

How Low-Income, Ethnic Minority Adolescents Make Possible Selves Real:  
The Role of Academic Self-Regulation Strategies

By

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## ABSTRACT

Predictors of academic self-regulation were investigated in low-income, ethnic minority youth. Specifically, self-efficacy, instrumentality, the salience of proximal and distal academic possible selves and participation in structured youth programs were examined in a sample of 71 low-income, ethnic minority youth recruited from a community center for teens. Results demonstrated that self-efficacy mediated the relationship between two predictors, instrumentality and the salience of a proximal possible self, and the outcome variable, academic self-regulation. The salience of a distal possible self and participation in structured youth programming did not significantly contribute to a model of factors predicting self-regulation. Limitations and directions for future research are discussed.

## INTRODUCTION

Adolescents make decisions that affect who they will become in the future (Adams & Montemayor, 1983; Oyserman & Saltz, 1993; Shoffner & Newsome, 2001). Such identity-forming decisions include what educational path to take, what profession or job to choose, and how to lead a healthy life (Erikson, 1959). Academic-related decisions can have considerable effects on the future identities of adolescents. In fact, in 1999, only .1% of young adults who had dropped out of high school obtained bachelor's degrees versus 18% of young adults who had graduated from high school (National Center for Education Statistics, 1999). Additionally, individuals who possess bachelor's degrees earn nearly twice as much as individuals with high school diplomas (Bureau of Labor Statistics, 2004). Thus, an adolescent's decision to form particular academic identities, such as becoming a college student or a college graduate, can have long-term benefits in terms of her lifestyle and well-being.

It can be especially difficult for some ethnic minority adolescents, namely adolescents of Latino and African American backgrounds, to make college-bound identity-forming decisions. For example, in 1999, 29.5% of Hispanic youth aged 16-24 and 13.8% of African American youth dropped out of high school (National Center for Education Statistics, 1999). Some low-income, ethnic minority adolescents engage in non-academic behaviors that may decrease their likelihood of completing high school, such as joining gangs (Walker-Barnes & Mason, 2001), becoming teen parents (Zabin & Cardona, 2002), or becoming

involved in drugs (Ernst, Grant, London, Contoreggi, Kimes & Spurgeon, 2003; Pantin, Schwartz, Sullivan, Coatsworth & Szapocznik, 2003). Ultimately, engaging in “risky” activities makes it less likely that individuals will create and sustain positive academic identities in adolescence and young adulthood.

Much research, as a result, has focused on how to prevent low-income, ethnic minority youth from engaging in these risky behaviors, including abstaining from premarital sex (Loewenson, Ireland, & Resnick, 2004), staying away from drugs (Compton & Pringle, 2004), and avoiding gang involvement (Walker-Barnes & Mason, 2001). From one standpoint, a prevention approach to research focused on the at-risk behavior of low-income, ethnic minority youth is viewed as an effective strategy for understanding how to keep young people from going “off course” in the development of their identities. However, this approach does not necessarily provide insights into what youth in this target population can do to develop the characteristics, strategies, and support needed to create and sustain positive identities, especially those pertaining to achieving higher education.

Positive youth development (PYD) is an emerging conceptual framework that emphasizes developing the potential each youth possesses (e.g., Damon, 2004). In contrast to a prevention approach, a PYD framework construes the developmental process as more than just overcoming “at-risk” circumstances. Instead, each youth’s development is an opportunity for him to cultivate valuable

qualities, engage in challenging experiences, and to increase his overall sense of possibility about the future.

Researchers who adopt the PYD model stress that participation in structured activities with supportive adults is one way youth can cultivate the qualities they need to thrive (Larson, 2000; McLaughlin, Irby, & Langman, 1994; Yowell & Smylie, 1999). Youth who participate in such programs are more likely to lead healthy adult lives (Larson, 2000) and, more specifically, to stay in school (Eccles, 2003) than youth who do not participate in structured activities. The current study is situated within the PYD model, in that all youth were recruited from a community youth organization in a low-income, ethnic minority neighborhood. It was assumed that youth in this population who participate in youth programs within community centers were striving to engage in positive youth development. Many low-income, ethnic minority adolescents may face barriers that lead to their overrepresentation in risky behaviors and under-participation in higher education. However, the aim of the current study was to unveil the ways in which youth within this population engage in academic strategies that may enable them to pursue higher education.

Toward that end, this study was focused on academic success strategies. In the academic motivation literature, it is largely recognized that the use of academic self-regulation strategies, or carefully monitored, goal-directed behavior, is predictive of academic achievement (Garcia & Pintrich, 1995; Kitsantas, 2002; Miller & Byrnes, 2001; Oyserman, Bybee, Terry, & Hart-

Johnson, 2004; Pintrich & De Groot, 1990; Zimmerman, 1990; Zimmerman & Martinez-Pons, 1990). The majority of academic motivation research, particularly concerning self-regulation, has focused on white, middle class youth or people who are already in college (Garcia & Pintrich, 1995; Howard, McGee, Shia, & Hong, 2000; Pintrich & De Groot, 1990), and little is known about how self-regulation strategies operate in low-income, ethnic minority youth. As mentioned, in much of the research focused on low-income, ethnic minority youth, school failure, absenteeism, and other “at-risk” behaviors have been examined, instead of academic success strategies such as the use of academic self-regulation. Thus, this study adds to the current literature by exploring how previously developed theoretical models of self-regulation operate in low-income, ethnic minority youth.

The current study builds upon two pre-existing theoretical frameworks that help to disentangle the factors predicting academic self-regulation. Expectancy-value theory suggests that in order to sustain motivation to achieve a goal, one has to expect that engaging in certain behaviors will lead to attaining the goal and one has to value the outcomes of the goal (Wigfield & Eccles, 1994). Self-efficacy, or confidence in one’s ability to succeed at a given task, is one construct in line with the “expectancy” component of expectancy-value theory (Bandura, 1994). Additionally, instrumentality, or the belief that achieving present goals will lead to achieving goals in the future, is a construct that aligns with the “value” component of expectancy-value theory (Wigfield & Eccles,

1994). Indeed, past research on self-regulation has found that self-efficacy and instrumentality effectively predict the use of academic self-regulation among adolescents (Garcia & Pintrich, 1995; Kitsantas, 2002; Pintrich & Degroot, 1990; Zimmerman & Martinez-Pons, 1990). In this study, self-efficacy and instrumentality were investigated in terms of their contributions to self-regulation in low-income, ethnic minority youth.

While expectancy-value theory helps to understand individuals' motivations to achieve goals, goal setting can also be thought of in terms of its implications for the self or identity. A possible selves framework provides insight into this perspective on goal setting. Possible selves are self-schemas, or self-relevant images, which reflect what individuals hope for or fear becoming in the future. Possible selves provide motivation for individuals to pursue their hopes and avoid their fears (Markus & Nurius, 1986). Thus, seeing particular future academic possible selves, such as becoming a college student or a college graduate, as important to one's future plan can provide impetus for change in current behavior (Oyserman et al., 2004; Oyserman, Gant, & Ager, 1995; Oyserman & Markus, 1995; Oyserman, Terry, & Bybee, 2002). The focus of the current study was on the power of possible selves to provide impetus to engage specifically in academic self-regulation strategies.

The current study brings together the theoretical frameworks of expectancy-value theory and possible selves in order to investigate the use of academic self-regulation strategies among low-income, ethnic minority youth

from Latino and African American backgrounds. In the following sections, the construct of self-regulation is defined and the key predictive constructs in this study, including self-efficacy, instrumentality, and the salience of proximal and distal academic possible selves, are described in greater detail. Finally, given the focus on youth who participate in their community youth organizations, attention is paid to structured programming participation as another potential predictor in this developing model.

### *Self-Regulation*

While the term self-regulation can refer to the management of behavior in many domains, such as internally with physical health and emotional well being (Hong, Tan, & Chang, 2004; Norman, Abraham, & Conner, 2002) or externally with interpersonal relationships or social situations (Boekaerts, Pintrich, & Zeidner, 2000), self-regulation in this study will refer specifically to learning and academic achievement. Self-regulated learning is situated within a social-cognitive perspective concerning goal setting and achievement. A self-regulated learner is defined by her awareness of the connection between regulatory processes and learning outcomes and her use of these strategies to achieve academic goals (Zimmerman, 1990).

Self-regulated learning involves a self-oriented feedback loop. This is a cyclical process that is comprised of three phases, whereby a student monitors her learning progress and responds accordingly. These responses take place either through changes in self-perception or changes in behavior (Zimmerman, 1990).

The first phase of self-regulation is termed forethought, which occurs before performance and refers to the processes that one engages in to prepare for action. The forethought phase involves goal setting, strategic planning, and self-motivation beliefs, such as self-efficacy, outcome expectations, and value. For example, if a high school student knew she had a final exam coming up, in order for her to study for the exam (i.e., engage in self-regulation strategies), she must first believe that studying for the exam would positively influence her grade, and she must also value receiving a good grade.

The second phase of self-regulation is the performance control phase. This occurs during learning and affects attention and actions. The performance control phase involves self-instruction, self-observation, and self-experimentation. Returning to the student studying for her exam, in the performance control phase she would think of study strategies that have worked for her in the past (e.g., making an outline or flashcards) and employ them.

The last phase of the cyclical process is the self-reflection phase. This is where each student responds to her efforts. She engages in self-judgment and self-reaction. Returning to the previous example, the high school student would respond to her studying behavior after receiving the grade for her exam. This grade would inform her regarding the efficacy of her strategies. The results of this self-reflection phase cycles back to the forethought phase and leads to either successful or impaired self-regulation strategy use. Whether or not self-regulation will be successful in future endeavors can depend on the internal (e.g., self-

judgment) or external (e.g., receiving a test grade) feedback the learner receives. This study focused on which motivational factors contribute to the first phase of self-regulated learning, or forethought.

The use of self-regulation has been found to be empirically related to academic achievement. Students who are self-regulated are more likely to reach their goals because they make conscientious plans and monitor their learning on a regular basis (Zimmerman, 1990). Students who engage in self-regulatory strategies have been shown to perform better in school than students who do not use these strategies as often (Miller & Byrnes, 2001; Pintrich & De Groot, 1990; Zimmerman, 1990). Additionally, self-regulated learners are more intrinsically motivated and are more likely to use cognitive strategies than students who are not self-regulated (Pintrich & De Groot, 1990). Lastly, students who use self-regulatory strategies are more likely to persist instead of give up in difficult situations than those who do not use self-regulatory strategies (Zimmerman, 1990; Zimmerman, 1995).

Thus, self-regulation is an effective method of measuring both a commitment to learning and academic achievement. Self-regulation might be a particularly important construct to consider when investigating academic achievement in low-income, ethnic minority youth, as much of the research investigating self-regulation has been conducted on white, middle class youth (Garcia & Pintrich, 1995; Howard et al., 2000; Pintrich & De Groot, 1990). Beyond the gap in the academic strategy literature focused on the target youth, it

is possible that the use of self-regulation strategies may be particularly important in the success of low-income, ethnic minority youth, given negative stereotypes concerning their perceptions about their abilities to achieve (Hudley & Graham, 2001). Kao (2000) found that ethnic minority youth reported having hopes and fears about the future, which incorporated the negative stereotypes associated with their respective ethnic groups. Thus, ethnic minority youth may especially benefit from the use of self-regulation strategies, in order to overcome these pervasive stereotypes and achieve their goals (Phinney, Baumann, & Blanton, 2001). The current study adds to the literature by investigating which factors contribute to self-regulation strategies in low-income, ethnic minority youth. Next, the four key predictors of academic self-regulation in this study (i.e., self-efficacy, instrumentality, proximal and distal academic possible selves) and one exploratory variable (i.e., participation in structured youth programming) are reviewed.

### *Self-Efficacy*

Self-efficacy refers to the belief in one's competence to exercise control over his actions and to achieve at a given task or life-event (Bandura, 1994; Zimmerman, 1995). Albert Bandura, a leading researcher in social cognitive theory and self-efficacy, outlined the ways in which self-efficacy affects cognitive and motivational processes. Within this framework, the realization of goals is preceded by thoughts and internal visualizations. Self-efficacy beliefs shape the way one conceptualizes attaining a given goal. If one has high self-efficacy

beliefs, he pictures succeeding. This imagined success story helps to motivate him when the time comes to take action. However, if he has low self-efficacy beliefs, he imagines failure scenarios. This self-doubt will make it difficult for him to move to action and to achieve his goal.

As previously suggested, being confident in one's ability to achieve academically can provide motivation to accomplish academic tasks (Nakata, Shiomi & Joireman, 1999). Self-efficacy has been shown to be related to overall academic achievement (Landine & Stewart, 1998; Schunk, 1995; Zimmerman, 1995). Specifically, self-efficacy has been positively correlated with grade-point-average (Bouffard-Bouchard, Parent, & Larivee, 1991; D'Amico & Maurizio, 2003; Lent, Brown, & Larkin, 1984), adjustment (Chemers, Hu, & Garcia, 2001; Miller et al., 1999), and engagement, effort, and attention in school (Caraway, Tucker, Reinke, & Hall, 2003). Additionally, undergraduate students with high self-efficacy beliefs persist longer in their majors (Lent, Brown, & Larkin, 1984) and consider a wider range of future career choices than those with low self-efficacy perceptions (Church, Teresa, Rosebrook, & Szendre, 1992).

Bandura (1994) identified four factors that positively influence self-efficacy. They include having previous experience with mastering a given task or activity, having a role model of someone who is successful at the task, having a social environment in which success at the task is widely accepted and encouraged, and having internal self-awareness concerning one's strengths and weaknesses. Self-efficacy is thought to form a perpetuating cycle, such that one

increases her sense of self-efficacy each time she succeeds at a given task, which leads to high levels of self-efficacy in the future. However, self-efficacy is also thought to be a dynamic aspect of one's self-concept, evolving throughout the lifespan.

The notion that self-efficacy is cyclical is in accordance with the cyclical nature self-regulation. Self-efficacy is a component of the self-regulation feedback loop and has been theoretically (Bandura, 1994, Zimmerman, 1990) and empirically (Nakata et al., 1999) related to self-regulation. In a study investigating which factors contribute to academic achievement, self-efficacy, along with self-regulation, were found to be the best predictors of performance (Pintrich & Degroot, 1990). Self-efficacy has been researched in its relationship to various aspects of self-regulation and in particular contexts. For example, self-efficacy has been shown to be predictive of self-regulated learning strategies such as cognitive strategy use (Wolters, Yu, & Pintrich, 1996), and monitoring working time and task-persistence (Bouffard-Bouchard et al., 1991). Self-efficacy is also predictive of self-regulation in specific subject domains such as math, language arts, (Garcia & Pintrich, 1995; Zimmerman & Martinez-Pons, 1990), science and history (Garcia & Pintrich, 1995). Based on the prior research, in the current study, it was expected that self-efficacy would be an important predictor of self-regulation.

### *Instrumentality*

A second key predictor of self-regulation is perceived instrumentality. Instrumentality refers to a value belief that achieving present goals will lead to achieving goals in the future. The focus in the current study was on academic instrumentality, or value beliefs regarding academic goals and achievement. Instrumentality is a construct framed under the “value” component of expectancy-value theory. Value has been associated with academic achievement (Bong, 2001; Eccles, Vida & Barber, 2004; Husman, Derryberry, Crowson & Lomax, 2004; Wigfield & Eccles, 2000). However, it is important here to define instrumentality as referring to a belief more specific than generally valuing education. Instead, instrumentality refers specifically to a goal-directed belief regarding education, such that attaining a short term educational goal (e.g., doing well in school) is a necessary step to achieving a long term goal (e.g., going to college or getting a desired job after graduation). Miller, DeBacker, and Greene (1999, p. 15) explain this distinction: “[Instrumentality is] not a measure of the future goal per se, rather it is a measure of the participant’s perceptions of the extent to which class performance or achievement is a step along a path to a valued future goal.” Thus, instrumentality is the view that education is an essential step in reaching future academic goals.

Instrumentality has been implicated in a number of academic beliefs and behaviors. For example, students with high instrumentality have higher grade-point-averages (Miller et al., 1999), pay more attention in class, and put more

effort into schoolwork than students with low levels of instrumentality (Steinberg, Dornbusch, & Brown, 1992). Instrumentality is also related to educational aspirations and self-efficacy beliefs in low-income, ethnic minority youth (Arroyo & Zigler, 1995; Ibanez, Kuperminc, Jurkovic, & Perilla, 2004). Those who expect to attend college and feel competent in their abilities to achieve academically also believe that achieving academically leads to future success.

Not only has instrumentality been implicated in students' achievement, it has also been linked to students' use of self-regulation strategies. Students with high levels of perceived instrumentality engage in more self-regulation strategies than students with low instrumentality (Kitsantas, 2002; Garcia & Pintrich, 1995). Garcia and Pintrich (1995) found that instrumentality was positively correlated with self-regulation and accounted for a unique portion of the variance in self-regulation scores. The notion that instrumentality is related to self-regulation is in accordance with the current theories of self-regulation, which emphasize motivational beliefs such as value and outcome expectations of future goals (Zimmerman, 1990). In other words, if one sees education as important because it will lead to future success, she is more motivated to manage and monitor her learning behavior.

Are self-regulation strategy use and instrumentality linked in low-income, ethnic minority youth? Interestingly, while the link between instrumentality and academic achievement has been consistent in research focusing on white students (Garcia & Pintrich, 1995; Kitsantas, 2002; Miller et al., 1999), there has been

some discrepancy as to how instrumentality operates in ethnic minority adolescents. For instance, Arroyo and Zigler (1995) found that African American and Latino students perceived education to be more instrumental than white students, even though research has shown that minority students display lower levels of achievement than white students (e.g., Taylor & Hudley, 1998). This finding may suggest that instrumentality is linked to achievement for white youth, but not for African American or Latino youth. However, other researchers have found a significant, positive correlation between achievement and instrumentality for African American (Steinberg, et al., 1992) and Latino adolescents (Ibanez, et al., 2004; Steinberg et al., 1992). The inconsistencies in these findings provide further evidence for the need to conduct research on instrumentality and other motivational constructs, such as academic self-regulation, in low-income, ethnic minority youth.

Results from previous research give us some important insights into how these theoretical constructs operate in relation to each other. In sum, the link between instrumentality and achievement has been largely recognized. Thus, in keeping with the broader expectancy-value framework, a model of factors predicting the use of self-regulation strategies begins to emerge, which includes self-efficacy, or the belief in one's abilities, and instrumentality, the belief that achieving present goals will lead to attaining future goals. Next, the contribution of a possible selves framework for predicting self-regulation is considered.

*Salience of Proximal and Distal Academic-Related Possible Selves*

Despite the associations among instrumentality, self-efficacy, and self-regulation in white students, there is still some debate about the nature of these relationships among ethnic minority youth, specifically low-income, ethnic minority youth. What is missing? Research has suggested that educational aspirations help predict academic achievement and attainment in low-income, ethnic minority youth (Brooks-Gunn, Guo, & Furstenberg, 1993; Kao & Tienda, 1998). Thus, it appears as though having high educational aspirations may also increase the likelihood of these youth engaging in academic self-regulation strategies. Rather than conceptualizing aspirations as goals or values, educational aspirations can be thought of as specifically identity-related (e.g., becoming a college student or college graduate).

A possible selves framework is useful for conceptualizing how future identities may motivate individuals to engage in current behavior, such as self-regulation. Possible selves are self-schemas, or personalized beliefs of what one hopes, fears, and expects to become in the future (Markus & Nurius, 1986). Hoped-for possible selves often represent the positive, adaptive selves one desires to become in the future, and feared possible selves represent negative selves one wishes not to become in the future. Derived from social-cognitive psychology, possible selves provide a cognitive link between future-oriented images and current behavior, such that individuals strive to become their hoped-for selves and avoid becoming their feared selves (Markus & Ruvolo, 1989). Generally, self-

schemas can help to monitor behavior because they inform the self-concept of which stimuli to pay attention to or to remember, especially those that are relevant to hoped for possible selves (Markus & Nurius, 1986).

Previous research has established the relationship between the content of possible selves and increased motivation for related activities, such as how delinquent hoped-for possible selves can predict engagement in delinquent activities (Oyserman & Markus, 1990) or how academic possible selves can predict engagement in academic activities (Oyserman et al., 1995; Oyserman et al., 2004). Additionally, interventions designed to enhance academic possible selves have been shown to increase school involvement and grades, while reducing the chances of attending summer school (Oyserman et al., 2002).

An essential feature of possible selves is the notion that they exist within a socio-cultural context. While possible selves represent individual hopes, fears, and expectations for the future, the selection of possible selves that one has to choose from depends on his social, cultural, and historical background. Thus, possible selves are not only reflections of what one individually hopes for or fears becoming, they also reflect one's culture, socio-economic status, psychosocial environment, and generation. This is particularly important to keep in mind when investigating possible selves in low-income, ethnic minority youth. It is possible that this group feels a limited sense of possibility about the future with regard to higher education, given their economic and educational disadvantages. In fact, researchers investigating the possible selves of minority youth have found that

these youth may have vague ideas about themselves in the future (Yowell, 2000) or may feel that their hoped-for possible selves are unlikely to come true (Oyserman & Markus, 1990). Unfortunately, ethnic minority youth have reported possible selves which reflect the negative stereotypes associated with their respective ethnic groups (Kao, 2000).

Possible selves influence engagement in “energized, organized activity,” which in turn influences effective performance (Markus & Ruvolo, 1989). Thus, possible selves have been theoretically tied to the monitoring and strategizing of goal-directed behavior, or self-regulation. Oyserman and colleagues (2004) asked low-income, ethnic minority youth about their possible selves for the following year, and their specific plans to achieve the possible selves. The researchers found that adolescents who had articulated self-regulatory strategies about how to achieve their hoped-for possible selves and avoid their feared possible selves spent more time doing homework, participated in class more, and improved their grades over time more than those without self-regulatory possible selves. Thus, students who have articulated self-regulation strategies for their possible selves are more likely to have favorable academic outcomes.

Another aspect of possible selves that can make them particularly powerful is salience. The more salient a possible self is, the more powerful it will be. Salience of possible selves refers here to how important a particular academic possible self, namely becoming a college student or college graduate, is to an individual’s future plan. For instance, a young man could have many possible

selves, such as becoming a musician, a college student, an athlete, and a teacher. Some of these possible selves may be more or less salient to him than others. That is, relative to his possible self of becoming a musician, his “becoming a college student” possible self might be less salient. Garcia and Pintrich (1995) examined the relationship between the salience of possible selves, perceptions of confidence in academic subjects, and self-regulation. Specifically, the researchers investigated the possible selves of seventh graders in particular academic domains, such as science. Although they found that self-efficacy was the strongest predictor of self-regulation, having salient possible selves in a particular academic domain (e.g., “being a science person”) explained a unique portion of the variance in self-regulation above and beyond the effects of self-efficacy.

There is a temporal aspect to possible selves that may make some possible selves more powerful than others. Bandura (1986) proposed that if goals are set far in the future (i.e., distal goals), they lose their motivational power because it becomes difficult for individuals to provide incentives and strategies to take action. Indeed, goals set for the near future (i.e., proximal goals) are more likely to motivate self-regulatory behavior than distal goals (Donovan & Williams, 2003; Latham & Seijts, 1999; Morgan, 1985). One might expect that proximity influences goal setting and attainment the same way for possible selves. However, there has been little research to date on the relationship between proximity and the attainment of possible selves. Thus, one of the aims of the present research was to investigate the predictive value of possible selves that are more proximal or more

distal for the use of self-regulation strategies. That is, the proximal possible self of becoming a college student may be more powerful than the distal possible self of becoming a college graduate.

In sum, academic possible selves, when salient and proximal, are likely to motivate change in behavior, or more specifically, to predict the use of academic self-regulation strategies. The current study builds upon Garcia and Pintrich's (1995) work on the salience of possible selves as a possible predictor for using self-regulation strategies. Rather than examining possible selves in particular content areas, however, the current research was focused on understanding how the salience of academic possible selves, namely that of being a college student and a working college graduate, may predict academic self-regulation in low-income, ethnic minority youth. Thus, the current study investigated the combination of academic self-efficacy, instrumentality of academic goals, and salience of proximal and distal academic possible selves in predicting self-regulation strategy use in low-income, ethnic minority youth.

#### *Structured Programming Participation*

As previously discussed, the focus of this study was on youth who spend time in their community center. Researchers have suggested that engaging in structured activities after school is one way of developing adaptive strategies that can empower youth (Larson, 2000; McLaughlin et al., 1994; Yowell & Smylie, 1999). The academic outcomes of engagement include higher grade-point-averages, higher likelihood of graduating, more overall education, and greater

enjoyment of school (Eccles et al., 2003; Kahne et al., 2001; Mahoney, Cairns, & Farmer, 2003). These activities ideally occur with supportive adult supervision, create opportunities for youth to engage in leadership positions, and are relevant to youths' everyday lives (Larson, 2000; Cargo et al., 2003; Weissberg & O'Brien, 2004).

Structured activities can include participating in extra-curricular activities (e.g., sports), religious groups, or community youth organizations. Each type of structured activity provides youth with opportunities to interact with older staff and peers, requires consistent participation, and increases the time that youth spend in safe environments. However, there is some disagreement in the literature regarding which kind of activity yields the best outcomes for youth. While some researchers propose that participation in any form of extra-curricular activities is sufficient (Mahoney, Cairns, & Farmer, 2003), other researchers have suggested that the ideal context for structured activities is community-based youth organizations (Larson, 2000; McLaughlin et al., 1994; Yowell & Smylie, 1999). Structured youth programs may be especially important contexts for youth because they promote leadership behavior and provide youth with social support from staff (McLaughlin et al., 1994, Yowell & Smylie, 1999; Larson, 2000). Additionally, adolescents have reported that community-based youth organizations are the places that feel most like "home" (Hirsch et al., 2000).

Youth organizations range in focus, size, and scope. Many of these organizations feature youth leadership programs, which train youth in conflict-

resolution, substance abuse prevention, and sexual health (McLaughlin et al., 1994). The specific curriculum is often determined by the youth, as opposed to being dictated by staff. Youth in leadership programs often facilitate workshops on these issues for the larger community. In this sense, youth in community-based organizations develop responsibility, leadership, and mediation skills that can be applied to other contexts in their lives (Yowell & Smylie, 1999).

Participation in structured youth programming may promote academic success and aspirations for higher education. Eccles, Barber, Stone, and Hunt (2003) found that adolescents who participated in structured activities, such as youth programs, had higher grade-point-averages, enjoyed school more, and were more likely to attend college than those who participated in other forms of extracurricular activities, such as academic clubs or athletic teams. This finding suggests that participation in youth organizations may promote self-regulation, due to the focus on developing leadership skills, conflict-resolution training, and being role models for the community. Yowell and Smylie (1999) proposed that there is a connection between participating in structured youth programs and academic self-regulation, arguing that community youth programs are ideal places to learn about self-regulation behavior. However, there has been little direct empirical work that examines links between structured programming participation and academic self-regulation.

Results from one study revealed that participation in structured programming may promote academic self-regulation. Dworkin, Larson, and

Hansen (2003), in examining the outcomes of engaging in after-school activities, found that many of the themes that emerged from participants' responses appeared to be components of self-regulation, although they were not acknowledged as being connected to self-regulation. These themes included gaining self-knowledge, setting realistic goals, learning time management, making an effort, and taking responsibility and control of actions. However, the aforementioned researchers did not differentiate between the types of after-school activities, and instead combined all types of activities together. Thus, it is unclear whether or not youth organization participation accounted for the positive outcomes youth gained from their involvement in after-school activities.

Whether or not structured programming participation predicts academic self-regulation strategies is an under-explored area of research. Participants in community youth organizations receive positive support for academics, they feel connected, and they learn. However, one might expect that youth who participate in structured youth programming would engage in more self-regulatory strategies than youth who generally spend time in their community center. Thus, a final, albeit exploratory, predictor in the current study was participation in structured community-based youth programs.

### *Present Study*

As previously mentioned, academic self-regulation has been associated with academic achievement. Self-efficacy and perceived instrumentality are factors that have been shown to be predictive of self-regulation. Additionally,

having salient possible selves has been suggested to be predictive of academic self-regulation. Participation in structured youth programming has been theoretically tied to promote self-regulatory behavior, but has not been linked empirically. In this study, these factors were combined and investigated empirically in low-income, ethnic minority youth.

The hypotheses associated with this study were as follows:

*Hypothesis 1:* Self-regulation was expected to be positively correlated with self-reported academic grades.

*Hypothesis 2:* Self-efficacy and instrumentality were expected to be positively correlated with each other and with self-regulation strategy use. Additionally, these variables were expected to predict the use of self-regulation strategies in a model of instrumentality and self-efficacy as predictors of self-regulation.

*Hypothesis 3:* Both the salience of a proximal (i.e., becoming a college student) and a distal (i.e., becoming a working professional with a four-year college degree) were expected to be positively correlated with self-regulation. The distal possible self of becoming a college graduate/working professional was not expected to be a significant predictor in the model.

*Hypothesis 4:* Instrumentality, self-efficacy, and the salience of a proximal possible self were expected to predict self-regulation. Each variable was expected to carry a unique portion of the variance in self-regulation scores.

*Hypothesis 5:* Participation in structured programming was expected to relate to self-regulation such that participants in community-based youth organizations were expected to have significantly higher scores on self-regulation than participants who were not involved in structured youth programs. Structured programming involvement was expected to account for a unique portion of the variance in self-regulation in a model of self-efficacy, instrumentality, and the proximal possible self as predictors of self-regulation.

## METHOD

### *Participants*

Participants were 71 male and female youth from a small, low-income community, hereafter referred to as Urbantown. The sample was gender-balanced (59.2% female) and although exclusively ethnic minority, it was predominantly Latino (88.7%). Participants' ages ranged from 13 to 18 years of age, with a mean age of 15.5 years (SD= 1.22). The sample represented all years of high school, with 23 freshmen, 27 sophomores, 14 juniors, and seven seniors. In terms of high school attendance, 47 of the participants attended the local public high school and 23 participants attended the local public technical high school, and one of the participants attended a local public high school in a neighboring town. The majority of the participants would be the first in their families to pursue a four-year college degree; 14.1% of the participants' mothers had graduated from a four-year college and 15.5% of the participants' fathers had graduated from a four-year college.

Urbantown is a small urban community in New England. Currently, Urbantown is 41% Latino (Third Tier Cities Project, 2002). Urbantown has a disproportionate percentage of families living in poverty; 22.6% of Urbantown families live under the poverty level, compared with 9.2% of families in the rest of the United States. Urbantown high school dropout rates are more than twice as high as the statewide average (Third Tier Cities Project, 2002).

Participants were recruited from the Urbantown Teen Center as part of a larger study on community participation during adolescence. The Urbantown Teen Center is a space where both male and female youth come to play games, do homework, and chat after school under adult staff supervision. The Teen Center is located in the downtown area of Urbantown, and most of the youth in this study lived within walking distance of it. Four community youth organizations in Urbantown run structured programming through a portion of the Urbantown Teen Center space. In addition to spending time at the teen center after school, 60.5% of the participants in the study participated in the structured programming of these four youth organizations.

### *Measures*

Participants received a survey in the form of a seven page packet, which contained measures to assess the constructs under study (See Appendix A).

*Self-regulation.* The Self-Regulation subscale of the Motivated Strategies for Learning, or the MSLQ (Pintrich & De Groot, 1990) was used to assess participants' use of self-regulation strategies. This subscale consisted of 8 items, which were measured on a 7-point scale ranging from 1 (not at all true of me) to 7 (very true of me). Sample items include: "I ask myself questions to make sure I know the material I have been studying" and "I work on practice exercises and answer end-of-chapter questions even when I don't have to." The Cronbach alpha value, measuring internal consistency, for the Self-Regulation subscale in this study was .76.

*Self-efficacy.* An adapted version of the Self-Efficacy subscale of the MSLQ (Pintrich & De Groot, 1990) was used to assess participants' academic self-efficacy. The self-efficacy subscale consisted of nine items, which were measured on a 7-point scale ranging from 1 (not at all true of me) to 7 (very true of me).

The original items were directed toward a specific high school class. These items were adapted to inquire about classes in general; thus, items with "this class" were changed to "my classes." For example, "Compared with other students in this class I expect to do well" was changed to "Compared with other students in my classes I expect to do well." The Cronbach alpha value for the Self-Efficacy subscale in this study was .90.

*Instrumentality.* An adapted version of the Perceived Instrumentality subscale of the Approaches to Learning Survey (Miller et al., 1999) was used to measure academic instrumentality. The subscale consisted of 5 items with a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

In the current study, the beginning phrase of each item was changed to make the items more general and less class-specific. For example, the first original item stated, "I do the work assigned in this class because my achievement plays a role in reaching my future goals." This was changed to, "Doing well in school plays a role in reaching my future goals." All other items were adapted in a similar manner, replacing the opening phrase of "for this class" with "doing well

in school.” The Cronbach alpha value for the Perceived Instrumentality scale in this study was .78.

*Possible selves salience.* Items to assess possible selves salience were constructed by the researcher in a manner similar to the approach used to assess possible selves salience in Garcia and Pintrich’s (1995) study. Participants were asked to think about themselves and what they wanted to become in the future and then were asked to rate how important possible future identities were to their future plans. Two of the identities were the target possible selves (college student and working professional with a four-year college degree), while four of the possible selves were filler questions (athlete, member of the military, community leader, and role model). Filler questions were used so that participants did not perceive that they needed to rate every item as being important to them, and these particular filler items were expected to provide that desired variability.

Specifically, the item used to assess the proximal academic possible self was:

“For some people, *becoming a college student* is an important part of their future plans. How important is *becoming a college student* to your future plan?” In

addition, the target question used to assess the distal academic possible self was:

“For some people, *becoming a working professional with a four-year college degree* is an important part of their future plans. How important is *becoming a working professional with a four-year college degree* to your future plan?”

Participants rated the salience of these possible selves in terms of how important

they were to participants' future plans, on a scale of 1(not at all important) to 7 (very important).

*Demographic questionnaire.* Participants answered demographic questions about age, grade in school, sex, ethnicity, academic grades, high school attended, and parental education level. This portion of the survey also asked participants about their employment status and level of involvement in community organizations, including their involvement in any structured programming in the organizations. Specifically, the structured programming question was phrased, "Do you participate in any community organization programs? If so, which ones?" These responses were coded for the presence or absence of participation in a structured youth program in a community organization.

*Interviews.* Four participants from the larger sample, two boys and two girls, were selected for interviews based on their variability on the survey measures. The interviews were semi-structured and included questions about participants' use of self-regulation strategies (framed in the interview as study or strategies), value of education, perceptions about college, and perceptions about possible future careers. Additionally, the interview protocol included questions concerning participants' involvement with community-based youth organizations, and how their experiences in the structured programs differed from their experiences of school. (For the full interview protocol, see Appendix B.)

The interviews were used to construct case studies, based on the notion that the presentation of contrasting case studies can be useful in illustrating quantitative findings and further developing a model of behavior (Yin, 2003). One male participant, Fernando, was Latino and was a junior at the local public high school. The other male participant, Jose, was Latino and was a sophomore at the local technical high school. Of the female participants, Tatiana was Latina and was a sophomore at the local public high school and Latoya was African American and was a junior at the local public high school. Specifically, Fernando and Latoya were chosen to represent cases of moderately high use of self-regulation and high relevance of self-regulation for the future, and Jose and Tatiana were chosen to represent cases of moderately low use of self-regulation and low relevance of self-regulation for the future.

### *Procedure*

Participants were recruited from the Urbantown Teen Center through flyers and direct recruitment by the researcher. Parental consent forms, in both English and Spanish, were sent home with participants. Parental and youth consent were required in order for participants to complete the survey. The surveys were completed individually, with supervision from the researcher in the Urbantown Teen Center, at a table in a semi-private office within this space. As literacy levels varied for this group of youth, all participants received headsets and tape recorders so that they could hear the survey read to them by a narrator on a cassette tape. Participants were instructed that they could shut off the headset at

any point in the survey if they were reading faster than the narrator. In this way, participants did not have to announce to the researcher if he or she wanted the headset, and this avoided the possibility that some participants could not read portions of the survey.

Participants were reminded that there were no right or wrong answers to any of the questions, and that their responses would be kept confidential. An identification number was placed on each survey, rather than the participant's name, in order to ensure that their responses would remain confidential.

Upon completion of the survey, participants were debriefed regarding the purpose of the study and the researcher or a research assistant answered any questions that participants had. Each participant was then provided a gift certificate to the local mall as a thank you for his or her participation.

The researcher invited four selected youth to participate in semi-structured interviews in order to further illustrate the quantitative findings of the study. These interviews were conducted in a private office in the Teen Center, and were digitally recorded and transcribed by the researcher. All identifying information was removed from the transcriptions in order to protect confidentiality. Each participant who was interviewed received an additional gift certificate to the local mall as a thank you for his or her participation.

## RESULTS

Pearson's correlations were conducted to determine the relationships between self-regulation and grades, self-efficacy, instrumentality, and the salience of both proximal and distal possible selves. Next, a hierarchical regression analysis was performed with proximal possible self salience, distal possible self salience, instrumentality, and self-efficacy as predictors of self-regulation. Based on these findings, a series of multiple regression analyses was performed to test self-efficacy as a possible mediator between the explanatory variables, instrumentality and the proximal possible self, and the outcome variable, self-regulation. Then, a series of regression analyses was performed to examine how participation in structured youth programs predicted self-regulation. Last, a path analysis was conducted to further examine the mediating role of self-efficacy.

*Preliminary Analyses: Demographic Variables*

Gender was entered as a dummy variable in a series of multiple regressions to determine whether there were any differences between male and female participants on self-regulation. Gender was not a significant predictor of self-regulation; male and female participants did not significantly differ on their use of self-regulation strategies. Age was analyzed in a similar manner and was not a significant predictor of self-regulation; participants' ages did not affect their use of self-regulation strategies. Thus, the proposed analyses were conducted with the entire sample, with male and female participants of all ages combined.

*Self-Regulation and Self-Reported Grades*

Pearson's correlations were conducted to examine the relationship between self-regulation and self-reported grades. As expected, self-regulation and self-reported grades were positively correlated ( $r = .38, p < .01$ ).

*Self-Regulation and Self-Efficacy and Instrumentality*

Another series of Pearson's correlations were conducted to test the previously established relationships between self-regulation and self-efficacy and instrumentality. As expected, self-efficacy and instrumentality were positively correlated ( $r = .45, p < .01$ ). As expected, both self-efficacy ( $r = .72, p < .001$ ) and instrumentality ( $r = .38, p < .01$ ) were positively correlated with self-regulation (see Table 1).

Table 1

*Correlations between Grades, Self-Efficacy, Instrumentality, the Proximal and Distal Possible Selves, and Self-Regulation (n = 71)*

Item	1	2	3	4	5	6
1. Grades	-					
2. Self-Eff.	.36**	-				
3. Inst.	.27*	.45**	-			
4. Prox. PS	.25*	.52**	.43**	-		
5. Distal PS	.17	.43**	.39**	.57**	-	
6. Self-Regulation	.38**	.72**	.38**	.40*	.20	-

Prox. PS = Proximal Possible Self (“Becoming a college student”)

Inst. = Instrumentality

Self-Eff. = Self-Efficacy

\*\*Significant at the .01 level (2-tailed).

\*Significant at the .05 level (2-tailed).

*Self-Regulation and Possible Self Salience*

To examine the hypothesized relationship between the proximal and distal possible selves and self-regulation, Pearson's correlations were conducted. As expected, the proximal possible self was positively correlated with self-regulation ( $r = .40, p < .001$ ). However, self-regulation was not significantly correlated with the distal possible self, becoming a working professional with a four-year college degree ( $r = .20, ns.$ ). As noted previously, age was entered in a series of regressions to determine whether age affected the salience of participants' proximal and distal selves. Interestingly, age was not a significant predictor of proximal possible self salience ( $\beta = -.02, ns.$ ) or distal possible self salience ( $\beta = .08, ns.$ ).

*Regression of Self-Regulation on Possible Selves, Instrumentality, and Self-Efficacy.*

A hierarchical regression was performed to examine the hypothesized model of the proximal possible self, instrumentality, and self-efficacy as predictors of self-regulation (see Table 2). The distal possible self, becoming a working professional with a four-year college degree, was not included in the model, as it was not significantly correlated with self-regulation (see Table 1). The first block in the hierarchical regression included the proximal possible self. Alone, the proximal possible self accounted for a significant portion of the variance in self-regulation ( $\beta = .40, p < .001$ ). Instrumentality was added into the regression in the next block and also accounted for a unique portion of the

variance in self-regulation ( $\beta = .36, p = < .05$ ). The proximal possible self and instrumentality carried significant portions of the variance in self-regulation in each other's presence (see Table 2). The next block added self-efficacy, which also accounted for a significant, unique portion of the variance in self-regulation ( $\beta = .68, p = < .001$ ). Interestingly, when self-efficacy was added to the regression model, the effects of the proximal possible self ( $\beta = .03, ns.$ ) and instrumentality ( $\beta = .05, ns.$ ) disappeared. In other words, the proximal possible self and instrumentality did not account for unique portions of the variance in self-regulation when self-efficacy was present in the model.

#### *Self-Efficacy as a Mediator of Instrumentality*

Because the proximal possible self and instrumentality were significant predictors of self-regulation without self-efficacy in the model, but were not significant predictors when self-efficacy was present in the model, self-efficacy was viewed as a possible mediating factor of either instrumentality, the proximal possible self, or both.

According to Baron and Kenny (1986), "a given variable may be said to function as a mediator to the extent that it accounts for the relation between the predictor and the criterion" (p. 1176). These researchers outlined three criteria to test for mediation. The first condition is that the variability in the independent variable (instrumentality) must account for a significant portion of the variability in the potential mediator (self-efficacy). The second criterion is that variability in

Table 2

*Summary of Hierarchical Regression Analysis with the Proximal Possible Self, Instrumentality, and Self-Efficacy as Predictors of Self-Regulation (n = 71)*

Block	Model	$\beta$	$R^2$	Adj. $R^2$	F
1.	Prox. PS	.40***	.16	.15	13.48***
2.	Prox. PS	.29*			
	Inst.	.36*	.21	.19	9.25***
3.	Prox.PS	.03			
	Inst.	.05			
	Self-Eff.	.68***	.52	.50	24.35***

*Note.* B represents the standardized beta for the coefficient.

Prox. PS = Proximal Possible Self (“Becoming a college student”)

Inst. = Instrumentality

Self-Eff. = Self-Efficacy

\* Significant at the .05 level

\*\* Significant at the .01 level

\*\*\* Significant at the .001 level

the mediator (self-efficacy) must significantly account for variability in the independent variable (instrumentality). Lastly, when the independent variable and the mediating variable are included in the model, the mediating variable must significantly account for the variance in the dependent variable and the effect of the independent variable is weakened. “Perfect” mediation occurs when the effect of the independent variable in this model is zero. In other words, for the third regression, the effects of instrumentality should weaken or disappear when self-efficacy is present in the model, and self-efficacy should account for a significant portion of the variance in self-regulation.

First, a simple linear regression analysis was performed, with instrumentality as the independent variable and self-efficacy as the dependent variable. As expected, instrumentality accounted for a unique portion of the variance in self-efficacy ( $R^2 = .21$ ,  $\beta = .76$ ,  $F(1, 69) = 18.22$ ,  $p < .001$ ). Next, a regression with instrumentality as the predictor of self-regulation revealed that instrumentality accounted for a significant portion of the variance in self-regulation ( $R^2 = .14$ ,  $\beta = .55$ ,  $F(1, 69) = 11.52$ ,  $p < .01$ ). Lastly, a multiple regression with instrumentality and self-efficacy as predictors of self-regulation revealed that self-efficacy accounted for a unique portion of the variance in self-regulation ( $\beta = .61$ ,  $p < .001$ ), while instrumentality ( $\beta = .09$ , *ns.*) did not ( $R^2 = .52$ ,  $F(2, 68) = 36.99$ ,  $p < .001$ ). These analyses suggested that self-efficacy mediated the relationship between instrumentality and self-regulation. That is,

when self-efficacy was controlled for, the relationship between instrumentality and self-regulation disappeared.

*Self-Efficacy as a Mediator of the Proximal Possible Self*

The proximal self of “becoming a college student” was positively correlated with self-regulation (see Table 1), but was not significant in a regression including self-efficacy as a predictor of self-regulation. Based on these findings, self-efficacy was tested as a possible mediator between the proximal possible self and self-regulation. The same criteria were used to test self-efficacy as a mediator of the proximal possible self as were used to test self-efficacy as a mediator of instrumentality.

The first regression analysis included the proximal possible self as a predictor of self-efficacy. Indeed, “becoming a college student” accounted for a unique portion of the variance in self-efficacy ( $R^2 = .27, \beta = .44, F(1, 69) = 25.27, p < .001$ ). The next regression analysis with “becoming a college student” as a predictor of self-regulation revealed that “becoming a college student” accounted for a significant portion of the variance in self-regulation ( $R^2 = .16, \beta = .30, F(1, 69) = 13.48, p < .001$ ). The final step in testing self-efficacy as a mediating variable between “becoming a college student” and self-regulation was a multiple regression with self-efficacy and “becoming a college student” as predictors of self-regulation. This analysis showed that self-efficacy accounted for a unique portion of the variance in self-regulation ( $\beta = .61, p < .001$ ), while “becoming a college student” ( $\beta = .03, ns.$ ) did not ( $R^2 = .52, F(2, 68) = 36.74, p <$

.001). The effect of “becoming a college student” on self-regulation disappeared when self-efficacy was included in the model. In other words, these analyses suggest that self-efficacy operated as a mediating variable between “becoming a college student” and self-regulation.

*Self-Efficacy as a Mediator Between Both Proximal Possible Self Salience and Instrumentality*

These results indicate that the initial hypothesis that self-efficacy, instrumentality, and the proximal possible self were predictors of self-regulation was not entirely supported. However, the previous analyses show that in a model of self-efficacy and instrumentality as predictors of self-regulation, self-efficacy operates as a mediator. Additionally, self-efficacy operates as a mediating variable in a model of self-efficacy and “becoming a college student” as predictors of self-regulation. Another series of regression analyses was performed to determine whether or not self-efficacy acted as a mediator between both instrumentality and “becoming a college student” and self-regulation.

The same criteria for testing mediation were used for this series of analyses as were used for testing self-efficacy as a mediator in the previous analyses. First, a multiple regression was conducted, with both instrumentality and “becoming a college student” as predictors of self-efficacy. This regression revealed that both instrumentality ( $\beta = .47, p < .05$ ) and “becoming a college student” ( $\beta = .33, p < .01$ ) accounted for unique portions of the variance in self-efficacy ( $R^2 = .33, F(2, 68) = 17.06, p < .001$ ). Second, a multiple regression was

performed including instrumentality and “becoming a college student” as predictors of self-regulation. In this regression, both instrumentality ( $\beta = .36, p < .05$ ) and “becoming a college student” ( $\beta = .22, p < .05$ ) accounted for significant portions of the variance in self-regulation ( $R^2 = .21, F(2, 68) = 9.25, p < .001$ ). Third, a multiple regression was conducted with instrumentality, “becoming a college student” and self-efficacy as predictors of self-regulation. In this analysis, self-efficacy accounted for a significant, unique portion of the variance in self-regulation ( $\beta = .60, p < .001$ ), while instrumentality ( $\beta = .08, ns.$ ) and “becoming a college student” ( $\beta = .02, ns.$ ) did not ( $R^2 = .52, F(3, 67) = 24.35, p < .001$ ).

Self-efficacy was shown to mediate the relationship between instrumentality and “becoming a college student,” and self-regulation. When self-efficacy was not present in the model, both instrumentality and “becoming a college student” accounted for unique portions of the variance in self-regulation. However, the effects of both instrumentality and “becoming a college student” disappeared when self-efficacy was present in the model. In other words, instrumentality and “becoming a college student” were found to be predictive of self-efficacy, and self-efficacy was predictive of self-regulation.

#### *Self-Regulation and Structured Youth Program Participation*

To assess whether or not those who participated in youth organizations engaged in more self-regulatory behavior than those who did not participate in youth organizations, structured programming participation was entered as a dummy variable in the first block of a hierarchical regression analysis. This first

block revealed that participation in structured programming accounted for a significant portion of the variance in self-regulation when the variable was entered alone ( $\beta = .48, p < .05$ ). The subsequent blocks in the hierarchical regression revealed that participation in structured programming did not account for a unique portion of the variance of self-regulation in the presence of any other variables (see Table 3). That is, although participation in structured programming significantly contributed to self-regulation alone, it was not a strong enough predictor to carry a unique portion of the variance in self-regulation in the presence of other variables. Possibly, this was the case because although structured programming was a significant predictor of self-regulation, it just reached the threshold of significance ( $p = .04$ ) and accounted for a small amount of the variance in self-regulation ( $r^2 = .05$ ). Adding variables into a regression model causes each variable to lose power, as the degrees of freedom increase with the appendage of each new variable. Thus, inserting other variables into the model could have been enough to cause structured programming to be insignificant.

It is also possible that structured programming could have been mediated by another variable. If participation in structured programming was being mediated by another variable, its effect on self-regulation would weaken or disappear in the presence of the mediating variable. Thus, a series of multiple regression analyses was conducted to determine whether self-efficacy, instrumentality, or “becoming a college student” were mediating the relationship between structured programming and self-regulation.

Table 3.

*Summary of Hierarchical Regression Analysis with the Structured Programming Participation (n = 71)*

Block	Model	$\beta$	$R^2$	Adj. $R^2$	F
1.	S.P.P	.24*	.05	.04	4.20*
2.	S.P.P.	.17			
	Prox. PS	.37**	.19	.17	8.13**
3.	S.P.P.	.15			
	Prox. PS	.28*			
	Inst.	.23	.23	.20	6.88***
4.	S.P.P.	.09			
	Prox. PS	.02			
	Inst.	.04			
	Self-Eff.	.67***	.53	.50	18.54***

*Note.*  $B$  represents the standardized beta for the coefficient.

S.P.P = Structured Programming Participation

Prox. PS = Proximal Possible Self (“Becoming a college student”)

Inst = Instrumentality

Self-Eff = Self-Efficacy

\* Significant at the .05 level

\*\* Significant at the .01 level

\*\*\* Significant at the .001 level

As mentioned, the first step in testing a mediating relationship is to determine whether the variability in the predictor variable (structured programming participation) accounts for a significant portion of the variability in the potential mediator (i.e., instrumentality, the proximal possible self, or self-efficacy).

Three multiple regressions revealed that structured programming did not account for a significant portion of the variance in instrumentality, “becoming a college student,” or self-efficacy (see Table 4). The previous analyses suggest that none of these variables acted as mediators between structured programming and self-regulation. Although participation in structured programming was related to self-regulation, this variable was not robust enough to account for a unique portion of the variance in self-regulation. Thus, the hypothesis that participation in structured programming was a significant predictor in a model of self-efficacy, instrumentality, and “becoming a college student” as predictors of self-regulation, was not supported by the results.

#### *Path Analysis*

According to Sewall Wright (1934), who developed path analysis in the early part of the twentieth century, “...the method of path coefficients is not intended to accomplish the impossible task of deducing causal relations from the values of the correlation coefficients” (as cited in Pedhazur, 1982). Alternatively, path analysis is a quantitative method of providing support for a particular theoretical hypothesis of how variables may interrelate. In this study, path

Table 4

*Summary of Regression Series with Community-Based Youth Organization Participation as a Predictor of the Proximal Possible Self, Instrumentality, and Self-Efficacy*

Regression	Outcome Variable	$\beta$	$R^2$	Adj. $R^2$	F
1.	Prox. PS	.17	.03	.01	2.13
2.	Inst.	.18	.03	.02	2.25
3.	Self-Eff.	.20	.04	.03	3.09

*Note.*  $B$  represents the standardized beta for the community organization participation coefficient.

Prox. PS = Proximal Possible Self

Inst. = Instrumentality

Self. Eff. = Self-Efficacy

\* Significant at the .05 level

\*\* Significant at the .01 level

\*\*\* Significant at the .001 level

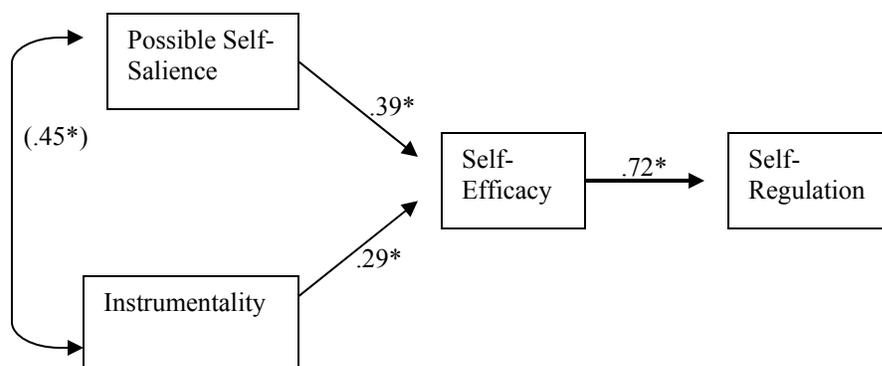
analysis was used to further explore the hypothesis that self-efficacy operated as a mediator between the two explanatory variables, proximal possible self salience and instrumentality, and the outcome variable, self-regulation. This hypothesis was created based on the results of the previously discussed regression analyses, which suggested that self-efficacy operated as a mediator.

The hypothesized model included indirect effects of possible self salience and instrumentality on self-regulation, and the direct effects of self-efficacy on self-regulation (see Figure 1). The indirect effects were represented as paths between the two explanatory variables (i.e., proximal possible self salience and instrumentality) and the outcome variable (i.e., self-regulation). The direct effect was represented as a path between the potential mediator (i.e., self-efficacy) and the outcome variable (i.e., self-regulation). It was hypothesized that the path between proximal possible self salience and self-efficacy would be significant. It was also expected that the indirect path between instrumentality and self-efficacy would be significant. Last, it was expected that the direct path between self-efficacy and self-regulation would be significant. Only the significant relationships were included in this model, as the hypothesized model was used to further explore relationships suggested by the regression analyses. Thus, structured programming and salience of the distal possible self were not included in the path analysis.

Path coefficients and the path model were analyzed using the statistical package, Amos (SmallWaters, 1995). A path coefficient is considered significant

### Figure Caption

*Figure 1.* The hypothesized model: Self-efficacy as a mediator between the explanatory variables, proximal possible self salience and instrumentality, and the outcome variable, self-regulation.



*Note.* The numerical relationship between possible self salience and instrumentality is indicated in parentheses, as it is a correlation, not a path coefficient.

\*\*  $p < .01$

\*  $p < .05$

**→** Paths in bold represent direct effects on self-regulation

→ Paths not in bold represent indirect effects on self-regulation

if its value is greater than .2 (Pedhazur, 1982). As expected, the indirect path between proximal possible self salience and self-efficacy was significant ( $P = .39$ ). Additionally, the indirect path between instrumentality and self-efficacy was significant ( $P = .29$ ). These results suggest that proximal possible self salience and instrumentality had indirect effects on self-regulation. Additionally, these findings are in accordance with the series of regression analyses suggesting self-efficacy operated as a mediator between the explanatory variables, proximal possible self salience and instrumentality, and the outcome variable, self-regulation.

Lastly, as expected, the direct path between self-efficacy and self-regulation was significant ( $P = .72$ ). This finding was consistent with the series of regression analyses demonstrating that self-efficacy significantly contributed to self-regulation.

The correlation between possible self salience and instrumentality was also added to the model, based on previous analyses revealing that these two variables were correlated ( $r = .45, p < .01$ ).

The hypothesized model accounted for 52% of the variance in self-regulation scores. A chi-square test can be used to assess whether or not a hypothesized model corresponds to a set of data (Pedhazur, 1982). The chi-square test for the hypothesized model in this study revealed no significant difference between the model and the data,  $\chi^2(2) = 0.53$  (*ns.*). Thus, the chi-square test suggested that the hypothesized model was a good fit for the data.

Another method of assessing goodness of fit is the comparative fit index (CFI). The values of a CFI range from 0 to 1, with values of .9 or higher indicating good fit, and a value of 1 indicating perfect fit (Pedhazur, 1982). The CFI for the hypothesized model was 1.0, indicating perfect fit.

The path analysis supported a theoretical model where proximal possible self salience and instrumentality had significant, indirect effects on self-regulation, mediated by self-efficacy.

*Case Illustrations: The Model Enacted*

Four case studies are presented to illustrate, in a narrative form, how the key constructs interrelated. Specifically, one male participant, Fernando, and one female participant, Latoya, are described to illustrate youth who exhibited moderately high self-regulatory strategy use and high relevance of self-regulation use to the future, and one male participant, Jose, and one female participant, Tatyana, are described to illustrate youth who exhibited lower self-regulation strategy use and lower relevance of self-regulation use to the future. For a summary of each interviewee's scores on self-regulation, self-efficacy, instrumentality, and the proximal and distal possible selves, see Table 5.

*Case illustrating moderately high self-regulation, high relevance to future: Latoya.* Latoya was a junior at the local public high school. She received mostly A's and B's on her report cards and described herself as a good student who did all her homework. She planned to major in psychology in college and

Table 5

*Interviewees' Scores on Target Measures*

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	Latoya	Fernando	Tatiana	Jose
Self-Regulation	4.88	4.50	3.75	3.38
Self-Efficacy	6.65	5.11	4.11	5.22
Instrumentality	5.0	3.0	4.40	4.6
Proximal Possible Self	7.0	7.0	6.0	5.0

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wanted to be a counselor for youth in the future. “Becoming a college student” was a salient possible self for Latoya, according to both her interview and her survey. In her interview, when asked how often she thought about going to college, Latoya stated, “Every day. It motivates me more.” In addition, Latoya reported high instrumentality on her survey. Then, in her interview, when asked whether or not it was important to get good grades, she replied, “Yah, cuz I want to go to college and I can’t get into the college I want to go to unless I study and get good grades.” Similarly, when asked why it was important to her to go to college, she replied, “I think I need to go to college to be successful.” Latoya was confident in her abilities to achieve and was positive that she would go to college in the future.

Latoya had been a member of the Strong Girls youth organization, in a structured leadership program, for the past year. Latoya spent time at the Teen Center almost every day and said that she had learned a lot from being involved in one of the Strong Girls leadership programs. She said, “You learn the simplest things like how to get along with people and how to solve problems, to learning about STDs and homophobia, and self-esteem, and things like that.” In her interview, she remarked that being involved in the program had taught her leadership skills that she could use in school, especially when working with other students in her classes. Latoya shared, “Like when everybody’s slacking off in my group- [being a member of Strong Girls] taught me to take charge instead of just sitting there and being all shy and waiting for someone else to do the work for

me.” In sum, Latoya was a good example of someone who engaged in self-regulation strategy use, believed in her abilities, saw the benefits of achieving in school, and had a salient possible self of becoming a college student.

*Case illustrating moderately high self-regulation, high relevance to future: Fernando.* Fernando was a junior at the local public high school and wanted to be a professional football player in the future. He received mostly B’s and C’s on his report cards. Like Latoya, Fernando engaged moderately high self-regulation strategies. Although he occasionally did his homework, he listened to the teacher most of the time and took notes in class. Fernando considered himself to be a decent student. In his interview, he remarked that he enjoyed learning and having fun in school.

Fernando reported a moderate level of instrumentality on his survey. When asked how important becoming a college student was to him, he replied, “Well it’s not important for *me*, it’s important because I’d like to go to college because I like to try a lot of stuff-when I’m in college, I’d like to be on the football team...” This response suggests that Fernando’s reasons for going to college went beyond a belief that education is instrumental to future success; instead, perhaps going to college was important to him because he thought that college would be an exciting experience for him. However, when asked what he could be doing to ensure that he would go to college in the future, Fernando said, “This level [high school] I got to do real good so I could make it to the next level, and that’s college.” Similar to Latoya, becoming a college student was a salient

possible self for Fernando and he said it was very likely that he would go to college in the future. He thought about going to college often: “When they talk about [college] in school, then it’s in my head and I think about it all the time.”

Fernando spent time at the Teen Center often and was also involved with a structured youth program in Urbantown focused on the performing arts. He said that the program was different from school, because he was more relaxed at the program and that sometimes he got bored at school, but not at the program. Additionally, he said he learned skills in this program that helped him in school. “[This program] taught me how to listen, how to speak, how to study, how to do lots of stuff...” It appeared that Fernando’s involvement in the organization taught him self-regulatory skills that he was able to use to help him achieve in school. In sum, Fernando was a good example of someone who engaged in self-regulation strategies, was aware of the benefits of academic achievement, and had a salient possible self of becoming a college student in the future.

*Case illustrating moderately low self-regulation, lower relevance to future: Tatiana.* Tatiana was a sophomore at the local public high school. She received mostly C’s on her report cards, although she said her grades fluctuated frequently. When asked what people do to get good grades, she said, “I think some of them are naturally smart. I can sit there and pay attention, but still I don’t get good grades.” Most of the time, she did not do her homework because she said her book was too heavy to bring home, or she forgot it at school. These behaviors

and beliefs indicate moderately low self-regulation strategy use, consistent with her score on her survey.

Tatiana wanted to work with web page design in the future and explained that was the reason she wanted to go to college. Tatiana appeared to view education as instrumental to her future, in that she would like to go to college in order to increase her knowledge and skills concerning her hoped-for career, becoming a web-page designer. However, Tatiana was unable to articulate the strategies she could use to prepare to go to college in the future. In her interview, when asked what people can do in the present to make sure they go to college in the future, she replied, “I don’t really know...I know people who got into college who got F’s on their report cards and still made it to college.” She did not believe that she needed to work hard in order to go to college, and was therefore less motivated to use self-regulation strategies. Thus, although she said that she wanted to go to college, she did not necessarily see self-regulation strategies as relevant, or required, for pursuing a future career or for becoming a college student.

Tatiana had participated in Strong Girls for two years. She also frequented the Teen Center. As she said, “It’s my life. I have nothing else to do after school. I am here every single day.” When asked if she felt close to the staff and peers at Strong Girls, she replied, “I feel like family with them.” Although Tatiana did not believe that being involved in Strong Girls had directly helped her performance in school, she said of her organization, “I learn the stuff they don’t teach us at

school.” Overall, Tatiana was a good example of someone who did not engage in self-regulation strategies, had moderately low self-efficacy beliefs, did not believe as much in her abilities to achieve, did not see the benefits of higher education, and had a possible self of going to college that was not as salient to her.

*Case illustrating moderately low self-regulation, lower relevance to future: Jose.* Jose was a sophomore at the local technical high school and wanted to become an actor in the future. He received mostly C’s and D’s on his report cards. Jose thought of himself as a bad student- “I’m a bad student because I don’t do my work...I fool around.” This statement suggests that Jose was aware of the connection between his behaviors and outcomes, in terms of his grades. Indeed, Jose remarked in his interview that he did his homework only when he was bored. In school, Jose said he only did the work for some classes, such as English and Math, which were the subjects that he enjoyed the most. Jose said that becoming a college student was only somewhat important to him: “It’s not that important. I’d like to go to please my parents, but not to please myself.” When asked if going to college would help him to become a successful actor in the future, he replied that it “depends on what kind of college you go to. If you go to a performing arts college, then it will help you.” Similar to Tatiana, Jose could see how going to college could benefit him, but not necessarily for his desired line of work.

Jose went to the Teen Center to hang out twice a week. He was part of a performing arts youth organization in the community and had been involved in this organization on and off for seven years. Jose spoke highly of this organization

and remarked that spending time there was different from school because “there’s no wrong way to act. In school you have to act a certain way, you have to be focused, and in [performing arts youth organization] we focus, too, but it feels different...” Jose said that his organization taught him how to present himself to people, and this had helped him to work with others in school. In sum, Jose was another good example of someone who did not engage in self-regulation strategies, thought of himself as a poor student, and did not have a salient possible self of becoming a college student.

*Cross-case summary.* The findings from these interviews bring to light the complex relationships among self-efficacy, instrumentality, possible selves, and self-regulation. For Latoya and Fernando, the proposed model of factors predicting self-regulation were illustrated in the positive direction: they engaged in self-regulation behaviors, had high self-efficacy beliefs, viewed education as instrumental to success, and had salient possible selves for the future. In contrast, Tatiana and Jose did not engage in self-regulation behaviors, saw themselves as poor students, and although the possible self of becoming a college student was important to them, the use of self-regulation strategies were not necessarily required in order to pursue their desired careers or to get into college.

Furthermore, interviewees’ responses suggest that self-regulation strategy use in the academic domain could be supported by participation in structured youth programming. Latoya, Fernando, and Jose were able to articulate ways in which their involvement in structured youth programs taught them skills that

helped them in school. Conversely, Tatiana could not articulate any skills that she had learned in her leadership program that helped her achieve in school. The variability in participants' responses regarding the effects of structured program participation on academic self-regulation is consistent with quantitative results, which revealed that participation in structured programming was not a good predictor of academic self-regulation strategy use.

## DISCUSSION

The primary aim of this study was to examine the relationships among self-efficacy, instrumentality, possible self salience and self-regulation in low-income, ethnic minority youth. Consistent with past research, each one of these variables was related to self-regulation. It is noteworthy that this study found the combination of self-efficacy, instrumentality, and the salience of a proximal possible self (i.e., becoming a college student) served as an effective predictive model of academic self-regulation; this model explained over half of the variance in self-regulation scores. Thus, the results from this study revealed that bridging two theoretical frameworks, expectancy-value theory and a possible selves framework, was fruitful for predicting academic self-regulation among low-income, ethnic minority adolescents.

However, this study found that in a model including self-efficacy, instrumentality, and possible self salience, each variable did not account for a unique portion of the variance in self-regulation. Instead, self-efficacy operated as a mediating variable between the explanatory variables, proximal possible self and instrumentality, and the outcome variable, self-regulation. In previous research, self-efficacy did not mediate the relationship between possible self salience and self-regulation (Garcia & Pintrich, 1995) and self efficacy did not mediate the relationship between instrumentality and academic achievement (Arroyo & Zigler, 1995). There are several reasons this might mediation have

occurred, especially given the focus of the current study on low-income, ethnic minority youth.

*Understanding self-efficacy as a mediator for the target population*

First, while some researchers have used both instrumentality and self-efficacy to examine the predictors of other constructs, such as self-regulation (Garcia & Pintrich, 1995), achievement motivation (Ibanez et al., 2004) and grade-point-average (Miller et al., 1999), there was no predictive relationship reported in these studies between instrumentality and self-efficacy. Thus, the current study provides new findings concerning the relationship between self-efficacy and instrumentality with regard to self-regulation.

The finding that instrumentality was related to academic self-regulation is consistent with the previous research that found a positive relationship between instrumentality and achievement in low-income, ethnic minority adolescents (Ibanez et al., 2004; Steinberg et al., 1992). However, the results from the current study unveil additional insights. This study found a mediating relationship between self-efficacy and instrumentality with regard to self-regulation.

According to the results of this study, for low-income, ethnic minority adolescents to believe in their abilities to achieve in academics, they may also need to believe that achieving in academics will lead to future success. Perhaps this is because instrumentality can be thought of as general efficacy beliefs regarding education, and if one has high efficacy beliefs about education in general, he will have high efficacy beliefs regarding his own abilities.

Additionally, the fact that participants in this study were recruited from a community center may have had an influence on the finding that instrumentality was predictive of self-efficacy. Having role models who have succeeded at a given task is one way that individuals can cultivate self-efficacy beliefs (Bandura, 1994). Researchers have suggested that having positive role models may influence academic achievement, especially for low-income, ethnic minority youth (Bryant & Zimmerman, 2003). If youth in this population do not have role models who have entered college or who have college degrees, they may not see education as instrumental, and therefore may not have high efficacy beliefs concerning their own confidence in academics. However, youth who spend time at community organizations, regardless of whether or not they participate in structured programming, are surrounded by adult staff members--many who are in college or who have college degrees. For example, the majority of the interviewees mentioned site staff members when asked who they knew who was enrolled in college. Thus, participants could have gained instrumentality beliefs by being surrounded by role models who had attended college and were using their college degrees to enhance their careers. Being surrounded by such staff could have consequently led to increases in their self-efficacy beliefs, which in turn affected their use of self-regulation strategies.

Second, the results from the current study provide new findings for developments in the research on possible selves. The relationship between possible selves and self-efficacy is understudied. While self-efficacy is often

implicated in task-specific goals, possible selves are not often thought of in terms of goal attainment. Instead, possible selves are conceptualized in terms identity development, leading the bodies of literature regarding possible selves and self-efficacy to be disjointed. Despite the lack of research examining possible selves and self-efficacy simultaneously, the results of this study revealed that the proximal possible self, that of becoming a college student in the future, was a significant predictor of self-efficacy in the mediation model.

Self-efficacy involves mental pictures of success or failure scenarios (Bandura, 1994). These visualizations can serve to motivate one to take action to pursue a given goal. Based on the results of this study, one can deduce that in order to have high self-efficacy beliefs about her abilities to achieve in school, a student must not only picture herself achieving in school, but must also have a schema of becoming a college student that is important to her. Instead of strictly understanding her self-efficacy as thoughts concerning her confidence, the results of this study showed that her self-efficacy can be understood partly as the salient desire to becoming a college student. When this hoped-for self is salient, she believes that she can achieve, which motivates her to engage in self-regulatory behavior.

The results from this study revealed a mediating relationship of self-efficacy between the perceived possibility of becoming a college student and self-regulation. The finding that self-efficacy mediated the relationship between the perceived possibility of becoming a college student and self-regulation may be

partially explained by the sample in this study: low-income, ethnic minority youth. Because the vast majority of the participants in this study would be the first in their families to attend two-year or four-year colleges, the possible self of becoming a college student might be inherently linked to their abilities to achieve. Going to college may not be perceived as likely for this sample, and thus a component of a young person believing in his abilities to achieve (i.e., self-efficacy) may be the belief that going to college is possible for him and important to him. This may not be the same case for white youth or for youth who come from more affluent backgrounds, as youth in those populations may be more likely than low-income, ethnic minority youth are to believe that they will get into college. Thus, becoming a college student may not be so closely linked to their academic self-efficacy beliefs. Perhaps, in other groups of adolescents, the possible self of becoming a college student may not be mediated by self-efficacy beliefs. This may explain the lack of mediation in previous research (Garcia & Pintrich, 1995), which did not focus exclusively on a low-income, Latino sample.

*Temporal Aspects of Possible selves: College Student vs. College Graduate*

One of the hypotheses in this study was that both the proximal and distal possible selves would be correlated with self-regulation. This hypothesis was only partially supported: the proximal possible self was correlated with self-regulation, whereas the distal possible self was not. However, the hypothesis that the distal possible self was not predictive of self-regulation, in a model with other variables, was supported by the results. This finding is consistent with past research on the

proximity of goals, which has shown that proximal goals have more motivating power than distal goals (Donovan & Williams, 2003; Latham & Seijts, 1999; Morgan, 1985). The case studies supported the quantitative finding that the proximal possible self held more motivational power than the distal possible self. When asked why the interviewees believed it was important to do well in school, the two interviewees who displayed high self-regulation strategy use mentioned the desire to make it to college, as opposed to the desire to have a future hoped-for career. Additionally, because many of the youth in this sample would be the first in their families to attend a four-year college, as mentioned, the idea of being a college graduate may indeed feel very far into the future for these youth, and would thus not be predictive of self-regulation strategy use.

Although findings revealed that the distal possible self was not a significant predictor of self-regulation strategies, this result must be interpreted with caution. While it may be that the distal possible self was not a significant predictor of self-regulation that distal possible selves are said to have less motivating power than proximal possible selves, this finding may be a result of the way the question was asked in the current study. The distal possible self item in the survey was phrased: “How important is becoming a working professional with a four-year college degree?” It is possible that participants may have been responding to one of the three aspects of this item, as the question asked participants to simultaneously imagine themselves a) attending a four-year college, b) graduating, and c) working in a professional job. Possibly, participants

imagined themselves with regard to one or two of the parts of this question, instead of imagining themselves accomplishing all aspects of the self described in the question and then responding to how important that possible self was to them. For example, if a participant saw herself graduating from a four-year college, but not necessarily as a working professional, she may have answered that the distal possible self was not that important to her, because she did not want to become a working professional. On the other hand, she may have responded that that the distal possible self was very important to her, because she wanted to graduate from a four-year college. Thus, with items that inquire about more than one question, it is not possible to tell whether or not participants responded to one or more of the components of the question.

#### *Participation in Structured Programming*

An exploratory variable, structured programming, was hypothesized to predict self-regulation. While participation in structured programming was also positively correlated with self-regulation, it accounted for a small amount of the variance in self-regulation, and was not a significant predictor of self-regulation in the presence of any other variables. Thus, structured programming participation did not significantly contribute to a model of factors predicting self-regulation.

The case studies provided some insight into the role that structured program participation had in participants' experiences of self-regulation. For some youth, participating in the structured programs taught them skills such as how to assert leadership skills and how to listen to others. However, other

interviewees did not see how their involvement in structured programming was connected to school strategies. Researchers examining the academic effects of structured youth programs have suggested that program staff should make a pointed effort to include opportunities to learn self-regulatory skills (Yowell & Smylie, 1999). Unfortunately, many structured youth programs are in particularly stringent economic conditions and survive “grant to grant” (McLaughlin et al., 1994). Thus, the curricula employed by staff can be dictated by the nature of their current funds. It is possible that the results in this study do not demonstrate a predictive relationship between structured programming and self-regulation because program staff are required to focus their curricula on other content, which is determined by the composition of their funds.

Finally, it is possible that students were not able to transfer skills learned from the structured program context to the school context. Participants who were interviewed expressed their loyalty to their organizations, remarking that they preferred their programs to school; they felt as though they could be themselves more at the programs, and that they felt the staff and peers in the programs were “like family” to them. Not surprisingly, affect toward school is related to academic achievement (Eccles et al., 2003). Thus, it is possible that structured youth program participation did not emerge as a significant predictor of self-regulation in the presence of other variables because low-income, ethnic minority youth who participate in structured programs do not differ from youth who do not participate in structured programs in terms of their affect toward school, which

can be low (Eccles et al., 2003). As one of the interviewees remarked so candidly, “At school it’s like you’re in a jail, here it’s like you’re at your house...I wish [Strong Girls] had a school, it would be so much better.”

#### *Limitations and Directions for Future Research*

One limitation of the present research is that although the sample represented the target population of low income, ethnic minority youth, it was still relatively homogeneous in that it was predominantly Latino. Results from previous research have revealed that the experience of motivation and academics may be different for Latino adolescents than other ethnic minority groups (Ibanez et al., 2004). Specifically, school belonging and parent involvement may be particularly important predictors of achievement for Latinos. Thus, future research could examine this hypothesized model self-regulation in a more ethnically diverse sample, or in samples that were predominantly African American or Caucasian. Possibly, this would help to disentangle the influences of ethnicity and social class when constructing images of the future and the use of academic success strategies.

A second limitation of this research is that participants who attended the local public high school and participants who attended the local technical high school were grouped together. While “becoming a college student” was predictive of self-regulation with both groups in the sample, it may have been useful to construct a possible self for the participants who were not planning to attend college because their technical schools had trained them in trades. This may have

had an effect on the relationship between possible self salience and self-regulation. If a student attended the technical high school and planned to become a carpenter in the future, she may enroll in several shop classes in high school and may engage in self-regulatory behavior in those classes. However, she may respond that “becoming a college student” is not a salient possible self for her, as her future plans to become a carpenter do not require her to attend college. If this were the case, her self-regulation score would not be correlated with her rating on the proximal possible self of becoming a college student.

Thus, future research on the nature of possible selves could examine how different possible selves affect self-regulation strategies, using varying methodology. For example, Oyserman and colleagues (2004) examined the possible selves of low-income, ethnic minority adolescents. The researchers asked participants what their plans were to achieve their possible selves to reveal their use of self-regulation strategies. Open-ended questions were employed, so that participants identified their own, personalized possible selves and strategies to achieve them. This open-ended method of questioning could be used as an additional way to measure both the content of participants’ possible selves and their self-regulatory strategies to achieve them.

While the variables in this study accounted for a substantial amount of the variance in self-regulation (52%), there was still variance unexplained by the model, and thus, there are other variables that may predict self-regulation in this population. Future research could address other variables that may predict self-

regulation in low-income, ethnic minority youth. For example, researchers suggest that parental involvement may play a particularly important role in the achievement of low-income, ethnic minority youth (Prom-Jackson, Johnson, & Wallace, 1987; Seyfried & Chung, 2002). Additionally, teacher expectations have been suggested to influence study habits and achievement in school (Brattesani, Weinstein, & Marshall, 1984; Dusek & Joseph, 1983; Jussim & Eccles, 1992). As low-income, ethnic minority adolescents may receive negative messages about themselves in the classroom, teacher expectations may have an influence on their use of self-regulation strategies (Weinstein, 2002). In the future, researchers may examine the effects of parental involvement and teacher expectations on the use of self-regulation strategies in low-income, ethnic minority youth.

A final area to explore in future work involves disentangling community organization participation within low-income, ethnic minority youth. All participants in the current study were recruited from one urban teen center. While the Teen Center does not constitute a youth organization, it is a space where students spend time with each other under adult staff supervision. Many of the students who spend time at the Teen Center are friends with students in youth organizations. It is possible that youth who are friends with structured programming participants are likely to engage in the same study habits and share academic beliefs and hopes for the future regarding higher education. A future study could compare youth who never spend time at teen centers to those who participate in structured programming, as it is possible that there is a difference in

self-regulatory strategy use between students who choose to spend time at a teen center and students who do not.

In conclusion, the findings from the current study shed light on how low-income, ethnic minority youth can cultivate self-regulation strategies. While self-efficacy was found to be the most important contributor to self-regulation, it was also observed that instrumentality and the salience of the proximal possible self emerged as being predictive of self-efficacy. Ultimately, low-income, ethnic minority youth must rise above the barriers they face and have confidence in their abilities to achieve, they must believe that education will lead to their future success, and they must have salient hopes for the future. Just as importantly, educators and researchers who work with low-income, ethnic minority youth should be aware that fostering these key ingredients can help to make possible selves real for all youth.

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Appendix A

**Survey Packet**

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**Survey Packet, Page 1**

**We would like you to think about how you approach *your classes at school*. Please use these numbers (1-5) when picking your answer.**

<b>Strongly Disagree 1</b>	<b>Disagree 2</b>	<b>Neutral 3</b>	<b>Agree 4</b>	<b>Strongly Agree 5</b>
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a) Doing well in school plays a role in reaching my future goals.	1	2	3	4	5
b.) Doing well in school is important for making my dreams come true.	1	2	3	4	5
c.) Understanding things in school is important for becoming the person I want to be.	1	2	3	4	5
d.) Learning things in school plays a role in reaching my future goals.	1	2	3	4	5
e.) Learning things in school is important for making my dreams come true.	1	2	3	4	5

***Please turn to the next page!***





**Survey Packet, Page 4**

**Please read this before moving on to the next page!**

At some point or another, we all think about who we would like to become in the future. There are many things we could all be in the future, but some things are more important to us than others. Usually not everyone wants the same things in the future, and it is okay that we all want to become different things.

For example, a young woman may like to sing and sings in her school chorus, but becoming a singer in the future may only be a little bit important to her. Instead, *becoming a doctor* in the future is very important to her future plan because she loves to work with people and is interested in medicine. A young man might enjoy working in his mother's store, but really does not want to become a business owner. Instead, *becoming a poet* in the future is very important to him because he loves performing and is passionate about writing.

Take a minute to think about your future and what you would like for yourself in the future.

***Please turn the page.***

**Survey Packet, Page 5**

Please use these numbers when you are picking your answer.

- |   | 1 | 2 | 3 | 4 | 5 | 6 | 7              |
|---|---|---|---|---|---|---|----------------|
| not important   |   |   |   |   |   |   | very important |
| a.) For some people, <i>becoming a teacher</i> is an important part of their future plans. How important is <b><i>becoming a teacher</i></b> to your future plan?   | 1 | 2 | 3 | 4 | 5 | 6 | 7              |
| b.) For some people, <i>becoming a professional athlete</i> is an important part of their future plans. How important is <b><i>becoming a professional athlete</i></b> to your future plan?   | 1 | 2 | 3 | 4 | 5 | 6 | 7              |
| c.) For some people, <i>becoming a college student</i> is an important part of their future plans. How important is <b><i>becoming a college student</i></b> to your future plan?   | 1 | 2 | 3 | 4 | 5 | 6 | 7              |
| d.) For some people, <i>becoming a community leader</i> is an important part of their future plans. How important is <b><i>becoming a community leader</i></b> to your future plan?   | 1 | 2 | 3 | 4 | 5 | 6 | 7              |
| e.) For some people, <i>becoming a member of the military</i> is an important part of their future plans. How important is <b><i>becoming a member of the military</i></b> to your future plan?   | 1 | 2 | 3 | 4 | 5 | 6 | 7              |
| f.) For some people, <i>becoming a working professional who has a 4-year college degree</i> is an important part of their future plans. How important is <b><i>becoming a working professional who has a 4-year college degree</i></b> to your future plan? | 1 | 2 | 3 | 4 | 5 | 6 | 7              |
| g.) For some people, becoming a healthy young adult who serves as a role model to teens is an important part of their future plans. How important is <b><i>becoming a healthy young adult role model</i></b> to your future plan?                           | 1 | 2 | 3 | 4 | 5 | 6 | 7              |

***Please turn the page!***

**Survey Packet, Page 6**

**Please answer the following questions by circling or writing in your answer.**

a.) Do you participate in any community organization programs or other after-school programs (such as Girls Inc, Nuestras Raices, Teen Resource Project, Nueva Esperanza)? Yes No

If yes, which ones? \_\_\_\_\_

b.) Are you a leader in any after-school program? (for example, are you a coach or captain of a sports team, a president of a school- related club, a peer leader, or a facilitator of a church or religious group)? Yes No

If yes, please describe: \_\_\_\_\_

c.) How many hours a week do you participate in structured activities after-school such as sports, clubs, at community organizations, church or religious groups, or other after school programs?

\_\_\_\_\_ hrs a week

d.) Are you in a formal mentoring program? Yes No

e.) Is there someone in your life who has been especially supportive of your success in school? Yes No

If yes, who has? \_\_\_\_\_

f.) Do you ever get tutoring after school? Yes No

g.) Do you get paid for any work or activity you do after school? Yes No

If yes, where do you work? \_\_\_\_\_

How many hours a week? \_\_\_\_\_ hrs

h.) What kind of job would you like to have in the future? \_\_\_\_\_

***Please turn to the next page!***

**Survey Packet, Last Page!**

i.) How interested are you in working in a science, technology, or math field? Please circle your answer.

1 2 3 4 5 6  
not at all interested very interested

j.) Did your mom graduate from a 4-year college or university?  
Yes No Don't Know

k.) Did your dad graduate from a 4-year college or university?  
Yes No Don't Know

l.) Are you male or female? Male Female

m.) What is your ethnic background? Check all that apply.

I am Latina/Latino/Hispanic  
 I am White  
 I am African American  
 I am Asian  
 Other: I am \_\_\_\_\_.

n.) How old are you? \_\_\_\_\_

o.) Which grade are you in? \_\_\_\_\_

p.) Which school do you go to? \_\_\_\_\_

q.) What kinds of grades do you normally get? Please check **one**.

Mostly A's  Mostly A's and B's  Mostly B's  Mostly B's and C's  
 Mostly C's  Mostly C's and D's  Mostly D's  Mostly D's and F's

**Thank you! You're all set!!**

## Appendix B

### Interview

I'd like to ask you a few questions about the survey that you filled out for me. I am interested in finding out more about your experiences in school and your plans for the future.

#### A. Self-Regulation

- 1.) Describe yourself as a student.  
(probe: Do you consider yourself a good student, bad student, how do you think of yourself as a student...)
- 2.) What is your favorite subject in school?  
Why is this your favorite subject?  
Is this also the subject that you feel strongest in, that is your best subject?
- 3.) What kinds of things do people do to get good grades?  
-How often do they do their homework?  
-What do they do to study?  
-What do they do in class?
- 4.) How often do you do these things?  
Do you think that doing those things influences the grades that you are getting?  
Do you have a place to write down your assignments?  
If you know a test is coming up, how soon before the test do you study for it?  
What do you do to help you study for tests? Does it matter for your grades?
- 5.) Do you ever have to read something for homework but you don't feel like it so you just don't do it?  
(If yes) How often? Does it matter for your grades?  
(If no) What helps to motivate you to read it even when you really don't feel like it?  
  
Are you ever sitting in class but not paying any attention to what the teacher is saying?  
(If yes) How often? Does it matter for your grades?  
(If no) What do you do to keep your focus?
- 6.) What kind of grades do you get in school?  
Do you think it's important to get good grades at school? Why?  
What are good grades in school?
- 7.) Does anyone in your life tell you that it's important to do well in school?

-Parents? Friends? Teachers? Comm. Org/After school folks? Why/Why not?

- 8.) Do you get better grades than your friends, do they get better grades than you, or about the same? Do your friends care what kind of grades you get? Do you ever feel pressure to do better or worse in school because of friends? Parents? Teachers? Comm. Org? Can you give an example?

Do you and your friends talk about grades or your classes at school?

Do you ever study for tests or do homework with your friends?

### B.) Possible Self Salience

Now I want to talk to you about what you think about college.

- 1.) Why do people go to college?
  - Why do some people go to 2 year colleges and others go to 4 year colleges?
  - Can you do the same things by going to a 2 year and 4 year college?
- 2.) What kinds of things do people need to be doing now to make it possible to go to college?
  - Are you doing any of these things? Which ones? Why or why not?
- 3.) How important is becoming a college student to your future plans? Why?
  - How long have you known how you felt about college?
  - How often do you think about going to college or being a college student?
- 4.) Picture yourself in college right now. Are you at a two year or four year school? Which one? What kinds of classes are you taking? What are you majoring in? Are you living on or off campus? Do you study a lot or party a lot? Does being a college student mean working full time and taking a few classes? Or going to school full time? What do you imagine happening? Are your friends also in college? Are they happy for you? Are your parents happy for you?
- 5.) How likely is it that you will go to college in the future?
  - Do you think college will be easy or hard?
- 6.) Do you ever talk about going to college with your anyone?
  - Friends? Parents? Teachers? Comm. Org/after school folks?
  - Does anybody in your life says it's important to go to college? Who?
- 6.) Do your friends plan to go to college?
  - Do you know anyone in college right now? Who?
  - Are they at a two year or four year school?
  - Do you know anyone at a four year school?
  - What do they say about college?

C.) Future career

1.) What career do you want to have in the future?

How long have you wanted to do become a \_\_\_\_\_?

Why do you want to do that?

Do you know anyone that does that?

Who? (family member, ethnicity, age, gender)

2.) What kinds of things do you need to do now to help you become a \_\_\_\_\_?

Are you doing those things now? Which things? Why/Why not?

3.) What kind of schooling or training do you think people need to become a \_\_\_\_\_?

4.) Do you think you would be a successful \_\_\_\_\_ if you went to college?

Is this why you want to go to college?

5.) Suppose you do get a good education in high school (or college). How likely is it that you will end up with the kind of job you want?

Suppose you don't get a good education. How likely is it that you will still end up with the kind of job you want?

6.) Do you ever talk about future jobs with anyone?

-Friends? Parents? Teachers? Comm. Org/after school folks?

What kinds of things do your friends want to do for work in the future?

What kind of training or schooling are they likely to do after graduating from high school?

D.) Community

Now I would like to talk about your involvement in community organizations or teen centers in Holyoke.

1.) How often do you hang out at the teen center?

Why do you hang out here?

Do all your friends hang out here, too? If not, where do they hang out?

What do your friends who don't hang out here think of the Teen Center?

2.) You said that you are involved in \_\_\_\_\_ Comm. Org.

Describe yourself as a \_\_\_\_\_ Comm. Org member. (probe: what are you like in this setting? How would your friends who only know you from here describe you?)

3.) How long have you been involved with them?

**Why** did you get involved with them?

What do you learn from being in \_\_\_\_\_?

4.) Do you ever talk about the teen center or Comm. Org at school or at home?

Do people at \_\_\_\_\_ tell you it's important to get good grades or to go to college?

Do they talk about it more, less or the same as the people at home or at school or friends?

Do you feel close to your peers/staff at \_\_\_\_\_?

5.) How is being at Comm. Org different than being at school? (Do you feel different? How? Do you do different things? Like what? Are the people different? How?)

6.) Is there anything that you learn about or learn how to do at Comm. Org that has helped you in school? Like what?

Is there anything that you learn about or learn how to do at school that has helped you in school? Like what?

7.) Say you had a friend, Maria, who was in \_\_\_\_\_ program at \_\_\_\_\_ Comm. Org. In school, she never paid any attention to what the teacher was saying, and instead wrote notes to her friends. She never did her homework or studied for tests. Whenever she had to do work in school, she complained about it and had a hard time turning assignments in. Every day after school, she went to \_\_\_\_\_ Comm. Org and she was totally different. At \_\_\_\_\_, she always paid attention to what the staff people were saying. She worked really hard on all the projects that she had to do for the program. Even when she didn't like a certain project the group was working on, she tried her hardest to finish it and do a good job.

8.) Why do you think Maria was so different in the Comm. Org than at school?

Do you think that the Comm. Org was more or less important to her than school?

What makes you say that? Why else would she be acting different?

9.) Do you know anyone like this?

Can you tell me more about this person? (Are you like this?)