavioral problems that can include conduct problems, hyperactivity, and aggression (Dever, 2016).

The influence of self-efficacy beliefs has also been documented for students who internalize problems. Internalizing problems include emotional difficulties that are typically directed inwardly, which signify a disturbance in managing emotions and coping with stress. They are often manifested by anxiety, depression, or somatic complaints. In a large-scale study of predominantly African American high school students, academic self-efficacy was a significant predictor of both externalizing and internalizing problems (Rocchino, Dever, Telesford, & Fletcher, 2017). Rocchino et al. (2017) found that while gender was only a predictor of internalizing problems, higher levels of academic self-efficacy were associated with lower levels of both internalizing and externalizing problems. These findings are important because self-efficacy may prove to be not only an important tool in identifying students who are at-risk for emotional problems but may also be an invaluable resource in the discussion about attending to the needs of these students. The significance of self-efficacy in improving student achievement is heightened when one takes into consideration that the adolescent prevalence rate for anxiety is approximately 32%, while rates for major depressive disorder and dysthymia are as high as 11.7% for adolescents ages 13 to 18 (Merikangas et al., 2010).

Zychinski and Polo (2012) found that academic self-efficacy mediated the negative relationship between depression and academic performance (i.e., grades and standardized test scores) specifically for Latinx children and adolescents. In another instance, children who believed in their capabilities to master coursework in diverse subject domains (e.g., math, science, reading, and writing) and interpersonal relationships, demonstrated more prosocial behavior, higher academic achievement, lower problem behaviors, and lower levels of depression across several time periods (i.e., time of the study, one year, and two years later) (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999). In other words, children who perceived that

they were academically and socially inefficacious were more likely to be depressed both directly and indirectly. Indirectly, lower levels of academic self-efficacy predicted higher levels of depression two years later through the mediating effect of academic achievement, prosocial behavior, and behavioral problems. One of the most important findings of the work by Bandura et al. (1999) related to emotions was that academic self-efficacy accounted for depression at the time of the study and one year later, rather than actual academic achievement.

Academic self-efficacy has also been associated with anxiety (Roick & Ringeisen, 2017). College students who perceived higher levels of academic self-efficacy had higher achievement and lower test anxiety during two time periods (i.e., before and after an examination). These findings provide evidence not only of the impact of self-efficacy beliefs on diverse outcomes but also of their long-term influence. These findings become even more relevant in light of the prevalence (Center for Disease Control and Prevention, 2013; Merikangas et al., 2010) and impairment that both externalizing and internalizing problems have on the overall functioning of children (Frojd et al., 2008; Kendall & Brady, 1995).

Students at risk for internalizing problems have needs which can be overlooked, while symptoms and prevalence rates often increase with age (Pratt & Brody, 2014). Negative risk has been associated with even moderated symptomology (Kendall & Brady, 1995). Therefore, it is necessary to fully understand the relationship between academic self-efficacy and emotional vulnerability because of the detrimental impact on academic indicators of success. Depression has been shown to interrupt cognitive processing and learning, and is related to a decline in GPA (Kirkcaldy & Siefen, 1998; Kovacs & Goldston, 1991). The heightened emotional symptoms of internalizing problems can interfere with students' motivational systems. More specifically, depressive symptoms have been negatively associated with academic motivation, which can

adversely affect an adolescent's academic self-efficacy beliefs, task choice, persistence, and overall performance (Sideridis, 2005). Depression can also impede the self-regulation of learning and performance, and executive functioning processes, and specifically for adolescents is predictive of school dropout (Quiroga, Janosz, Bisset, & Morin, 2013).

Given the early onset and pervasiveness of internalizing problems, and its severe impact on broad aspects of the well-being of children and adolescents, exploring the relationship between academic self-efficacy in the equation of internalizing problems and academic outcomes, particularly a moderating role, is important to ascertain any potential protective factors. Overall, self-efficacy has been found to be a strong predictor of behavior, a mediator between abilities and performance across various grade levels, including for diverse student populations (Graham & Weiner, 1996; Martin et al., 2017; Pajares & Johnson, 1994; Pajares, Miller, & Johnson, 1999; Schunk, 1985). While self-efficacy is a strong predictor of behavior, more needs to be examined to help explain substantial variance in performance and behavior that is unaccounted for by self-efficacy (Multon, Brown, & Lent, 1991). Also, it is important to uncover other determinants that may operate under conditions when self-efficacy no longer functions as a proximal and distal predictor of academic performance (Putwain, Sander, & Larkin, 2013).

Understanding why individuals resist engaging in a task and perform poorly at the task, despite high levels of academic self-efficacy, adds another facet to motivational research that is unexplained by academic self-efficacy. Furthermore, the acknowledgment that motivation decreases as students transition to middle and high school calls for a more comprehensive theory that better captures the underpinnings of motivation beyond academic self-efficacy.

A New Model

Bandura's social cognitive theory has received widespread acceptance, not only because of the robust empirical evidence that supports its legitimacy and significance, but also because it has been readily applicable to diverse research fields. More specifically, one important strength of the model is the concept of academic self-efficacy which has contributed greatly to our understanding of motivation, and the relationship between motivation and achievement (Bandura et al., 2001; Pajares & Johnson, 1994; Pajares & Miller, 1994; Simpkins, Davis-Kean, & Eccles, 2006). An individual's beliefs about his or her abilities to succeed works in tandem with his or her beliefs about the benefits of engaging in a task, or in other words, the task value (Eccles et al., 1983). Thus, a more complex model for appraising student motivation is proposed, a model that takes into account the role of self-efficacy and value, nested in the context of ethnicity. A simultaneous emphasis on these constructs can offer a realistic view of the phenomena of motivation that is multidimensional and can perhaps explain unaccounted gradations in motivation, behaviors, and achievement. Deconstructing motivation into self-efficacy beliefs and value beliefs through the lens of ethnicity advances the conversation from a one-dimensional model to one that shows appreciation for personal abilities, task worth, and inherent characteristics.

Value Construct

Eccles et al. (1983) defined values as specific beliefs regarding the benefits of engaging and succeeding in a task. There is a recognition that motivation is ignited by more than a conviction of confidence in one's abilities, but also an expectation of immediate or future value. Unlike Bandura's focus on proximal goals (1986), distal goals are also applicable to the discussion of academic self-efficacy beliefs (Eccles et al., 1983). The concept of academic self-efficacy is perhaps strengthened with the concept of value because it allows for the use of a

broader lens through which one's capabilities, and the assessment of behavior change and academic achievement, are appraised. In the process of judging how well one can execute an action to succeed (Bandura, 1982), the value of engaging in the task in the first place is an important aspect that should not be ignored.

Individuals with high levels of academic self-efficacy may not be motivated to engage in an activity if it does not have meaningful value to them (Eccles & Wigfield, 1995). Considering that the development of self-efficacy judgments takes into account perceived task difficulty, the quantity of effort expended, and the extent of external support, among other factors, it is logical to pair self-efficacy with a value construct. By taking into consideration an individuals' beliefs about the worth of a task, while acknowledging that self-efficacy beliefs are not developed in a vacuum, a more in-depth and expansive view of one's judgments is likely to be ascertained. Eccles et al. (1983) established a comprehensive and well-defined value concept.

Historically, a base of research provides evidence that when individuals value a task, they tend to engage more, persist longer, and achieve at a higher level (Battle, 1965, 1966). The contribution of task value, coupled with the positive effects of self-efficacy (Pajares, 1996; Schunk, 1995), provides a strong argument for the potential additive effects of a model that conceptualizes the interactions between academic self-efficacy and value. Subsequently, additional implications are developed to increase student achievement. An important study for this discussion is the work of Lee (2015), who examined the academic self-efficacy and task values (attainment, intrinsic, and utility) of undergraduate students. While other researchers have assumed stability for academic self-efficacy and task value (Bong, 2001; Ding, Sun, & Chen, 2013), Lee (2015) found that academic self-efficacy for both course content and online technology fluctuated. However, task values were stable during the semester when measured at

three-time intervals for most subject areas. During those times when task value was unstable, the learning approach was different – one that offered students a more passive experience, rather than an engaging experience such as interviewing an individual.

Values have been organized into four important categories: (a) attainment value, (b) intrinsic/interest value, (c) utility value, and (d) cost value (Wigfield & Eccles, 1992). All four constructs are factors that influence one's beliefs about the advantages of engaging in a task. Attainment value refers to the individual importance of performing competently on a task, contingent on the perception of the task features which are used to affirm self-beliefs and characteristics. It answers the question, how does doing well on this task improve self-worth and identity? While attainment value may be viewed as a component related to an individual's capability on a task, intrinsic value is related to the satisfaction achieved by completing the task. Intrinsic value, sometimes referred to as interest value, describes the innate, direct gratification an individual gains from engaging in a task (Eccles et al., 1983). Utility value captures the usefulness of a task and can be characterized as a form of extrinsic motivation (Wigfield & Eccles 1992). Attainment, interest, and utility values are associated with fostering an individual's beliefs about a task. These have all been positively correlated with favorable student outcomes.

Cost value, in contrast, can be viewed as a motivational component that impugns an individual's beliefs about a task. Consequently, it has been negatively associated with academic achievement. Eccles and Wigfield (2002) defined cost value as “negative aspects of engaging in the task, such as performance anxiety and fear of both failure and success, as well as the amount of effort needed to succeed and the lost opportunities that result from making one choice rather than another” (p. 120). Because cost value provides distinct and important information about the motivational process, its inclusion in a new model is important. An assessment of motivation that

includes academic self-efficacy without the inclusion of cost value would be ignoring an important aspect of the equation that would otherwise explain unique changes in the predictive value of motivation. Similarly, recognizing the potential contribution of cost value, Barron and Hulleman (2014) proposed an expectancy-value-cost model of motivation. Since cost value is the only value component that takes into account factors that impede motivation, it is critical that this be included in the appraisal of motivation. Failure to account for cost value in the motivational process would present a deficient interpretation of students' profiles.

The deliberate and consistent inclusion of value concepts, particularly cost value, in a motivational model with academic self-efficacy, has implications for advancing our appreciation of academic self-efficacy. Equally important, these value concepts have the possibility of strengthening the appraisal of the achievement process by providing unique information regarding factors that influence motivation, behavior, and achievement. Attainment, intrinsic, and utility values have regularly been included and easily identified in research related to self-efficacy, highlighting the rarity of cost value in research and the gap in the literature (Wigfield & Cambria, 2010). It is important that future research consistently include cost value because it assess an opposing aspect of values compared to the three remaining value constructs, which may provide distinct findings and implications regarding motivation and achievement that may never have been discovered if it was not included. Whereas an ideal model would include all aspects of value, and it is what is advocated for, cost value is underscored because it has far too long been excluded. While a model constructed on both academic self-efficacy and cost value has great promise in predicting achievement outcomes, it still does not go far enough. A model becomes even more relevant and advantageous when it can explain behaviors for diverse populations. Particularly when we know historically that there are racial and ethnic disparities for

academic outcomes, even in the presence of high levels of motivation, I propose that an academic self-efficacy and cost value model must take into account ethnic differences to cement this model.

Ethnic Considerations

There is an imbalance in the motivation literature exploring ethnic, or even racial or cultural differences in the relationship between academic self-efficacy and student achievement. Far less literature explores the relationship between cost value and ethnicity. While the expectancy-value model has been used to compare motivation for a variety of ethnic groups, cost value was operationalized in terms of time and effort cost, while ignoring the psychological costs related to ethnic, social, and cultural issues (Andersen & Ward, 2013; Lewis & Connell, 2005; Riegle-Crumb, Moore, & Ramos-Wada, 2013).

Given that the U.S. population is projected to become more racially and ethnically pluralistic (Vespa, Armstrong, & Medina 2018), research focusing on distinct ethnic populations is critical for understanding discrete relationships between motivation and achievement for various populations. Furthermore, there are long-standing ethnic achievement gaps between Whites and other ethnic groups (e.g., African Americans and Latinxs), with a majority of some populations performing below the proficiency level for major academic areas (National Center for Educational Statistics, 2018). The achievement disparity between whites and other ethnic groups (e.g., Blacks and Latinxs) underscores the need for a better understanding of the learning and motivational process for these populations.

Additionally, the cultural and educational experiences of non-white populations represent unique but important factors that inform students' academic self-efficacy and cost value beliefs. For example, African American students must grapple with conflicting cultural messages about what it means to do well in school and yet not lose one's identity vs. larger societal messages.

They must learn how to successfully negotiate between two worlds. This challenge becomes more relevant for students during their adolescent years when they deal with issues of self-identity. Also, cost value is culturally, socially, and economically embedded, and thus may provide a way to examine motivation for students of different ethnicities in a more profound and sincere manner. Recognizing this network may have practical implications for increasing academic outcomes. Unfortunately, in academic self-efficacy and cost value research, minority groups have been gravely underrepresented. Research on diverse populations should not be incidental to the dominant group, because doing so negates the discovery of significant distinctions that may lead to effective interventions for increasing academic outcomes.

The proposed academic self-efficacy and cost value model that includes a focus on ethnicity has implications for identifying unique and multiple barriers to educational attainment and increasing academic achievements. Potentially, an inclusion of ethnicity in the motivational discussion can also have behavioral and emotional benefits (Caprara, Barbaranelli, Pastorelli, & Cervone, 2004; Hampton & Mason, 2003; Hoigaard, Kovac, Overby, & Haugen 2015). Brubacher, McMahon, and Keys (2018) presented significant findings about the scarce research related to diverse populations with an examination of academic self-efficacy, social self-efficacy, anxiety, and aggression for both Latinx and African American adolescents. Brubacher et al. (2018) found that higher levels of academic self-efficacy and social self-efficacy were associated with less anxiety. They also found that students with higher academic self-efficacy and lower levels of academic achievement experienced higher levels of aggression.

These findings are important because they shed light on the relationship between academic self-efficacy and students' behavior, and perhaps contribute preliminary information to the conversation about the disproportionality of minority students referred for disciplinary

problems and those given harsher consequences (Bradshaw, Mitchell, O'Brennan & Leaf, 2010; Skiba, et al., 2011). It is yet unknown what information can be gleaned from academic self-efficacy and cost value theory research and the relationship to ethnicity and behavior.

Particularly for Blacks and Latinxs, who are often the subjects of negative academic outcomes, research with a more comprehensive approach may have implications that change the practices and policies that breed the disproportionality of behavioral referrals for race or ethnicity, to a focus on improving academic achievement for these students.

Currently, in the U.S., the Latinx population is the second largest racial group, second only to Whites (Humes, Jones, & Ramirez, 2011). Yet there is a paucity of motivational research for Latinx students, especially related to academic self-efficacy and cost value. The U.S. Census Bureau (Vespa, Armstrong, & Medina, 2018) projected that the Latinx population will be the third fastest-growing racial group, almost doubling within the next four decades, while the non-Latinx White population is projected to shrink. While they represent one of the fastest-growing racial groups, Latinx students are more vulnerable on a number of academic indicators (lower achievement) than their White and Asian counterparts. They also have more academic difficulties than Whites, Asians, and Blacks on other academic variables, such as an increase in high school dropout rates, and lower rates of obtaining an associate's and a bachelor's degree or higher (National Center for Educational Statistics, 2018). Assessing the relationship between academic self-efficacy, cost value, and achievement for Latinx students is of particular importance given: 1) the rapidly increasing Latinx population growth, 2) the long-standing achievement gap compared to students from other racial groups, and 3) the poor long-term academic outcomes.

While there is clear evidence that supports the positive relationship between academic self-efficacy, achievement, and behavior (Alkharusi et al., 2014; Galyon et al., 2012; Kudo & Mori, 2015; Schunk & Pajares, 2009), there is value in further exploring and understanding the role that ethnicity and culture play in the equation. A recent study underscores the importance of academic self-efficacy for Latinx students on a number of academic outcomes (Niehaus, Rudasill, & Adelson, 2012). In a longitudinal study of middle school Latinx students, Niehaus and colleagues (2012) found that not only was academic self-efficacy a positive predictor of achievement but it also significantly contributed to students' increased school attendance. An equally important finding was that the students' academic self-efficacy was stable over time. The positive influence that academic self-efficacy had on academic achievement and attendance addresses two major areas where Latinx students are at risk. Still other studies highlight how culture can influence academic self-efficacy beliefs.

In a predominantly Latinx sample, Kelley, Siwatu, Tost, and Martinez (2015) found that culturally sensitive instruction was related to increased academic self-efficacy beliefs in reading. Culturally responsive or sensitive instruction refers to pedagogy that incorporates the culture of students into subject-matter content and allows opportunities for the students to become more knowledgeable, not only about their culture but about the cultures of other students (Hood, 1998). In the context of the positive relationship between academic self-efficacy and achievement, these findings have important implications for using culturally responsive pedagogy to improve reading achievement for Latinx students. In fact, earlier research by Chun and Dickson (2011) found that, while culturally responsive instruction had a negative or no direct effect on student achievement, academic self-efficacy mediated the relationship between culturally responsive instruction and achievement in English, math, and science for Latinx

students. On a larger scale, one can argue for the importance of culturally responsive teaching strategies not only for increasing academic self-efficacy, but to improve student achievement in various content areas. These strategies may also be used as a framework for accurate student evaluations through culturally responsive, performance-based assessment (Hood, 1998). These studies highlight the importance of research on academic self-efficacy within the context of ethnicity and culture, but also the interconnected relationships for Latinx students.

In theory, ethnicity and culture permeate all aspects of Bandura's (1986) triadic reciprocal causation determinants (i.e., personal, behavioral, and environmental), but it seems to be the forgotten component in the research. Interpersonal relationships are important in the Latinx culture, and family and peer socialization are methods used to transfer important cultural beliefs, traditions, and norms. When family ethnic socialization was taken into account, academic self-efficacy mediated its relationship with academic outcomes for Latinx adolescents (McDermott, Umaña-Taylor, & Martinez-Fuentes, 2018). In other words, the more Latinx families taught their children about their traditions, values, or ethnic group, the higher the students' GPAs were via their academic self-efficacy beliefs. Counterintuitively, results also noted that family ethnic socialization had a negative direct effect on students' GPA. Thus, academic self-efficacy positively changes the influence of family ethnic socialization on the GPA for Latinx adolescents.

Interpersonal relationships, outside of the family structure, have also been shown to inform academic self-efficacy beliefs for Latinx students. Within the context of the classroom, teacher-student relationships represent another influential interpersonal relationship. When the perceptions of high school Latinx students were that their teacher cared for and respected them,

their math self-efficacy significantly increased (Riconscente, 2014). Also, the students' math self-efficacy and beliefs about their teacher caring positively predicted math achievement.

While the research, as mentioned earlier, has provided valuable findings about academic self-efficacy and achievement for Latinx students, the body of literature for Latinxs and other non-White racial groups is meager. A theoretical model of academic self-efficacy and cost value within a standard context that respects ethnic distinctiveness can highlight nuances in the role that motivation plays for different ethnic groups. Subsequently, research focused on specific groups of students can lead to more coordinated efforts to intervene and change the academic trajectory for those populations of students who have, for far too long, been the subject of sub-par academic outcomes.

Discussion

Bandura's (1986) social cognitive theory is a well-referenced theory that has informed current theory and practice. The social cognitive theory has made significant contributions in the field of motivation, self-efficacy, and human agency. It has ushered in an alternative approach to examining learning – one that is dynamic and takes into account a variety of determinants. With the introduction of the triadic reciprocal causation model, which emphasizes bidirectional influences among personal, environmental, and behavioral determinants, Bandura (1986) has offered a theory of motivation which has extended into several areas including education, health, and vocation (Graham & Weiner, 1996; Joseph et al., 2017; Pajares & Miller, 1994; Wilroy & Turner, 2016). Social cognitive theory has made perhaps the most significant impact in motivation and learning through research findings related to self-efficacy. What people believe about their capabilities is the groundwork that shapes behavior and impacts achievement.

Research on academic self-efficacy has provided a wealth of evidence supporting its relationship to extensive positive academic outcomes (Pajares, 1996; Schunk, 1995), yet there are important aspects of motivation and achievement that are unanswered and require a more realistic account of the process of one's assessment of beliefs about ability. A new model of motivation is suggested that encompasses not only academic self-efficacy beliefs but cost value and ethnicity. The proposed model, similar to previous models such as Bandura's (1986) and Eccles' et al (1983), focuses on self-efficacy and values, but contributes to the gap in the literature with the regular inclusion of cost value, and the appreciation for the role of ethnicity. An accurate appraisal of one's confidence in their abilities to succeed at a task also weighs the beliefs about the cost value of engaging in a task, along with the three other value constructs, and is interpreted within the context of an individual's ethnicity.

Adopting a broader model of motivation, that includes academic self-efficacy beliefs and ethnicity, coupled with a belief about the cost of engaging in a task or the value of the task, may provide in-depth understanding regarding motivation, learning, and achievement. This expansion of the model may have been disregarded by an exclusive focus on academic self-efficacy. While there was a plethora of knowledge gained from academic self-efficacy research, this research had too little focus on diverse ethnic groups. The substantial body of research generally revealed that academic self-efficacy positively contributed to student achievement (Honicke & Broadbent, 2016; Martin et al., 2017; Pajares & Johnson, 1994). Therefore, it is especially important to investigate ways of improving the academic outcomes for populations of students who have been underperforming and lagging academically. Furthermore, additional research about specific ethnic groups may detect subtle differences related to academic self-efficacy and ascertain further factors that promote academic success.

This type of research may consequently provide uncharted preventive and intervention strategies unique to distinct ethnic groups. Self-efficacy beliefs are determinants of behaviors, thoughts, and emotions (Bandura, 1982), and directly influence task choice, effort, persistence, and performance (Pajares, 1996; Schunk, 1995). Their wide-spread influence highlights the limitations of a model, utilizing only the concept of academic self-efficacy, which fails to explain the profile of individuals who perform poorly despite high levels of academic self-efficacy. The proposed academic self-efficacy, cost value, and ethnicity model of motivation may capture aspects of learning and achievement that can go undetected by a less extensive model of motivation. The benefits of this new model may lead to new research questions that explore differences in achievement for students despite having similar levels of self-efficacy and values. This new model can allow greater specificity in the predictive value of academic achievement and factors that mediate or moderate various factors. Practical benefits of using this self-efficacy, cost value, and ethnicity model may lead to targeted instruction and intervention for individuals. For underrepresented racial populations, important implications for motivation, learning, shaping behavior, and ultimately, achievement may be inferred from an even more comprehensive model of academic self-efficacy, value concepts, and ethnicity. These implications may lead to secondary and tertiary benefits that change the trajectory of the emotional, mental, economic well-being, and future careers for a large number of individuals.

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CHAPTER 2

THE IMPACT OF MOTIVATION, PSYCHOLOGICAL FUNCTIONING, AND PERCEIVED TEACHER SUPPORT ON ACADEMIC ACHIEVEMENT: A MULTILAYERED APPROACH

Improving academic achievement for students is a long-standing issue facing researchers and educators on a theoretical and practical level that has immense ramifications. Identifying the determinants that contribute to and improve academic achievement for students has historically been a focus of investigations in educational psychology and continues to be a central topic of current research. High academic achievement and a good educational experience are considered fundamental components for better life opportunities and increased advantages. Extensive research has suggested a relationship between academic success and numerous outcomes, including positive health and well-being, improved opportunities for employment and higher earnings (Lê-Scherban, Diez, Li, & Morgenstern, 2014; Rumberger, 2011). High school dropouts earn less in the workforce and have poorer health outcomes than their graduating counterparts. Some of the outcomes for students who drop out of school include high rates of unemployment, depression, and delinquency (Liem, Dillon, & Gore, 2001; Rumberger, 2011). The secondary and tertiary ramifications for students who drop out place a high burden on communities financially, because high school dropouts make up a large percentage of individuals who are on welfare and are incarcerated (Rumberger, 2011). For certain ethnic groups the risk of dropping out of high school and the negative consequences that follow are greater compared to other ethnic groups (Ryan & Bauman, 2016).

Understanding the factors that predict academic achievement has important implications, not only for improving the immediate academic performance of students but also in the long term. Academic achievement helps add to prevention of poor health and creates improved occupational outcomes, subsequently lessening the financial burden on communities. Student

achievement has been found to be influenced by personal processes, such as motivation, emotional well-being, and by environmental influencers, such as parental and teacher support (Elmelid et al., 2015; Putwain, Sander, & Larkin, 2013; Vecchione, Alessandri, & Marsicano, 2014).

While research has certainly added to our knowledge about how academic achievement is influenced, identifying the determinants that predict academic achievement is a complex investigative field with areas still not fully explored. Although valuable information about student achievement has been acquired from the vast body of research literature, much of the information is somewhat fragmented, and often takes an insular perspective on student achievement. Student achievement is not a singular, unidimensional occurrence, but rather a dynamic process influenced by several, often complex, factors. There have been few studies that simultaneously examined the relationship between motivation, psychological risk, and teacher support to student achievement. Furthermore, less is known about how motivation, psychological risk, and teacher support autonomously and interdependently influence academic achievement. Taking into account several predictors of academic achievement will serve to acknowledge the complexity and often entangled contributions to the success of students. Examining multiple and interacting predictors also serves to recognize the greater responsibilities that are placed on schools to support students more holistically, including their academic and social-emotional development.

This study attempts to take a comprehensive approach to assess factors that predict academic achievement, an approach that captures the dynamic learning process that is not seen enough in motivational research. Equally important to utilizing a comprehensive approach, this study attempts to fill the gaps in the research related to the lack of diverse ethnic populations-

especially ethnic groups with the poorest academic outcomes, and the negligent research of a value construct that can potentially provide unique information about student achievement (Flake, Barron, Hulleman, McCoach, & Welsh, 2015; Manzano-Sanchez, Outley, Gonzalez, & Matarrita-Cascante, 2018; Roeser, Midgley, & Urda, 1996). The aim of this study is to evaluate the predictive value of motivational constructs (academic self-efficacy and cost value), internalizing risk, and perceived teacher support for academic achievement. The influence of ethnic differences will also be examined. A multidimensional appraisal of the primary determinants and interactions among motivational factors, psychological risk, and teacher support, and their influence on academic achievement, has the potential to reveal distinctive information exclusive to diverse populations of students, especially those students who are often absent in research and who experience fewer opportunities for academic success.

Ethnicity and Achievement

By examining the dynamic process of motivation, internalizing risk, teacher support, and achievement, embedded in the context of ethnicity, researchers can facilitate assessments about motivation for marginalized populations, such as African American and Latinx students, whose voices are sometimes overlooked in research. Recognizing this network may have practical implications for increasing academic outcomes. Historically, the racial achievement disparity between African American students and their White counterparts has been well documented from as early as elementary school and continuing through high school. This disparity calls for a sophisticated exploration and discussion.

A 2013 national report on student achievement revealed that African American students in 4th and 8th grade performed 26 and 31 points lower, respectively, than their White counterparts on standardized math assessments (Kena et al., 2016). In reading, African American students'

performance levels are equally disturbing, at 26 points lower for both 4th and 8th graders (Kena et al., 2016). By 2015, 4th and 8th-grade math (24 and 32 points) and reading differences (26 points for both grades) continue to be staggering. More recently, only 17% and 7% of African American 12th graders performed at or above the proficient level in Reading and Math, compared to Whites (46% Reading, 32% Math), and they performed lower than all other racial groups (Kena et al., 2016). Unfortunately, these disparities are not unique only to African American students. If we take a more in-depth look at Latinx students, we will see the grave perils experienced by minority students for both short-term and long-term outcomes. Consequently, when academic achievement is the area of interest, future research must include honest conversations and quality investigations about race and ethnicity.

The academic achievement gap between Latinx students and White and Asian American students (National Center for Educational Statistics, 2018) makes Latinx students susceptible to a host of negative short-term and long-term outcomes (Liem et al., 2001; Rumberger, 2011). Linguistically, Latinx students present with diverse levels of language mastery for both their native language and English, which poses unique challenges for schools. Students with Limited English Proficiency (LEP), sometimes referred to as English language learners (ELL), have been reported by their teachers to experience more academic difficulties and fewer adaptive skills than their non-LEP peers (Dowdy, Dever, DiStefano, & Chin, 2011). Linguistically diverse students have also been identified as having lower academic achievement and are more likely to be retained in a grade and to drop out of school than their peers (Abedi, 2002; August & Hakuta, 1997). Traditionally, fewer Latinx students graduate from high school on time with a regular diploma, while still others drop out at a higher rate than their White counterparts (Kelly, 2005; National Center for Education Statistics, 2018). Although the overall high school dropout rates

have steadily declined over the years, including those of Latinxs (19% decrease from 2000 to 2016), the rates for Latinxs continue to be higher, at 8.6%, than other races (National Center for Education Statistics, 2018). In 2015, while 88% of adults in the United States had at least a high school diploma or graduate equivalent degree (GED), Latinxs had the lowest percentage of educational attainment/graduation at every level measured, compared to all other racial groups, including Blacks. This remained true throughout the academic spectrum from high school (67%), to partial college (36%) to an associate's degree (22%), to a bachelor's degree (15%) to advanced college degrees (5%) (Ryan & Bauman, 2016).

For culturally and linguistically diverse students, institutional barriers (discriminatory experiences, school dissatisfaction, and unwelcoming experiences) predicted lower academic achievement and a greater likelihood of school dropout. On the other hand, greater academic encouragement by school staff resulted in the inverse results for achievement and dropout (Martinez et al., 2004). Further compounding the unique challenges for Latinx students are findings indicating that teachers have lower and less accurate academic expectations for Latinx students than they have for other racial groups (Tenenbaum & Ruck, 2007). Higher dropout rates, lower academic achievement, lower long-term educational attainment, and lower teacher expectations for culturally and linguistically diverse students are especially troubling because of the large percentage of the population that are adversely affected. Although the Latinx population is the largest and fastest growing non-White racial group (National Center for Educational Statistics, 2018), the research literature is meager regarding the determinants that affect achievement for Latinx students. Without a robust effort to understand the unique determinants that influence the achievement levels for Latinx students, these students will continue to be negatively affected.

On a positive note, some studies have revealed how achievement can be increased for culturally and linguistically diverse students by incorporating a student's cultural knowledge into the teaching process (Chun & Dikson, 2011; Kelley, Siwatu, Tost, & Martinez, 2015). In addition, prepared educators and social-emotional support also contribute to the success of culturally and linguistically diverse students (Lozano, 2016). Complicating the academic profile and increasing the risks of Latinx students are the trials faced by many students as they transition from elementary to middle school, including the decline of achievement, and psychological and social changes (Alspaugh, 1998; Eccles, Lord, Roeser, & Barber, 1997).

Middle School

The adolescent and middle school years are influenced by the normal maturation process that includes significant hormonal changes and unique social stressors. During these years, there are increased academic expectations of independence, larger class sizes, changes in the teacher-student dynamic, and greater demands on students' time (i.e., peers, extracurricular activities). The preadolescent to adolescent period in middle school is a critical developmental time when students experience puberty – a time of physical and emotional transformation, new school and social environments, and decline in academic achievement and aspects of motivation (Anderman & Maehr, 1994; Alspaugh, 1998; Eccles, Midgley, & Adler, 1984; Eccles et al., 1989; Eccles et al., 1993).

In general, research has shown that various aspects of student motivation decline with age and as students advance in grade level (Caprara et al. 2008; Fredricks & Eccles, 2002; Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002; Upadyaya & Salmela-Aro, 2013; Watt, 2004). The overall findings are perhaps best described as the phenomena of “optimism early and realism later” (Wigfield, Eccles, Fredricks, Simpkins, Roeser, & Schiefele, 2015, p. 661). This

phenomenon describes the decline of early competency belief for preschool and elementary school students as they matriculate into middle school. With the decrease in students' interest in school and a decline in their level of motivation with age (Fredricks & Eccles, 2002; Lepper, Corpus, & Iyengar, 2005; Upadyaya & Salmela-Aro, 2013; Watt, 2004), Latinx students become even more vulnerable; thus more in-depth investigation is merited. In light of the vulnerabilities for Latinx students (Liem et al., 2001; National Center for Education Statistics, 2018), the middle school setting is critical for this population. There is a need not only for comprehensive research, but potentially for tailored interventions to offset negative academic outcomes and reverse the risks. But more importantly, discussions about prevention must be conducted.

Prevention Research

A thorough grasp of how motivational factors, psychological functioning, and teacher support interact and influences academic achievement has the potential to strengthen prevention research on a number of fronts. Primarily, this research may add to the prevention of poor student achievement and negative academic outcomes related to poor grades, absenteeism, school dropout, and behavioral problems. For instance, in a qualitative study, students voiced the importance of having teachers who cared for them, a situation which impacted their academic achievement and behavior positively (Henry-Thomas, 2014).

Secondly, yet equally important, motivational factors and teacher support may provide information about how to offset psychological risks. A significant degree of emotional difficulties have to be presented prior to recognition of the need for support (Eklund, et al., 2009). There is often a substantial delay between the presentation of disruptive behaviors and the recommendation for support services (Duncan, Forness, & Hartsough, 1995). As a result of the negative impact of emotional risk, research that sheds greater light on the factors that may shield

adolescents from significant emotional difficulties is imperative. Preventative research can lead to benefits that are twofold, acting as a deterrent against significant emotional difficulties and improving student achievement.

Coupled with previous research that revealed that motivation negatively predicts psychological risk (Rocchino, Dever, Telesford, & Fletcher, 2017), or that social support acts as a buffer for depression and behavioral problems (Kuperminc, Leadbeater, & Blatt, 2001; Wang, Brinkworth, & Eccles, 2013), the current research may move into uncharted territory. Proactive ways to moderate psychological risk and avert serious psychological problems for students are explored. This study may also bridge the research between the relationships among the determinants and how they impact academic achievement, either directly or indirectly. For instance, an understanding of whether and under what circumstances teacher support moderates psychological risk and its influence on achievement, especially in the presence of adverse factors, may result in future research that may lead to measured ways to intervene before more significant clinical psychological problems evolve, and student achievement is adversely affected.

Given the high risk that Latinx students face, particularly during their adolescent years and during middle school, the present investigation will capture a holistic view of the learning process of a number of major factors that influence achievement. The inquiry will also fill in the gap of prevention research specifically for Latinx students with an approach that better reflects the complex experience and realities of these students. This study may add to the resilience research that suggests race/ethnic identity may be a protective factor against internalized problems for various ethnic groups of adolescents (Roberts et al., 1999; Yasui, LaRue., & Dishion, 2004). Perceived membership in an ethnic group with a shared language, tradition,

value, customs, etc., in conjunction with a family or peer support system, may buffer adolescents from experiencing depression and anxiety symptoms. Identifying the influence and interactions of how motivation, psychological functioning, and teacher support impact achievement can lead not only to ways to improve student achievement, but perhaps can prevent deleterious outcomes especially for specific ethnic groups that are most at risk for poor outcomes. Understanding the complex profile and risks faced by students requires a comprehensive approach to examining the achievement process that includes an understanding of the compounded issues related to ethnicity, motivation, psychological risk, teacher support, and achievement.

Motivation

Motivation is a main factor central to understanding the academic performance of students (Eccles et al., 1983; Eccles & Wigfield, 2002; Wigfield, 1994; Wigfield & Guthrie, 1997). Motivation has been defined simply as an individual's drive or goals (Bandura & Schunk, 1981). In other instances, motivation has been operationalized to include broad-based psychological processes or related constructs such as interests, commitments, and effort. Motivation has been well-established as having a strong positive relationship with academic outcomes (Berndt & Miller, 1990; Schunk & Pajares, 2009; Vallerand & Bissonnette, 1992). While there is robust research on the theoretical intricacies of motivation, (Dietrich, Dicke, Kracke, & Noack, 2015; Eccles et al., 1983; Graham & Weiner, 1996; Hulleman, Godes, Hendricks, & Harackiewicz, 2010; Steinmayr & Spinath, 2009), transferring this knowledge into practice may seem challenging if motivation is viewed as a one-dimensional, unmalleable construct.

Motivation has also been linked to a number of positive academic results including grades, attendance, persistence, continued enrollment, and behavior (Berndt & Miller, 1990;

Borders, Earleywine, & Huey, 2004; Eccles, Adler, & Meece, 1984; Vallerand & Bissonnette, 1992). For instance, academic motivation positively predicts reading quantity and scope for children (Wigfield & Guthrie, 1997), the number of courses which students enroll in during high school (Durik, Vida, Eccles, 2006), and task persistence (Battle, 1965). In one instance, academic motivation was more predictive of academic performance than IQ (Battle, 1966). For this current research, motivation is examined through the constructs of self-efficacy (Bandura, 1997) and values – more specifically cost value (Eccles et al., 1983). Motivation is the mechanism by which self-efficacy beliefs regulate behavior through the level of effort and persistence on a task.

Academic Self-Efficacy

Self-efficacy “is concerned with judgments of how well one can execute courses of action required to deal with prospective situations” (Bandura, 1982, p. 122). Rooted in social cognitive theory, academic self-efficacy focuses on an individual’s confidence in their abilities to achieve an outcome (Bandura, 1977). According to Bandura (1982), self-efficacy is a proximal determinant of behavior, thoughts, and emotional reactions in an individual’s evaluation process to achieve. Yet high levels of academic self-efficacy may be most beneficial to learning when the learner faces challenging tasks that would require increased preparation and effort, rather than a perceived easy task where preparation and effort are viewed as unnecessary (Bandura, 1982). Thoughts and emotions are affected when an individual’s confidence in his or her abilities to achieve is truncated, leading to patterns of negative, inefficacious thoughts, increased stress, and potentially compromised performance (Bandura, 1982). Overall, self-efficacy influences persistence, choice, thoughts and emotional reactions, and ultimately performance (Pajares, 1996).

Academic self-efficacy is believed to be more predictive of academic outcomes when it is measured in close proximity to the task, and when the academic self-efficacy measure is concordant with the level of specificity of the performance index (Bandura, 1986; Lent, Brown, & Gore, 1997; Multon, Brown, & Lent, 1991; Pajares & Miller, 1995). In other words, academic self-efficacy is believed to be most informative when the construct measure and the academic outcome measure reflect either specific or global conditions. For instance, an academic self-efficacy measure that assesses science specific-task beliefs (e.g., I am confident I can... complete this science lab, report the findings accurately, or I will get a grade of a B or greater) is most predictive of performance on that specific science task (i.e., assignment of grade).

However, if the academic self-efficacy measure is a broader measure of confidence in science (e.g., I am confident I can... do well in class, complete all the homework in class) the academic outcome index should have a broader criterion (i.e., end-of-course grade, science GPA, or score on a standardized, group-normed science test). Compatibility enhances the predictive power of the relationship between self-efficacy measure and outcome measure. A number of research studies have substantiated this belief, revealing enhanced predictability between academic self-efficacy and academic outcomes, when the measures are in alignment (Lent et al., 1997; Pajares & Miller, 1995; Pintrich & Groot, 1990; Putwain, et al., 2013; Roeser, Midgley & Urdan, 1996).

Roeser and colleagues, (1996), while retaining the compatibility principle for specificity of measure and outcomes as touted by Bandura (1986), utilized broad measures of academic self-efficacy and academic outcomes to document positive relationships. In a study of almost 300 eighth graders, Roeser et al. (1996) discovered that the most academically efficacious students (those who believed that they could master the content taught in school) received higher year-end

grades, as measured by their grade point averages (GPAs). While the compatibility principle of specificity of measure and outcome has been generally accepted, it is important to note that exceptions to this rule have found that in some cases broad measures of academic self-efficacy were strong predictors of specific academic performance (Lent et al., 1997; Lent, Brown, & Larkin, 1986; Pajares & Miller, 1995).

Furthermore, one can argue that there is merit in exploring broad academic self-efficacy beliefs because they may have practical relevance. This is particularly necessary given the increased emphasis on students' overall performance indices (e.g., GPA and state standardized test) and the conditional opportunities dependent on these measures of academic performance (e.g., gifted, advanced placement, college scholarships, school funding, teacher incentives, etc.). Additionally, students are well aware of the significant weight and gravity that global academic measures (e.g., end-of-course test, standardized performance test, etc.) have on determining whether they progress to the next grade. Thus, general or global criteria may have increased significance for students. For instance, although a student may perform well on all class assignments, make passing grades on all tests and quizzes, or obtain a final grade of a C in the class, they may very well not pass the class or be promoted to the next grade if they do not pass the end-of-course test or the state's milestone standardized test needed for promotion.

A formidable body of empirical research reveals that academic self-efficacy has been identified as a predictor of performance (Bandura, Barbarnelli, Caprara, Pastorelli, 1996; Pajares & Johnson, 1994; Pajares & Miller, 1994; Putwain et al., 2013). Students with higher academic self-efficacy are more likely to succeed and are better equipped to manage future academic and behavioral challenges (Bandura, Barbarnelli, Caprara, Pastorelli, 2001; Zimmerman, Martinez-Pons, 1990). Academic self-efficacy has been revealed to predict achievement across a number

of academic achievement domains and for different student populations (Lee & Johnson-Reid, 2016; Pajares & Johnson, 1994; Pajares & Miller, 1994; Turner, Chandler & Heffer, 2009).

Wilson and Training (2007) found that even for very young students (first graders), higher levels of academic self-efficacy positively correlated with higher reading and writing achievement.

Academic self-efficacy has been found to be significant in task choice, and in other instances, has proven to be a more important predictor of achievement than prior achievement (Bandura et al., 2001; Simpkins, Davis-Kean, & Eccles, 2006). In a study of undergraduate students ($N= 350$), Pajares and Miller (1994) showed that math self-efficacy had a greater predictive value for problem-solving than prior math experience. More specifically, mathematics and writing self-efficacy predicted math and writing performance, respectively, for students at various grade levels (Pajares & Johnson, 1994; Pajares & Miller, 1994). In addition, mathematics self-efficacy also mediated the relationship between gender and achievement (Pajares & Miller, 1994). In other words, while gender did not have a direct effect on achievement, men experienced higher performance due to the influence of academic self-efficacy. These findings are important in the research on academic self-efficacy because they add to the evidence that supports Bandura's (1986) assertion that an individual's perceptions of his/her experience are more influential than actual achievements. Academic self-efficacy (Bandura, 1997) can also influence performance independently of past behaviors.

Research has revealed that academic self-efficacy was positively related to academic performance, was a strong predictor of persistence and effort, and that there were meaningful ways to increase a student's level of academic self-efficacy (Schunk & Pajares, 2009). Studies have also continuously shown a decline in academic self-efficacy across the elementary and secondary school years (Fredricks & Eccles, 2002; Jacobs, et al. 2002; Wigfield & Eccles, 1994).

This raises the question, “Why is the research not transferring into practice to improve students’ academic self-efficacy?” The decline in academic self-efficacy as students move up in grades and at certain ages highlights the complex challenge of motivating students, even with the knowledge about factors that positively influence academic performance and how these factors can vacillate. The recognition of other variables that influence motivation provides support for Eccles’ and Wigfield’s (1995) claim that high levels of self-efficacy are insufficient to motivate individuals, particularly if the task does not have any meaningful value to the individual. Eccles’ et al. (1983) define values or subjective task values as specific beliefs regarding the benefits of engaging in a task.

Value

Values have been classified into four important categories within the motivation literature: (a) attainment value, (b) intrinsic/interest value, (c) utility value, and (d) cost value (Wigfield & Eccles, 1992). All four constructs are factors that influence one’s beliefs about the advantages of engaging in a task. Attainment value refers to the individual importance of performing competently on a task, contingent on the perception of the task features used to affirm self-beliefs and characteristics. Intrinsic value, sometimes referred to as interest value, describes the innate, direct gratification an individual gains from engaging in a task (Eccles et al., 1983). Intrinsic value results in a psychological benefit that fulfills an inherent need, independent of any external contingency (Deci & Ryan 1980; Ryan & Deci, 2009).

Utility value captures the usefulness of a task and can be characterized as a form of extrinsic motivation (Wigfield & Eccles 1992). This necessitates engaging in a task as a means to an end, because there is a conscious valuing of a goal (Ryan & Deci, 2000). Attainment, interest, and utility values are associated with fostering an individual's beliefs about a task, and these

attributes have been positively correlated with favorable student outcomes. Cost value, in contrast, can be viewed as a motivational component that impugns an individual's beliefs about a task. Although believed to be more strongly linked to academic choice, cost value has been negatively associated with academic achievement. While each value construct is important, this current study focuses only on cost value.

Cost Value

Eccles and Wigfield (2002, p 120) defined cost value as “negative aspects of engaging in the task, such as performance anxiety and fear of both failure and success, as well as the amount of effort needed to succeed and the lost opportunities that result from making one choice rather than another.” Cost value can be classified into three categories: (a) loss cost (i.e., losing time and energy and losing the opportunity to engage in a preferred task); (b) psychological cost/risk: the cost of failing or the fear and anxiety of not performing up to par; and (c) effort cost: the cost of the investment of effort needed to succeed. While research on cost value and achievement is sparse, there is growing evidence documenting that cost value influences motivational behaviors and academic outcomes (Conley, 2012; Luttrell et al., 2010; Perez, Cromley, & Kaplan, 2014; Watkinson, Dwyer, & Nielsen; 2005).

In an investigation of expectancy, utility value, and cost for middle school students, Kosovich et al. (2015) provided evidence that cost value was negatively associated with academic achievement in both math and science. Kosovich et al. (2015) further established that cost value was also negatively correlated with future interest in both academic domains. In another instance, middle school students who believed engaging in mathematics tasks came at a greater cost than their peers, engaged in more performance avoidance goals, with the aim of not

appearing incompetent in math class (Conley, 2012). Lower levels of cost value have also been associated with higher levels of interest and utility value (Luttrell et al., 2010).

Cost value is especially salient when assessing students' decisions and when understanding the role of emotions in academic achievement. Utilizing one of the more comprehensive measures of cost value, which included the three dimensions of the construct (i.e., loss of opportunities, effort to succeed, and psychological cost), Perez et al. (2014) examined the role of students' perceptions of cost on achievement and academic choice for Science Technology Engineering and Math (STEM) undergraduate students. Perez et al. (2014) discerned differential associations for the three dimensions of cost value, thus verifying a multidimensional construct.

While cost perceptions were not associated with students' chemistry grades, students who reported that it would take more effort to succeed and that they lost more opportunities because of being enrolled in STEM classes, reported at higher rates that they were planning to change their STEM major. Effort cost and loss opportunities predicted students' plans to leave their majors when intentions were assessed throughout the semester (i.e., beginning of the semester, five weeks into the semester, mid-semester, and at the end of the semester). Effort cost had the most predictive value for students' intentions, while psychological cost was not related to their intentions to leave their majors.

The fact that cost value adversely affects not only achievement, but also future interest across academic domains and other motivational values, can magnify the risk for students' success and may limit their prospective academic opportunities. Consequently, more research relative to cost value is important to understand achievement motivation, especially when positive values and high expectations alone cannot explain variance in the commitment to a task,

persistence, or performance. More recent research has found that cost value was not only salient to student outcomes, it was also distinct from expectancy and other value constructs, and multi-dimensional (Flake, Barron, Hulleman, McCoach, & Welsh, 2015).

Flake and colleagues (2015) proposed cost value as a four-dimensional construct that included task effort cost, outside effort cost, loss of valued alternatives cost, and emotional cost. Continued attention to the factors that obstruct student achievement is necessary in the appraisal of motivation and learning. Given its impact on student motivation and achievement, it is important to examine cost value in the discussion of student achievement as a norm. Delving into the dimensions of cost value, particularly psychological and emotional costs, operationalized as class-related worry, frustration, stress, and anxiety (Flake et al., 2015), brings attention regarding students' psychological and internalized risks to the forefront.

Psychological Functioning: Internalizing Risk

Internalizing problems are emotional difficulties that are typically directed inwardly, signify a disturbance in managing emotions and coping with stress. These issues are often manifested as anxiety, depression, and somatic complaints. Anxiety is reportedly the most frequently identified mental health issue in adolescence, with a prevalence rate of 31.9%, surpassing the rate of adolescents with behavioral disorders (e.g., ADHD, Conduct Disorder, and Oppositional Defiant Disorder) (Merikangas et al., 2010). The prevalence rates for adolescent depression is also troubling. The American Psychological Association (2003) reported that major depression will affect approximately 9% of children by the age of 14. More recently, the Federal Interagency Forum on Child and Family Statistics (2013) noted similar prevalence rates for youth ages 12–17. Given these prevalence rates, students with internalizing problems are widespread, but unfortunately, these students are sometimes invisible given the covert

manifestation of their difficulties. However, the consequences that internalizing risk has on students' academic achievement cannot be minimized or ignored.

Understanding the personal motivational processes that influence student achievement in hopes of creating teaching and learning environments that motivate students, lessen negative aspects, and encourage academic success for all students, is a huge undertaking. This can be an even greater challenge when focusing on special populations. Students at risk for internalizing problems are a unique sub-group of the school population, which is in great jeopardy for poor achievement (Bud, McCartney, & Willett, 2007; Masetti et al., 2008; Riglin, Petrides, Frederickson, & Rice, 2014). Youth from under-represented racial and ethnic groups are even more vulnerable because they are at greater risk of being under-identified for internalizing problems compared to those from the racial majority. This compounds the process of screening and intervening for internalizing difficulties

More specifically, although Latinx youth self-report higher rates of internalizing problems than their Caucasian counterparts (Pina & Silverman, 2004; Roberts & Chen, 1995; Roberts, Roberts, & Xing, 2006), they are less likely to receive mental health services than Caucasian youth, and are typically identified for those services much later, when their difficulties may be more severe (Gudiño, Lau, Yeh, McCabe, & Hough, 2009; McMiller & Weisz, 1996; Wood et al., 2005). The preliminary challenges of accurately screening for internalizing problems are highlighted by the scarce research that investigates the appropriate use of emotional screeners and comprehensive instruments for culturally and linguistically diverse populations (Dowdy, Dever, DiStefano, & Chin, 2011). In line with the adverse effects of cost value, students at risk for internalizing problems are also potentially at risk for decreased motivation and poor academic achievement.

The adverse impact that internalizing problems have on the well-being of children and adolescents is far-reaching and can have long-standing effects, even among those with less severe levels of anxiety and depression (Kendall & Brady, 1995). The risks faced by adolescents with anxiety and depression have been well-documented in areas such as school failure and lower grades (Riglin et al., 2014), and have also been shown to continue into adulthood (Aronen & Soininen, 2000; Devine, Kempton, & Forehand, 1994; Woodward & Fergusson, 2001). In a study of first graders, anxiety levels predicted academic achievement four years later (Ialongo, Edelsohn, Werthamer-Larsson, Crockett, & Kellam, 1995). The first graders who ranked in the top third for anxiety were approximately 10 times more likely to rank at the bottom third on standardized achievement measures in fifth grade.

Furthering this relationship, Duchesne, Larose, Guay, Vitaro, and Tremblay (2005) discovered that kindergartners who showed signs of internalizing problems were more likely to have academic difficulties at the end of their high school freshman year. Children with internalized problems are more withdrawn and may be less likely to take risks, ask questions, and engage willingly in learning activities (Martin 1994). These behaviors may lessen their opportunities for learning and hinder academic growth.

Children who internalize problems often have comorbid or later cognitive and academic problems, and some are at a greater risk than children with externalizing problems (Bud et al., 2007; Masetti et al., 2008). Varying degrees of depression have been associated with difficulties in peer interaction, group work, teacher interaction, homework completion, developing personal learning strategies, and academic tasks (Frojd et. al., 2008). Therefore, the early identification of those with internalizing risk is critical to intervention and prevention efforts before more severe

emotional problems emerge, and in an attempt to interrupt the progression that can lead to poor academic outcomes.

Motivation, Internalizing Risk, and Achievement

Aspects of motivation and internalizing risk are highly intertwined when examining students' performance and achievement. In an attempt to understand how emotions and motivational dimensions are intertwined to affect achievement, Pajares, Johnson, and Usher (2007) articulated this entanglement when they asserted:

Physiological and emotional states such as anxiety, stress, arousal, and mood states also provide information about efficacy beliefs. Students can gauge their degree of confidence by the physiological state they experience as they contemplate an academic task. Strong emotional reactions to the task provide cues about anticipated success or failure. When students experience negative thoughts and fears about their capabilities, those affective reactions can lower self-efficacy perceptions and trigger additional stress and agitation that help ensure the inadequate performance feared. (p 107)

The complexity of internalizing risks and motivation has been investigated in a number of instances, often revealing negative associations for both depression and anxiety (Comunian, 1989; Ehrenberg, Cox, & Koopman, 1991; Muris, 2002). In a three-year study of academic self-efficacy and depression, lower levels of academic self-efficacy not only contributed to higher levels of depression, but its effects on depression were also mediated through academic achievement and past depression (Bandura, Postorelli, Babaranellin, & Caprara et al., 1999). In all three years of the study, Bandura and colleagues (1997) found that middle school students with higher academic self-efficacy had lower levels of depression. At the last year of the study,

student's academic efficacy was mediated by their academic achievement and their level of depression the previous year. Interestingly, rather than their actual academic performance, the middle school students' depression was related most strongly to their perceptions of academic inefficacy. Negative associations between academic self-efficacy and anxiety have also been noted in various research studies (Muris, 2002), while in other studies, academic self-efficacy played a mediating role between anxiety and academic performance (Woodrow, 2011).

Although low levels of negative emotions, particularly anxiety, may facilitate achievement, overall there is great agreement that emotional problems are negatively associated with academic self-efficacy beliefs, and compromise aspects of student achievement (Roeser, Strobel & Quihuis, 2002; Roeser, van der Wolk, & Strobel, 2001). This is true even at the level of risk for internalizing problems, before diagnosis with an emotional disorder. For example, Dever (2016) established, within a sample of over 5,000 predominantly African American high school students, that academic self-efficacy negatively predicted internalizing risk, while cost value positively predicted internalizing risk. This was, perhaps, one of the only comprehensive studies that highlighted the concurrent yet opposing roles that motivational factors play in influencing internalizing risk. However, one key ingredient that was missing from this study was information about the classroom context. Examining motivational constructs, internalizing risk, and classroom context could serve to enrich our knowledge regarding how these variables come together to predict student achievement.

Classroom Context

An examination of the process by which motivational factors and psychological functioning influence academic achievement, void of the context of the classroom, would ignore a crucial determinant and perhaps potential interactions. Student learning does not occur in

isolation; their successes do not occur haphazardly, but rather because of a constellation of determinants, including individual and interrelated influences. Academic achievement is the culmination of these dynamic processes. Much like the larger school environment, classrooms have their own culture and climate that play a role in shaping students' learning.

The classroom context provides a unique aspect of students' school experiences that takes into consideration the teacher-student relationship. The context of the classroom has been assessed via various methods (e.g., students' perceptions of teacher's fairness, supportiveness, responsiveness, or friendliness) and conceptualized in the form of the teacher-student relationship (Dietrich et al., 2015; Lee, 2012; Roeser, Midgley, & Urda, 1996). Regardless of how teacher support was assessed, similar key findings were often uncovered.

Perceived Teacher Support

In considering ways to influence students' academic achievement and counteract the negative trajectory of internalizing risk, examining factors such as teacher support becomes a viable option. Teacher support has been found to predict aspects of achievement, motivation, and student engagement for a variety of student populations (Greene, Miller, Crowson, Duke, & Akey, 2004; Harde & Sullivan, 2008; Wentzel, 1998). Some studies have measured teacher support from the perspective of the teacher (Birch & Ladd, 1997; Hamre & Pianta, 2001). But regardless of the lens by which teacher support was measured, many have found positive academic outcomes when there is a close teacher-student relationship (Goodenow, 1993; Lee, 2012). One study that assessed the relationship through the lens of the teacher found that close teacher-student relationships in elementary school had significant benefits, not only in early elementary grades, but in later grades (Hamre & Pianta, 2001). In examining the teacher's perception of their relationship with kindergarteners, Hamre and Pianta (2001) observed that

girls with close relationships to their kindergarten teachers had strong work habits in early elementary school and fewer disciplinary difficulties later in elementary school.

The positive impact of a supportive teacher has also been shown for students in middle school. In a study of the influence students perceived concerning various sources of support (e.g., classroom, peer, teacher) on motivation (e.g., expectancy and intrinsic value [academic subject's importance, interest, and value]), effort and achievement, strong evidence highlights the indisputable value of teacher support, particularly for middle school students (Goodenow, 1993). In a multi-dimensional study, Goodenow (1993) found that perceived teacher support was the strongest predictor for expectancy and intrinsic value, not only for the total population but also for every subgroup of interest (i.e., grades 6-8, boys and girls). Teacher support was also the most influential single support factor related to effort and achievement. Midgley, Feldlaufer, and Eccles (1989) also established a relationship between perceived teacher support and motivation, by showing how changes in students' perceptions of teacher support were related to changes in math values as students transitioned into middle school.

Identifying the various and specific roles that teacher support plays in student motivation, emotional state, and achievement is imperative, particularly when trying to understand the dynamics of student learning, independent of student abilities. Teachers are constant factors within the classroom setting that can be viewed as agents who may enhance, decrease, or reverse the effects of other variables that impact student achievement (Elmelid, et al, 2015; Patrick & Ryan, 2005; Patrick, Ryan & Kaplan, 2007; Roeser, Midgley, Feldlaufer, & Eccles, 1989; Roeser et al., 1996). To investigate the role of perceived teacher support for middle and high school students, Rosenfeld, Richman, and Bowen (2000) took a comparative approach. The researchers compared students' perceptions of varying social support, from three sources, peer, parent, and

teacher, individually and in combination, to a number of school outcomes (e.g., attendance, hours spent studying, avoiding problem behavior, school satisfaction, engagement, academic self-efficacy, and grades). Overall, students who perceived high levels of support from all three sources, compared to any other combination of support, had better school outcomes.

However, in some instances, students who perceived only teacher support also had comparably better school outcomes (i.e., hours studying, school self-efficacy, attendance, avoiding problem behavior, and grades). Similar findings of the far-reaching predictive value of teacher support for academic outcomes have been reported in more recent research. For example, in a study of over 3,000 9th and 10th graders, Lee (2012) revealed that students who felt supported by their teachers (i.e., got along with and listened to students, treated students fairly, etc.), had not only higher academic performance, but were more engaged behaviorally (e.g., effort and perseverance), and emotionally (i.e., sense of belonging).

It is important to recognize that cultural differences may be obstacles to the cultivation of social support systems and meaningful teacher-student relationships (Martinez et al., 2004). In fact, school failure of minority students has been associated with uncaring teachers who espouse to a deficit-based theory (Lynn, Bacon, Totten, Bridges & Jennings, 2010), an ideology that holds people of color responsible for racial disparities that exist in society (Sensoy & DiAngelo, 2012). Despite negative racial beliefs and the fact that some teachers have lower and less accurate academic expectations for Latinx students than they have for other racial groups (Tenenbaum & Ruck, 2007), caring teacher-student relationships can still positively influence motivation and achievement for Latinx students (Riconscente, 2014) as has been shown for other ethnic groups. Given the magnitude of the influence of teacher support, these findings are

notable in appreciating the process of improving academic outcomes in the presence of motivation and internalizing risk.

Motivation, Internalizing Risk, Teacher Support, and Achievement

Several research studies have explored the dynamics of perceived teacher support and motivation or emotions (Ahmed et al., 2010; Elmelid et al., 2015; Wentzel, 1998). For instance, Ahmed et al. (2010) found that perceived teacher support directly predicted achievement and was mediated by both motivational aspects (e.g., competence and subjective task value) and emotions. Psychologically, Roeser and colleagues (1996) reported that perceived positive teacher support enhanced students' positive emotions and predicted their final grades. Furthermore, Wentzel (1998) indicated that students who reported positive teacher support were less likely to be distressed about class tasks. Elmelid et al. (2015) reported that teacher support makes a meaningful difference in motivating students (e.g., predominantly economically disadvantaged students ages 13-15) with internalizing symptoms. Perceived teacher support, in addition to parental support and school attachment, were positive influences on adolescent motivation, even in the presence of depression and anxiety (Elmelid et al., 2015).

While there is some research examining the moderating role of school/class climate, specifically with effort control (ability to attend and shift focus, and regulate emotions) in conduct problems and depression (Loukas & Robinson, 2004), research on the moderating effects of teacher-student relationships is limited. However, it is critical in establishing an understanding about how teacher support interacts with student variables to predict favorable outcomes. Positive teacher-student relationships have been found to moderate depression and behavioral problems for adolescents (Kuperminc et al., 2001; Wang et al., 2013). Kuperminc et al. (2001) explored the moderating role of the teacher-student relationship in the context of school climate, and students' psychological vulnerabilities with respect to behavioral and

emotional problems. They found that adolescents who reported higher positive school climate and low self-efficacy were protected from elevated levels of internalizing problems. Positive school climate also served as a protective factor against self-criticism for internalizing as well as externalizing problems.

The relationship of teacher support and student achievement becomes especially important when one takes into consideration that a teacher's behavior towards a class not only influences a student's motivation and effort in one classroom but in other classrooms where that teacher of interest is not the instructor (Dietrich et al., 2015). The work of Dietrich et al. (2015) extended research on perceived teacher support with two very important findings. First, they were able to establish that a student's perception of teacher support, not for themselves but rather for their classmates, related positively to aspects of motivation (i.e., intrinsic value and effort) for the student and the class as a whole. These positive effects were noted initially and were sustained over time.

Second, Dietrich et al. (2015) found that the higher the shared perceptions of teacher support in one classroom were, the lower the average effort that was required in another academic classroom. It is again noteworthy to state that the student's perceived teacher support was based on their ratings of the teacher's behavior towards their classmates. These direct and indirect relationships underscore the critical role of teachers, including how each element of the classroom is interconnected and can have ripple effects on students' motivation, other classroom environments, and ultimately on achievement.

While there is extensive research on various factors that influence students' academic achievement (Putwain et al., 2013; Roeser, Midgley, & Urdan, 1996), there is little investigation that captures the dimensionality of the learning experience by simultaneously taking into account

motivational, psychological, and classroom contextual factors. Furthermore, few research studies have focused on a more comprehensive predictive phenomenon through a multi-faceted approach to assessing numerous factors and interactions. The work of Elmelid and colleagues (2015) is one of the most comprehensive studies that investigated multiple factors (i.e., internalizing risk, protective factors, and motivation) and their connectedness relative to academic achievement.

This research highlights the importance of parent and teacher influences and school attachment to motivation for students with internalizing problems. Elmelid et al. (2015) confirmed that parental influence, teacher influence, and school attachment all help to maintain positive relationships with students and improve their academic motivation despite their internalizing problems. Also, school attachment served as a protective factor against the adverse association of depression and motivation. However, the study fell short because academic achievement was not investigated to determine whether the effects on motivation extended to important achievement outcomes.

Investigating the various systems that can influence achievement becomes especially important, particularly for adolescents at a time when motivation can wane with age and grade level (Caprara et al., 2008; Fredricks & Eccles, 2002; Jacobs et al., 2002; Watt, 2004). In addition, the adolescent years are a time when academic and social expectations increase with grade level, and emotional turmoil tends to be underscored. The academic performance of adolescents is comprised of an interplay with many, sometimes competing factors, whose influence cannot be easily compartmentalized. This current research study is rooted in the relationship between students' academic self-efficacy beliefs, cost value, internalizing risk, classroom context (perceived teacher support), and academic achievement.

A major aim of this study is to bridge the research among motivation, psychological functioning, and classroom context by examining the process by which motivation, internalizing risk, and the relational dimensions of classroom context predict student achievement. The purpose of this study was to assess the unique predictive value of academic self-efficacy, cost value, internalizing risk, and perceived teacher support on academic achievement. Also assessed were the interactive relationships between academic self-efficacy and internalizing risk, and cost value and internalizing risk in predicting academic achievement. The final objective of this study was to determine whether teacher support moderates the effects of the interaction of academic self-efficacy and internalizing risk, and the interaction of cost value and internalizing risk on academic achievement.

Overwhelmingly, previous research indicates favorable relationships between academic self-efficacy and achievement, and teacher support and achievement (Goodenow, 1993; Lee, 2012; Roeser et al., 1996; Schunk & Pajares, 2009). A meta-analysis examining the relationship between academic self-efficacy and academic performance reveals positive and significant associations across broad, diverse subject matters, experimental designs, and evaluation approaches (Multon et al., 1991). These findings have been substantiated over time. Equally strong evidence indicates that teacher support positively predicts academic achievement (Midgley, Feldlaufer, & Eccles, 1989; Rosenfeld et al., 2000) even during transitions between schools (Longobardi, Prino, Marengo, & Settanni, 2016).

Research suggests that academic self-efficacy and teacher support play influential roles in predicting student academic achievement. Conversely, research findings reveal that cost value and internalizing risk negatively predict achievement. The limited body of research strongly indicates that there are adverse associations between cost value and academic achievement

(Kosovich et al., 2015). With a larger body of literature, more solid evidence supports the negative relationship between internalizing risk and achievement (Ialongo et al., 1995; Riglin et al., 2014). The current research study sought to answer the following research questions:

1. Do ethnicity, ELL status, academic self-efficacy, cost value, internalizing risk, and perceived teacher support have a significant relationship with academic achievement?

It is hypothesized that ethnicity, ELL status, cost value, and internalizing risk will have an inverse relationship with achievement. It is further hypothesized that academic self-efficacy and perceived teacher support will have a positive relationship with achievement.

2. Do ethnicity, ELL status, self-efficacy, cost value, internalizing risk, and perceived teacher support uniquely predict academic achievement?

It is hypothesized that ethnicity will predict achievement (Kena et al., 2016; National Center for Educational Statistics, 2018), with Latinx negatively predicting achievement. In addition, ELL status will negatively predict achievement. Grounded in previous research that indicates favorable relationships between academic self-efficacy, teacher support, and achievement (Goodenow, 1993; Lee, 2012; Roeser, et al., 1996; Schunk & Pajares, 2009) it is further hypothesized that both academic self-efficacy and perceived teacher support will positively predict academic achievement, while cost value and internalizing risk will negatively predict academic achievement.

3. *Do academic self-efficacy and cost value interact to predict academic achievement?*
4. *Do academic self-efficacy and internalizing risk interact to predict academic achievement?*
5. *Do cost value and internalizing risk interact to predict academic achievement?*

6. *Do self-efficacy, cost value, and internalizing risk interact to predict academic achievement?*
7. *Does teacher support moderate the effects of the interaction of academic self-efficacy and internalizing risk on academic achievement?*
8. *Does teacher support moderate the effects of the interaction of cost value and internalizing risk on academic achievement?*

Research on the influence of the interactions between motivational constructs (academic self-efficacy and cost value) and internalizing risk on academic achievement is negligible. However, based on studies that indicate that emotional problems have a negative relationship to academic self-efficacy (Roeser et al., 2002; Roeser, van der Wolk, & Strobel, 2001) and that cost value and internalizing risk are positively related (Dever, 2016), it is presumed that academic achievement will be compromised. It is hypothesized that the interaction of academic self-efficacy and internalizing risk, the interaction of cost value and internalizing risk, and the interaction of academic self-efficacy and cost value will predict academic achievement. It is also predicted that the slope of the relationship between the first independent variable and achievement will decrease (i.e., become increasingly negative or less positive) as the second independent variable increases. It is further hypothesized that the three-way interaction of academic self-efficacy, cost value, and internalizing risk will predict academic achievement, such that the positive relationship of academic self-efficacy will be reduced with the increase of cost value and internalizing risk.

Given the evidence that reveals that teacher support moderated internalizing problems for adolescents (Kuperminc et al., 2001; Wang et al., 2013), it is hypothesized that as teacher support increases, the interaction between self-efficacy and internalizing risk, predicting

academic achievement, will become less negative. Similarly, teacher support would moderate the relationship between the interaction of cost value and internalizing risk and academic achievement, such that as teacher support increases, the negative impact of the interaction between cost value and internalizing risk on academic achievement would decrease.

Method

Participants

This study used data from a larger research project. Permission for the use of these data was obtained from the principal investigator of the project. The Institutional Review Board (IRB) of the principal investigator's university approved this study. (IRB Number: NHRS_H19014, Reference Number: 350683). The data were obtained without any identifying information. The sample is from two middle schools in the Northeastern United States. Passive consent forms were sent home to parents, and announcements explaining the research were emailed to all parents.

All students who were present on the day of the research study in each school completed the assessment forms for the purposes of use by the school; however, parents were given the opportunity to withdraw their children's data from the research project. Only two parents opted out of the research study. No information was provided by the schools about those who were absent on the day of screening. The sample for this study consisted of middle school students ($N=1,206$), fairly divided across grades 6-8, and was composed of a majority of male students (51.9% vs. 48.1%). The sample consisted of 58% Latinx students, 27% Caucasian students, 12% African American students, and 3% Other (American Indian /Alaskan Native, Asian, Multiracial, Native Hawaiian or Other Pacific Islander). A total of 11% of the students were ELL students.

Measures

The academic self-efficacy measure consisted of an 8-item scale ($\alpha = .85$) assessing individuals' self-reported beliefs in their ability to do schoolwork. The academic self-efficacy scale was developed from the *Patterns of Adaptive Learning Scales* (PALS; Midgley et al., 2000). The academic self-efficacy scale included items such as, "I'm certain I can master the skills taught in class this year," "I'm certain I can figure out how to do the most difficult classwork," "I can do almost all the work in class if I don't give up." (PALS; Midgley et al., 2000). Items were at approximately the 5th-grade independent reading level. The items were rated on a five-point Likert scale ranging from 1 = "Not at All True" to 5 = "Very True."

Cost value was assessed with three items ($\alpha = .63$) adapted from established scales (e.g., Eccles, Adler & Meece, 1984). The response scale includes a five-point Likert scale ranging from 1 = "not at all true" to 5 = "very true." Cost value provided a measure of the sacrifices that students perceived they had to endure in order to engage and succeed at tasks, and the price of not performing up to par. Questions included the following: "I have to give up a lot to do well in school," and "Success in school requires that I give up other activities I enjoy."

Internalizing risk was assessed with the *Behavioral and Emotional Screening System* (BESS; Kamphaus & Reynolds, 2007) *Student Form*. The BESS Student Form is a brief screener suitable for school-age children and adolescents in grades 3 through 12. The BESS reliability estimates have been found to be moderate to adequate for test-retest reliability (.80) and split-half reliability (.90 -.93) (Kamphaus & Reynolds, 2007). For the present study, internal consistency coefficients were adequate for the Internalizing Problems scale ($\alpha = 0.81$). The BESS Student Form is a relatively simple instrument to administer, requiring reading skills at approximately the third-grade level and approximately 5-10 minutes to complete. It is

constructed of 30 items designed to evaluate behavioral and emotional risk, resulting in a four-factor solution that includes the following four factors: Adjustment, Hyperactivity, Internalizing, and School Problems (Dowdy, Chin, Twyford, & Dever, 2011).

The BESS Internalizing Problems factor score (10 items) was used as the domain of interest in the present study. The BESS is available in both English, and Spanish and items are rated on a four-point Likert scale (i.e., *never, sometimes, often, almost always*). Raw scores are converted into a total *T*-score. High *T*-scores suggest higher levels of risk for developing or currently exhibiting behavioral or emotional problems. On the BESS, Total *T*-score ranges of 20-60, 61-70, and >70 yields the classifications of "normal" level of risk, "elevated" level of risk, and "extremely elevated" level of risk, respectively.

Perceived teacher support was evaluated with a six-item scale ($\alpha = .84$) assessing students' perceptions of a teacher's supportiveness and care (e.g., "Teachers in this school care about how we feel"). This measure was developed from previous instruments measuring similar concepts (Dever & Karabenick, 2011; Feldlaufer, Midgley, & Eccles, 1988; Fraser & Fisher, 1982; Race & Powell, 2000; Trickett & Moos, 1974). Questions were rated on a five-point Likert scale ranging from 1 = "not at all true" to 5 = "very true," and formed a composite score for teacher support.

The criterion for academic achievement was the student's Grade Point Average (GPA). The GPA is the sum of all middle school course grades for the focal academic year divided by the total number of credits. GPA is reported on a 4.0 scale, with an A grade equaling a 4.0.

Procedure

Data were collected during the Spring semester of 2015, with questionnaires completed in February. Participants completed all questionnaires during homeroom, so as not to interrupt instructional time. School personnel (counselors, school psychologists, and teachers)

administered the questionnaires. All questionnaires were administered on the same day, in a group format using a standardized script. Questionnaires were administered using paper and pencil, and a total of approximately one hour was allowed for completion. The BESS self-report was administered first, followed by the motivation questionnaire, which included teacher support, academic self-efficacy, and cost questions. Participants were assigned identification numbers, which were used to anonymize research files and to add demographic information, as noted earlier, from school files. As part of the larger research project, all identifying information about participants was removed prior to creating the research files, and before being given to the principal investigator of this current research.

Data Analysis Plan

Correlations were conducted as part of the preliminary analysis and assessed the relationship between each main effect and academic achievement. Hierarchical multiple regression (HMR) analysis was conducted to assess whether ethnicity, ELL status, academic self-efficacy, cost value, internalizing risk, and perceived teacher support predicted student achievement, as defined by the end of year GPA. The main effects of ethnicity, ELL status, academic self-efficacy, cost value, internalizing risk, and teacher support were the basis for the first analysis. Theoretical rationales were considered when determining the order of the variables and the interactions. After controlling for ethnicity and ELL status, the remaining variables were attitudinal variables with no one variable necessarily antedating the other. It is important to understand why individuals engage in a task. Because self-efficacy is concerned with an individual's belief about their abilities to be successful at a task and is the central determining factor for individuals choosing to engage in a task (Bandura, 1982), an initial appraisal of its influence on achievement is important. The process of determining one's expectations and confidence to succeed involves value judgments regarding the benefits and price of engaging in a

task (Eccles et al., 1983), while cost value plays a principal, contributing role in evaluating whether to pursue a task. Thus, this will follow academic self-efficacy beliefs.

Although internalizing risk may influence one's belief about their capabilities to be successful at a task, this study attempted to understand individuals' motivational beliefs prior to assessing psychological risk. Also, while the psychological state may predate motivational determinants and be inherent to an individual constitution, this study assesses psychological risk. Such risk may vacillate at any given time and is distinguishable from a clinical diagnosis that may identify more individuals with an innate, chronic psychological disorder. Thus, once an individual chooses to engage in a task based on his or her beliefs in their abilities to succeed, and as they weigh the cost to engage in the task, how psychological risk interacts with an individual's motivation to impact achievement is an essential question of this research.

Finally, an evaluation of teacher support, an environmental determinant, captures factors that are external to the individual. In the first block, ethnicity and ELL status were entered. The second block included the main effects, with the predictors entered in the following order: (1) academic self-efficacy, (2) cost value, (3) internalizing risk, and (4) perceived teacher support. The third block addressed all two-way interactions, Academic Self-Efficacy X Cost Value (ASE x CV), Academic Self-Efficacy X Internalizing Risk (ASE x IR), and Cost Value X Internalizing Risk (CV x IR). In the fourth and final block, the three-way interactions were entered (Academic Self-Efficacy X Cost Value X Internalizing Risk (ASE x CV x IR), Academic Self-Efficacy X Internalizing Risk X Perceived Teacher Support (ASE x IR x TS), and Cost Value X Internalizing Risk X Perceived Teacher Support (CV x IR x TS). The interactions would assess whether the effect of the first predictor on achievement changes with the introduction of the second (two-way interaction) and third (three-way interaction) predictors. The two-way

interactions will evaluate when or under what conditions specific associations can be expected. For instance, the interactions would determine whether (1) academic self-efficacy and cost value, (2) academic self-efficacy and internalizing risk, and (3) cost value and internalizing risk interact to predict academic achievement. The three-way interaction of academic self-efficacy, cost value, and internalizing risk will assess whether these variables interact to predict achievement. The remaining two three-way interactions will verify the veracity of the hypotheses that teacher support will moderate the interaction of both academic self-efficacy and internalizing risk, and the interaction of cost value and internalizing risk on academic achievement, which also represents an interaction.

Results

Preliminary Analyses

Frequency distributions revealed a total of 79 cases with missing data. Little's Missing Completely At Random (MCAR) analysis was conducted to determine whether the data were missing randomly. Results of the variable analysis revealed that the data missing were random, and thus could be deleted. The deletion of the cases did not adversely impact the final sample size ($n = 1127$). The final sample size was sufficient, given the number of predictors (Tabachnick & Fidell, 2013). Ethnicity was recoded to reflect four levels to analyze variances among the races, and then recoded into two levels (Latinx and non-Latinx) for the correlations and hierarchical multiple regression. Table 1 displays the demographic characteristics of the final sample.

Table 1*Demographic Characteristics of Participants*

	Frequency	Percent
Gender		
Male	584	52%
Female	543	48%
Ethnicity		
Black (African, Jamaican, West Indian)	136	12%
Latinx	651	58%
Caucasian	312	27%
Other	28	3%
Grade		
6 th grade	369	33%
7 th grade	373	33%
8 th grade	385	34%

All analyses were conducted using the data analysis software SPSS version 20.0. A preliminary analysis was conducted to determine whether ethnicity predicted GPA. On average, Latinx students had lower GPAs than non-Latinx students. An ANOVA revealed that there was a significant effect of ethnicity on GPA: $F(3, 1123) = 19.604; p < .001$. Post hoc comparisons, using the Tukey HSD test, indicated that the mean GPA for Latinx students ($M = 2.89, SD = .82$) was significantly lower than the mean GPA for Caucasian students ($M = 3.30, SD = .69$). Also, the mean GPA for Black students ($M = 2.96, SD = .82$) was significantly lower than the mean GPA for Caucasian ($M = 3.30, SD = .69$). While the GPAs for Latinx and Black students were significantly lower than the GPAs of their Caucasian counterparts, their GPAs were not

significantly different from each other. The mean GPA for the Other ethnic group ($M = 3.22$, $SD = .99$) was not significantly different from the GPAs of Latinxs, Blacks, or Caucasians.

Preliminary analyses were conducted to ensure that no violations of the assumptions of multicollinearity, normality, linearity, and homoscedasticity were made for the main hierarchical multiple regression analysis. Collinearity statistics were examined to assess the assumption of multicollinearity. A VIF greater than 10 and a tolerance approaching zero have been well-established criteria for indicating multicollinearity concerns (Bowerman & O'Connell, 1990; Field, 2009; Myers, 1990). All VIFs were within an acceptable range (1.07–1.47), and all tolerance statistics were also acceptable. To counter multicollinearity when testing main effects and interaction terms simultaneously, independent variables were centered by subtracting the mean from each independent variable, then multiplying the residuals. Interaction terms were then created using the centered terms. Scatterplot, p-p plot, and histogram were used to test the assumptions of normality, linearity, and homoscedasticity. Consistent with the criteria set by Field (2009) and Tabachnick and Fidell (2013), a visual examination of the histogram and plots revealed that this was not a normal distribution, which adversely influenced homoscedasticity. A review of the histogram and frequency statistics indicated a distribution that was negatively skewed (-1.08) with positive kurtosis (1.55). However, linearity was confirmed through the overall rectangular shape of the scatterplot. Outliers were signified by standardized residual statistics of an absolute value greater than 3.3 (Field, 2009, Tabachnick & Fidell, 2013), and were noted for 14 cases. However, there were no outliers with a value greater than one that would influence the model, based on an examination of Cook's d value (Field, 2009, Tabachnick & Fidell, 2013).

Correlations for all key variables are presented in Table 2. As expected, most of our correlation hypotheses were confirmed, providing support for our first research question. However, it is important to note that the correlations were not strong. Ethnicity and ELL status were negatively correlated to achievement. Being Latinx and being an ELL student were related to lower achievement. Higher levels of internalizing risk were also related to lower levels of achievement. As hypothesized, both academic self-efficacy and perceived teacher support were positively correlated to academic achievement. Students with higher levels of academic self-efficacy and higher levels of perceived teacher support had higher levels of academic achievement. Interestingly, cost value was not significantly correlated to achievement.

Table 2

Correlations, Means and Standard Deviations for Key Variables and GPA

Variable	1	2	3	4	5	6	7
1. Ethnicity	--						
2. ELL	.26**	--					
3. SE	.13**	-.07**	--				
4. CV	.03	.05	.35**	--			
5. IR	.00	.03	-.22**	.03	--		
6. TS	-.02	.05	.39**	.17**	-.24**	--	
7. GPA	-.19**	-.09**	.15**	-.01	-.19**	.20**	--
<i>M</i>	--	--	.00	.00	.00	.00	3.02
<i>SD</i>	--	--	.71	.76	.58	.82	.81

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. ELL = English Language Learners; SE = Self Efficacy; CV = Cost Value; IR = Internalizing Risk; TS = Teacher Support, GPA = Grade Point Average.

In the first step of the HMR, ethnicity (Latinx) and ELL status were entered. This model explained 3.7% of the variance in GPA, $F(2, 1124) = 21.67, p < .001$. Consistent with our hypothesis, ethnicity was significantly associated with GPA. Being Latinx negatively predicted GPA ($\beta = -.177, p < .001$). However, ELL status was not a unique contribution to the model ($\beta = -.044, p > .05$), and thus did not predict GPA. Applying Cohen's (1988) recommendations, the effect size for ethnicity was moderate in predicting GPA.

In Step 2, all main effects were entered. The analysis from this point on was ran for all students. Model 2 as a whole accounted for 9.9% of the variance in students' GPA, $F(4, 1120) = 19.101, p < .001$. After controlling for ethnicity and ELL status, internalizing risk ($\beta = -.136, p < .001$) negatively predicted GPA, while teacher support ($\beta = .154, p < .001$) positively predicted GPA, confirming the hypotheses for the main effects of internalizing risk and teacher support. As levels of perceived teacher support increased, the GPAs of the students increased. However, as expected, higher levels of internalizing risk predicted lower levels of students' GPA. Adhering to Cohen's (1988) guidelines, the effect sizes for both internalizing risk and teacher support were moderate in predicting GPA. Our hypothesis that self-efficacy will positively predict GPA was unsupported ($\beta = -.047, p > .05$); so was the hypothesis that cost value will negatively predict GPA ($\beta = -.042, p > .05$).

Two-way interactions were entered into the regression model at Step 3 to assess interactions. The addition of the two-way interaction in Model 3 did not account for any additional variance. Taking a closer look at the two-way interactions, self-efficacy and cost value, did not predict GPA ($\beta = -.052, p > .05$); neither did self-efficacy and internalizing risk ($\beta = -.036, p > .05$). In addition, the interaction of cost value and internalizing risk failed to predict GPA ($\beta = .034, p > .05$).

The three-way interactions were entered at Step 4, the final stage of the model. Step 4 did not improve the model and did not account for any additional variance. Neither did the three-way interaction of self-efficacy, cost value, and internalizing risk, predict GPA ($\beta = .023, p > .05$). Furthermore, the three-way interactions to assess whether teacher support would moderate the interaction of academic self-efficacy and internalizing risk ($\beta = -.031, p > .05$), and the interaction of cost value and internalizing risk ($\beta = -.030, p > .05$), to predicted GPA were also unsupported.

However, the final Model remained significant, $F(12, 1114) = 10.89, p < .001$. The predictors of ethnicity, internalizing risk and teacher support made significant unique contributions to the final model. These results indicated that internalizing risk $t(1114) = -4.09, p < .001$ and teacher support $t(1114) = 4.56, p < .001$ had consistent effects for students, regardless of their levels of self-efficacy or cost value. Ethnicity created the greatest contribution to the model $t(1114) = -5.61, p < .001$. Table 3 summarizes the results of HMR predicting students' GPA.

Table 3

Summary of Hierarchical Multiple Regression Analyses Predicting GPA

Predictor	R	R ²	ΔR^2	B	β
Step 1	.19	.04	.04		
Ethnicity				-.29	-.18***
ELL Status				-.12	-.04
Step 2	.31	.10	.09		
Ethnicity				-.27	-.17***
ELL Status				-.19	-.05
Academic Self-Efficacy				.05	.05
Cost Value				-.05	-.04
Internalizing Risk				-.19	-.14***
Teacher Support				.15	.15***

Step 3	.32	.10	.10		
Ethnicity				-.27	-.17***
ELL Status				-.17	-.04
Academic Self-Efficacy				.05	.05
Cost Value				-.05	-.04
Internalizing Risk				-.19	-.14***
Teacher Support				.15	.15***
ASE x CV				-.07	-.05
ASE x IR				-.06	-.04
CV x IR				-.06	-.03
Step 4	.32	.10	.10		
Ethnicity				-.27	-.17***
ELL Status				-.11	-.04
Academic Self-Efficacy				.05	.04
Cost Value				-.05	-.05
Internalizing Risk				-.18	-.13***
Teacher Support				.15	.15***
ASE x CV				-.07	-.05
ASE x IR				-.08	-.05
CV x IR				.05	.03
ASE x CV x IR				.04	.02
ASE x IR x TS				-.04	-.03
CV x IR x TS				-.05	-.03

Note. * $p < .10$. ** $p < .05$. *** $p < .001$.

Discussion

Identifying variables that predict the achievement of students has important theoretical and practical implications. However, the significance of research in this area becomes even more apparent when the focus is on populations of students who have been marginalized for far too long. Historically, the achievement gap for Latinx students has been pronounced in manners such as lower achievement, increased dropout rates, and lower college degree attainments than other racial groups (National Center for Educational Statistics, 2018). Amplifying the importance of the need for more research in this area is the fact that Latinx are one of the fastest growing racial groups, estimated to double within the next few years (Vespa, Armstrong, & Medina, 2018). Yet, not enough research has been done to contribute to changing the collective academic

experience for Latinx students. This is alarming considering that Latinxs are projected to make up one of the largest racial groups in the U.S. but will have some of the poorest academic achievement.

The current study attempted to contribute to the research for Latinx students by taking a multidimensional appraisal of factors that may influence their academic achievement. In the current study, we analyzed the predictive value of ethnicity, ELL status, academic self-efficacy, cost value, internalizing risk, and perceived teacher support for student achievement. Furthermore, we examined multiple possible two-way and three-way interactions. Of particular interest, we assessed whether academic self-efficacy and perceived teacher support would moderate the potentially negative effects of cost value and internalizing risk on student academic achievement. The use of multiple motivational constructs and predictors, coupled with a comprehensive set of interactions, could provide an in-depth understanding of the network that influences academic achievement and perhaps identify protective factors for students with high levels of cost value and internalizing risk. The results of this study supported some previous research.

As compared to their non-Latinx peers, Latinx students, on average, had lower GPAs, adding to the evidence of the academic achievement gap between Latinx students and White and Asian American students (National Center for Educational Statistics, 2018). Also, Black students, on average, had lower GPAs than Caucasian students. While having the lowest GPAs, Latinx students did not perform significantly lower than Black students. Caucasian students performed best, followed by Other, Blacks, and finally Latinx.

Some support for our first research question was yielded. Our first research question sought to determine if achievement correlated with ethnicity, ELL status, academic self-efficacy,

cost value, internalizing risk, and teacher support. Higher levels of academic self-efficacy and perceived teacher support were related to higher levels of achievement. Ethnicity, ELL status, and internalizing risk correlated to lower levels of achievement. While these correlations were significant, the strength of the relationships was weak.

We established partial support for our second research question that assessed the unique predictive value for the main variables. Being Latinx predicted academic achievement. Unfortunately, and for far too long, being Latinx has related to and been predictive of negative achievement. Considering the academic variance among the ethnicities and weak correlation between ethnicity and achievement, Latinx students were not especially different from the entire sample, thus the subsequent analysis was conducted for all students. Interestingly, ELL status did not predict GPA. One very important explanation to consider for the results related to ELL status is the percentage of students that make up this group. In this study, students in the ELL group made up only 11% of our sample, which may impact the results. Although linguistically diverse students have also been identified as having lower academic achievement and are more likely to drop out and be retained than their peers (Abedi, 2002; August & Hakuta, 1997), these findings emphasize that Latinx and ELL students are unique populations; thus, their academic needs must be addressed by various methods. While some Latinx students are ELL students, it appears that in this study, identifying as Latinx is more important in the prediction of GPA than ELL status. This highlights an important distinction for these two groups of students and raises questions about what the differences are between these two groups that leads to membership in one group predicting achievement, and membership in another failing to predict achievement. Could it be that an ELL population is more racially and linguistically heterogeneous group than the Latinx population? Perhaps this diminishes the negative stereotypes and the impact of racial and cultural

biases, and ultimately changes students' experiences and self-perceptions. While diverse, Latinxs may be viewed more homogenously, making them more susceptible to negative racial stereotypes that can influence their motivation and performance.

ELL students are a culturally and racially heterogeneous group. They are also likely to receive stereotypical messages, but these messages are perhaps more focused on language differences rather than messages that emphasize cultural and racial differences. Although stereotypical messages can influence student's self-beliefs and performance, ELL students may not be as impacted in areas where language is less influential. While teachers perceive ELL students as having more academic difficulties than their non-ELL peers (Dowdy, Dever, DiStefano, & Chin, 2011), these students may be an even more diverse group whose personal attributes are equally diverse and cannot be easily summarized to predict achievement. Compared to non-ELL students, Abedi (2002) found that the lower achievement of ELL students was smaller or nonexistent in science and math, subjects that are less reliant on language than other subjects such as English. Given the fact that a student's GPA involves the sum of all course grades, including electives and language-reduced classes such as gym, separated achievement measures in language-loaded vs. language-reduced classes may provide another option used to determine whether a student's ELL status predicts achievement.

Internalizing risk predicted academic achievement. Students with higher levels of internalizing risk had lower GPAs than their peers. This finding supports previous research that indicated internalizing problems not only predicted low academic achievement (Ialongo et al., 1995) but was related to poor academic outcomes, such as academic difficulties, lower grades, and school failure (Duchesne et al., 2005; Riglin et al., 2014). The importance of these findings is particularly salient for Latinx students in the context of previous research that indicates that

their symptoms are generally more severe and that they receive mental health services much later than their peers (Gudiño, Lau, Yeh, McCabe, & Hough, 2009; McMiller & Weisz, 1996; Wood et al., 2005). Latinx students and students with internalizing risks face poor academic achievement. Thus, they deserve unique attention that is sensitive to both racial issues and the risks of internalizing problems.

On an encouraging note, teacher support was a unique and positive predictor of student's academic achievement. These findings corroborate previous research (Midgley, Feldlaufer, & Eccles, 1989; Rosenfeld et al., 2000). The more students perceived that their teachers cared for and supported them, the higher their GPAs. While identifying as Latinx and internalizing risk each predicted lower academic achievement, teacher support in particular was a positive influence on students' achievement. Although perceived teacher support did not attenuate the negative relationship between internalizing risk and GPA, it positively predicted achievement, indicating a promotive effect. Another encouraging view of these findings is that perceived teacher support had a slightly greater impact on academic achievement than internalizing risk.

In this study self-efficacy was not a significant predictor in the model. However, it is important not to refute the predictive value that self-efficacy has on achievement (Bandura, Barbarnelli, Caprara, Pastorelli, 2001; Zimmerman, Martinez-Pons, 1990). Academic self-efficacy has predicted achievement across a number of academic achievement domains and for different student populations (Lee & Johnson-Reid, 2016; Pajares & Johnson, 1994; Pajares & Miller, 1994; Turner, Chandler & Heffer, 2009).

Perhaps the differences in findings in this study and previous studies are related to variances in the construct measures. Prior literature has primarily focused on self-efficacy beliefs related to specific subjects rather than self-beliefs about doing well academically in general. For

example, Bandura and colleagues (2001) used a self-efficacy measure that asks questions about capability beliefs, specifically in mathematics, science, social studies, and reading and writing language skills. Variations in the measures used to assess the theoretical constructs and the time period when measures are taken may contribute to differences in findings. Difference in the construct measures may also explain the lack of two-way and three-way interactions in this study. Also, because self-efficacy can fluctuate over time and have varying degrees of influence on achievement throughout an academic year, self-efficacy may not have a significant influence on accumulated achievement (GPA) for this population of students.

More importantly, this study focuses on a majority Latinx middle school population, an ethnic group that is neglected in self-efficacy research. In research that used similar measures for self-efficacy and achievement via GPA (Roeser et al., 1996), no Latinx students were included in the sample of middle school students. The relationship between self-efficacy and academic achievement may be very different for Latinx students. Furthermore, research is relatively sparse for this often-ignored population, specifically in middle school, at a time when academic self-efficacy has been found to decline with grade level (Fredricks & Eccles, 2002; Jacobs et al. 2002; Wigfield & Eccles, 1994). Thus, a robust body of research that could be used to build theoretical and empirical evidence specific to Latinx students is currently undeveloped.

While prior research reveals an adverse relationship between cost value and academic achievement (Kosovich et al., 2015), the findings from the current study were inconsistent. In this study, cost value did not predict academic achievement. Considering that cost value was not correlated to achievement, this result was not surprising. However, this result must be taken within the context of the particular population and other factors. For a predominantly Latinx population, cost value, measured as giving up a lot, including other activities, and an investment

of time, was not associated with achievement. Perhaps for students whose ethnicity and language often play a prominent role, the “psychological cost” of doing well may be a significant predictor of achievement. If we consider cost value to be a four-dimensional construct (task effort cost, outside effort cost, loss of valued alternatives cost, and emotional/psychological cost) as Flake et al. (2015) explain, perhaps a broader measure of cost value would strengthen its predictive value of achievement.

The results also fail to support our interaction hypotheses. First, interpreting the results within the context of the correlations, where weak correlations were yielded and cost value not correlating to achievement, these findings are not especially alarming. Stronger correlations between the variables and achievement may have led to significant interactions. Second, a more robust measure of concepts such as cost value may also contribute to significant interactions. There is no prior research that took a multilayered approach to examine similar variables and interactions, which could thus provide reference and background support. This multilayered, simultaneous approach of examining specific motivational aspects, emotional risk, and perceived teacher support more dynamically, is an uncharted field that can inform our understanding of student achievement.

Limitations and Future Research

There are a few limitations with this study. First, while the cost value measure was statistically acceptable, it was a three-item scale, which may have captured a narrow image of the concept. Cost value takes into account (a) loss cost (i.e., losing time and energy and losing the opportunity to engage in preferred tasks); (b) psychological cost/risk (i.e., the cost of failing or the fear and anxiety of not performing up to par); and (c) effort cost (i.e., the cost of the investment of effort needed to succeed). For future research, a wider-range cost value measure

that assesses the various components of the concepts may uncover significant findings and interactions.

A second limitation of this study was that all measures were from the student's perspective. While student voices are essential to the discussion, multiple contextual factors, including parents' and teachers' perceptions, can influence students' motivation and emotional state. Thus, it may be valuable to gain other perspectives in future research regarding aspects of students' motivation and or internalizing risks. For example, a teacher's perception of a child's level of internalizing risk (rather than the child's self-perception of risk) may be the catalyst for increased teacher support, which may then moderate any negative impact of internalizing risk on achievement – a relationship unsupported in this study when we only looked at students' self-reported internalizing risk. While still assessing students' perceptions, multiple raters could provide a fresh perspective and a more robust student profile, identifying an even more dynamic phenomenon.

Although some of the variables and interactions in this study did not prove to be predictive of student achievement, the strength of the current study is that it takes a multidimensional approach to understanding the dynamic process of student achievement, an approach that is limited in current research. This current study could serve as an example for future research that incorporates multiple variables and examines interactions to gain a more holistic appraisal of student learning and achievement. While the interactions were not significant, this study can provide a model from which future research can build on and improve when appraising the impact of multiple influencers and interactions of achievement. Just as the significant findings can provide valuable implications for future research, the findings that were

not significant can also inform future research by serving as a guide, given the limitations of this study, to choose different angles or interactions to research.

Like many other research studies, the methodology is often open for criticism. The drawback of using a multiple regression is causal inferences cannot be concluded because it is not based on experimental manipulations, but rather correlations among the variables. However, the advantage of using a hierarchical multiple regression (HMR) for analysis is that it is versatile. Because this study was multidimensional, HMR has the capacity to manage multiple predictor variables, analyze a combination of continuous and categorical data, and analyze both main effects and interactions. More importantly, the use of HMR allows the researcher to enter the variables into the model based on a theoretical rationale. Finally, given the specificity of our population, caution regarding generalizability should be used. While the majority of our population was Latinx, an often-neglected population in motivation research, our results are best generalized to similar populations.

Implications

The results of this study have important implications for student achievement related to ethnicity, emotional well-being, and the classroom context. First and foremost, ethnicity predicted academic achievement. Particularly for Latinx students as a whole, they fared poorer academically. The caution of this finding is not to have low expectations for Latinx students but to take a preventative approach to address their needs. Rather than a “wait to fail” approach for services to be triggered, schools can proactively intervene and provide supports that are justified and tailored to Latinx students. For example, through culturally sensitive pedagogy, instruction, and teaching, which integrate students’ culture into academic content (Hood, 1998), academic outcomes have been shown to increase for Latinx students (Kelley et al., 2015). In light of the findings for Latinx being similar for the entire sample in this study, these implications can be

applicable for other ethnicities. While ethnicity is a permanent characteristic for students, emotional risk and the classroom context are not. Thus, these factors can fluctuate or be altered to lower academic risk or improve academic achievement.

In this study, internalizing risk predicted students' GPA. As internalizing risk increased, students' GPAs decreased. These findings imply that students who are more withdrawn or who exhibit more symptoms of anxiety or depression are especially vulnerable to lower achievement. However, students who are more engaged and more emotionally assured exhibit stronger academic skills. Although schools are not mental health agencies, educators have to find ways to better address students at risk for internalizing problems, because emotional well-being allows students to be available for academic learning and achievement. Additionally, for some students, schools are the most stable environment. These findings emphasize the need for detecting and appropriately addressing internalizing problems – even at the early stages of risk.

Underscoring the importance of these findings, Miller et. al (2019) found that not only were students' social, emotional, and behavioral risks stable across three time periods (fall, winter, spring), but that follow-up screening captured another 4%–16% of students identified as at-risk. Rescreening students in the winter and spring who were initially identified with borderline risk resulted in another 44%–89% of students identified as at-risk. The stability of social, emotional, and behavioral risk (Miller et al., 2019), coupled with the implication of this current study that internalizing risk negatively predicts academic achievement, provides a rationale for the increase of research for emotional screening and intervention for students (Bruhn, Woods-Groves, & Huddle, 2014; Kilgus, et al., 2019; Dowdy, Dever, DiStefano, & Chin, 2011).

The current study also has practical implications for teachers and teacher preparation programs on how teachers can positively influence student achievement. Perceived teacher support predicted GPA. The more students perceived that their teachers cared for and supported them, the higher their academic achievement. Because a teacher is a constant fixture in the classroom and a positive predictor of achievement, teacher preparation programs have a role, not only in educating preservice teachers on academic instruction, but also on the importance of creating caring and supportive classroom environments. School administrators also have a responsibility to ensure that teachers understand how advantageous the teacher-student relationship is for the achievement of the students they teach. Caring and supportive teachers are a cost-effective and viable intervention to improve student achievement. When teachers show up, are present, show that they care about how students feel, and listen to what their students have to say, students feel supported, and in turn, their academic achievement is strengthened. A caring and supportive teacher can potentially impact motivation and achievement for many students at any given time, even those in the most vulnerable populations (Elmelid et al., 2015). At times, this may have a greater direct impact on achievement than peer or parental support (Ahmed et al., 2010).

Taking a look at the hypotheses unsupported by this study, the first implication is that limited English proficiency does not predict achievement. Previous literature revealed that ELL students have more academic difficulties (Dowdy, Dever, DiStefano, & Chin, 2011), lower academic achievement, higher dropout rates, and are retained more frequently than their non-ELL peers (Abedi, 2002; August & Hakuta, 1997). Given the current findings, which run contrary to previous studies, in-depth research is necessary to clarify the differences in these findings. This current study had a very small percentage of ELL students which could influence

the results. Future research, with the focus on the achievement of ELL students, should have predominantly ELL sample so that meaningful interpretations can be gleaned from the results. It is important to explore what factors may play a role in the achievement of ELL students.

Students' perception of their learning experience, quality of instruction, teacher role, and parent involvement are avenues that can be examined in future research. For example, a study by Dowdy and colleagues (2011) provided a teacher's perspective on the performance of ELL students. Martinez and colleagues (2004) found that institutional barriers (discriminatory experiences, school dissatisfaction, and experiences of feeling unwelcome) predicted lower academic achievement for culturally and linguistically diverse students.

The current study also adds to research by Martinez et al. (2004), which questioned the idea that just being labeled as an ELL student was enough to predict achievement. Rather, external factors need to be examined for their contributory role to student achievement. In future research, factors such as teachers' expectations and beliefs about ELL students, differentiated types and quality of instruction, and types of exposure that students with limited English proficiency receive compared to their English-speaking peers should be explored to examine the predictive value these attributes have on ELL student's achievement. The implication that speaking a language other than English does not forecast achievement represents a warning against making assumptions and judgments about proficiency, capability, and academic expectations for ELL students without first gathering data related to students' skills.

In this study, academic self-efficacy did not predict achievement. In other words, being more self-efficacious did not project a higher GPA. While academic self-efficacy did not have a direct predictive value on student achievement, considering previous research findings (Chun & Dickson; 2011) that noted how self-efficacy mediated the relationship between culturally

responsive instruction and achievement for Latinx students, it is important that future research explores whether self-efficacy plays more of a mediating role in Latinx students' achievement process rather than a direct or moderating role.

Another implication based on the current findings is that cost value does not predict GPA. Students' beliefs about the negative aspects of doing well in school did not predict their achievement. This study suggests that students' thoughts about how much it will cost (time, effort, loss of alternative activities) does not predict student achievement over time. Yet, we know that cost value has been negatively associated with achievement in math and science and future interest for middle school students (Kosovich et al., 2015). Restraint must be taken not to minimize or negate prior research. Although cost value was not predictive of achievement, one can argue that cost value is a complex construct that is not easily operationalized and is far from being fully theorized, which echoes previous criticism about the scarcity of the construct in research (Flake et al., 2015; Wigfield & Cambria, 2010).

The final results of this study are that none of the interactions predicted GPA. Looking at the two-way interactions, neither the interaction of academic self-efficacy and cost value, nor the interaction of academic self-efficacy and internalizing risk, predicted GPA. Being confident in their abilities and their beliefs about the cost of succeeding in school did not predict a student's GPA. For all the three-way interaction terms, the introduction of the second and third variables did not interact with the first variable to change the direction or magnitude of the relationship between the first variable and the predictor. Despite the significance of both internalizing risk and teacher support each predicting GPA, these two factors did not interact with academic self-efficacy or cost value to predict students' GPA.

Based on these findings, the implication is that none of the examined aspects of motivational factors, emotional risk, or perceived teacher support interact to enhance, attenuate, or reverse the predictive value of a student's GPA. In predicting GPA, believing that your teacher supports you, and experiencing feelings of depression or anxiety, are not influenced by your belief about your abilities to academically do well or about the cost of succeeding academically.

Conclusion

Identifying variables that predict student achievement continues to be an important and ongoing area of research. With changing demographics and specific racial groups historically performing academically below other racial groups (Kena et al., 2016; National Center for Educational Statistics, 2018; Ryan & Bauman, 2016), researchers need to turn more attention to diverse student populations. Previous bodies of research fall short of judiciously examining the achievement process for Latinx students, students who face significantly poorer academic outcomes than their counterparts (Kelly, 2005; Ryan & Bauman, 2016). Furthermore, the gap in the literature becomes even more evident because a multidimensional approach that may provide a deeper understanding of the relationships among multiple associations and the achievement phenomena is lacking. The current study attempts to bridge these gaps and establish steps towards improving academic achievement for students, particular Latinx students. While further research is needed to develop a better understanding of interactions, our findings are important in detecting a variety of individual factors that predict achievement. Ethnicity, internalizing risk, and teacher support each predicted academic achievement. While ethnicity and internalizing risk negatively predicted academic achievement, teacher support positively predicted achievement.

From a prevention perspective, identifying students with emotional risk and intervening early may change the negative academic trajectory for students with internalizing risk. On the other hand, teacher preparation programs that include a focus on caring, supportive teachers may produce teachers, who through their practices, encourage positive academic outcomes. Teachers who show that they care for their students should feel empowered to know that when they support their students, they may positively influence students' academic achievement. This study underscores the challenge of investigating a process that is dynamic and complex. Furthermore, a multidimensional approach breeds its own complexity for any investigative process. However, this study also highlights the need for continued research to identify multiple factors that interact to influence students' achievement for a variety of populations, particularly the most vulnerable.

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APPENDIX A: Universal Screening Administration Script – Middle School

Please read the script verbatim. All parts to be read aloud to students are noted by bullet points. All instructions for you to follow are in *<italics>*. If you have any questions or problems, someone will be in the main office to help.

- “Today you will be asked to answer some questions about how you feel and how you have felt over the last few weeks. This is part of a project that our school is doing to learn more about what you think and feel about yourself and your school. Please be honest in your answers so we can use them to figure out how to help students in this school and other schools in the area. Your parents and your teachers will not see your individual answers. The school is truly interested in your opinion so we can know more about students like you – This is NOT a test and there are no right or wrong answers. When you get the survey, don’t start working. Please wait for me. We are all going to go through the instructions together.”

<Pass out BOTH surveys now – each student should get one BLUE survey and one GRAY survey. If you want to read the items out loud to the students to follow along, keep one copy of each for you to use.>

- “You will each get a pencil to thank you for helping out. Please use this pencil to complete your surveys.”

<Pass out pencils. The surveys CANNOT be done in pen.>

- “You have two surveys, one BLUE one and one GRAY one. We are going to start by filling in your information before answering any questions. Let’s start with the GRAY survey. Please fill in the information at the top ONLY now.”

<Walk around to be sure that every student is at the top of the gray survey.>

- “Please turn the BLUE booklet over to the front. Please complete all information on the front page of the BLUE survey now. Do not open the BLUE survey yet.”

<Wait until all students have completed the information on the front of the blue survey.>

- “Please open the BLUE booklet and follow along while I read the instructions...”

<Make sure students open their BLUE surveys. Open your example survey and read JUST the instructions from inside of BESS form aloud, starting at the words “Listed below...” at the top of the page marked INSTRUCTIONS.>

(OVER →)

- Please make sure you answer each question with how YOU THINK OR FEEL. If you want to change an answer that you've already marked, please erase it completely and fill in your new choice. Let's begin.”

<To keep confidentiality, avoid looking at any of the students' responses as they work.>

- **“After you are finished filling out both surveys, please place your GRAY survey INSIDE of your BLUE survey and I will collect them together.** After I collect both of your completed surveys, please work quietly until everyone else finishes.”

<As soon as all students are finished and all forms are collected, please return the entire envelope packet to the main office. Please return any incomplete surveys in the envelope. All students can keep their pencils – and you can keep any extra pencils if you wish.>

APPENDIX B: Motivation and Teacher Support Survey Items

GRAY = EFFICACY

TEAL = COST

RED = TEACHER SUPPORT

Please respond to these questions on the following scale:

1	2	3	4	5
Not at all True		Somewhat True		Very True

	1	2	3	4	5
1. I can do even the hardest work in class if I try.	1	2	3	4	5
2. I have to give up a lot to do well in school.	1	2	3	4	5
3. I am certain that I can master the skills taught in class this year.	1	2	3	4	5
4. Success in school requires that I give up other activities I enjoy.	1	2	3	4	5
5. Teachers in this school listen to what students have to say.	1	2	3	4	5
6. I'm certain I can figure out how to do the most difficult class work.	1	2	3	4	5
7. Teachers in this school consider students' feelings.	1	2	3	4	5
8. Teachers in this school want all students to feel respected.	1	2	3	4	5
9. Even if my class work is hard, I can learn it.	1	2	3	4	5
10. Teachers in this school care about how we feel.	1	2	3	4	5
11. I can do almost all the work in class if I don't give up.	1	2	3	4	5
12. Teachers in this school want students to respect each other's ideas.	1	2	3	4	5
13. I am confident that I know enough to help other students understand the concepts taught in class.	1	2	3	4	5
14. I am sure that I can figure out the answers to questions my teachers give me in class.	1	2	3	4	5
15. I am certain that I could figure out how to do an assignment on my own if I miss class.	1	2	3	4	5
16. Success in school requires a big investment of my time.	1	2	3	4	5
17. Teachers in this school treat students fairly.	1	2	3	4	5