2012-06-15

Do Extracurricular Activities Help Adolescents Develop Academic Self-Efficacy? Evidence for How and Why

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A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Master of Science

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August 2012

ABSTRACT

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Previous research has linked extracurricular activities to academic performance for adolescents, but it remains unclear through what mechanisms they are linked. I posit that extracurricular activities lead to the development of academic self-efficacy, which in turn improves academic performance. This study examines the nature of the relationship between participation in extracurricular activities and academic self-efficacy for adolescents. Using data from the Educational Longitudinal Study of 2002, I find that academic self-efficacy is positively related to participation in extracurricular activities. Results indicate that participation in a diversity of types of extracurricular activities such as in both sports and student government is also related to greater academic self-efficacy. Additional analyses reveal that this effect levels out and begins to decrease at high levels of involvement, when the adolescent is involved in a high number of activities or spends a high number of hours per week in extracurricular activities. Implications for adolescents are discussed.

Keywords: self-efficacy, academic self-efficacy, extracurricular activities, adolescent, school

ACKNOWLEDGMENTS

I would like to thank my thesis committee members for all their hard work in supporting me with this research. Thank you to John Hoffmann and Benjamin Gibbs, and a special thanks to my thesis chair, Mikaela Dufur, for many hours of reading, rereading, suggesting revisions, and meeting with me about this project.

Thank you also to the rest of the faculty and staff of the Sociology Department at Brigham Young University for helping me to have a wonderful experience in the Master's Program, especially those professors who taught my graduate courses. I'm glad I was able to learn from and become friends with my fellow graduate students, and I hope to remain friends with many of them for years to come.

Lastly, I would like to thank my family and friends for supporting me in my educational pursuits and for showing interest in the research I do each day. Thank you for your love, for your prayers, and for your encouragement!

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Academic self-efficacy has been linked positively to greater aspirations, academic performance, school involvement, enjoyment of learning, and life satisfaction (Caraway et al. 2003; Caprara et al. 2004; Bassi et al. 2006; Beghetto 2006; Vecchio et al. 2007; Liem, Lau, and Nie 2008; Carroll et al. 2009; Caprara et al. 2011; Yusuf 2011). Similarly, involvement in extracurricular activities is associated with higher grades, educational expectations, educational achievement, friendships, development, enjoyment, self-concept, and self-worth (Cooper et al. 1999; Larson 2000; Schreiber and Chambers 2002; Hansen, Larson, and Dworkin 2003; Chambers and Schreiber 2004; Larson, Hansen, and Moneta 2006; Lipscomb 2007; Troutman and Dufur 2007; Blomfield and Barber 2009; Piro 2009; Southgate and Roscigno 2009; Wetter, Koerner, and Schwaninger 2009; Fredricks and Eccles 2010; Blomfield and Barber 2011; Schaefer et al. 2011). We lack a full understanding of the mechanisms through which extracurricular activities help children academically, but self-efficacy may be one such tool. Given the effect that both academic self-efficacy and extracurricular activities have on academic performance, it is likely that extracurricular activities improve academic outcomes through increasing academic self-efficacy. While local school districts and governments across the country have lately been reducing funding for extracurricular programs, in so doing they are eliminating one of the few ways of building academic self-efficacy over which they have control (O'Neil 2011; Ruiz 2011; Shapiro 2012; Winerip 2012). Schools are limited in how they can increase students' academic self-efficacy; for example, they cannot reasonably provide one-on-one academic lessons for every student to help them develop confidence in learning, nor can they ensure that students study and prepare for classes and exams when they are not in the classroom. On the other hand, if extracurricular activity programs can help students develop academic self-efficacy, they will enrich the academic experiences of youth while they are involved in the

activities and into the future. Scholarly research has largely neglected the relationship between extracurricular activities and academic self-efficacy. Due to the distinct improvements that extracurricular activities and academic self-efficacy cultivate, we will ascertain greater academic benefits through studying the relationship between them.

The present study will determine the nature and extent of the relationship between extracurricular activities and academic self-efficacy for adolescents. "Extracurricular activities" are organized skill- or interest-building activities such as music lessons, sports teams, or clubs in which adolescents regularly participate besides their core academic classes. "Academic self-efficacy" refers to a belief in one's own academic capabilities. To analyze these constructs together, I pose the following research questions: What is the nature of the relationship between academic self-efficacy and adolescent extracurricular activities? Does this relationship hold for greater levels of involvement, or is it curvilinear? I contend that extracurricular activities provide an environment for adolescents to succeed and develop new skills that help them develop academic self-efficacy. Furthermore, I also argue that a moderate amount of extracurricular activity participation is better than high participation because the latter will be negatively correlated with academic self-efficacy. High levels of participation will be negatively associated with academic self-efficacy because greater commitment to extracurricular activities means less time and energy available with which to commit to academic study, which will likely manifest as poorer grades and lower academic self-efficacy.

The following hypotheses will guide my research: 1) Participation in extracurricular activities is positively associated with academic self-efficacy. 2) Involvement in a variety of types of extracurricular activities will be more strongly related to higher academic self-efficacy than involvement in only one type of activity due to the distinctive self-efficacy building

experience various activity types provide. 3a) There is a curvilinear relationship between extracurricular activities and academic self-efficacy with diminishing returns for adolescents who are participating in a very high number of activities. 3b) There is a curvilinear relationship between extracurricular activities and academic self-efficacy with diminishing returns for adolescents who spend many hours in extracurricular activities. I examine data from the Educational Longitudinal Study of 2002 (ELS:2002), a study of over 15,000 high school students in the United States. Demonstrating through these data that there is a relationship between extracurricular activities and academic self-efficacy for youth will set the stage for further research to discover a causal relationship. Although I will argue in this paper that extracurricular activities foster the development of academic self-efficacy, the present preliminary analyses will ascertain only the extent of the association between them, laying the necessary groundwork for future researchers to test causality.

SELF-EFFICACY

"Self-efficacy" is an individual's belief in his own ability to perform well, and it affects how he feels, thinks, behaves, and motivates himself (Bandura 1994; Bandura 2000). It is different from self-concept; self-concept refers to all thoughts and feelings about oneself (Markus and Nurius 1986; Campbell 1990; Swann, Chang-Schneider, and Larsen McClarty 2007), while self-efficacy is exclusively those self-beliefs of capability and success. While individuals with low self-efficacy avoid difficult undertakings, dwell on their weaknesses, and more readily give up, individuals with high self-efficacy are more likely to take on challenging tasks, set high goals, and increase their efforts when facing obstacles or failure (Bandura 1994; Zimmerman 2000; Bassi et al. 2006). Even for those who do not accurately perceive their own abilities (see Klassen 2007), high self-efficacy can improve performance because of the

individuals' determination to succeed. These patterns of self-efficacious behavior become habits and can significantly affect individuals' lives. For example, low self-efficacy may lead a person to give up pursuing important life experiences, leaving him feeling perpetually unhappy and unsatisfied, while high self-efficacy may encourage a person to take advantage of challenging opportunities, filling him with self-confidence. Self-efficacy is strengthened through succeeding, seeing others succeed, and overcoming difficulties. Since self-efficacy is fortified through these means, it stands to reason that opportunities and settings that facilitate these processes are vital to promoting self-efficacy.

Social Cognitive Theory

Our understanding of self-efficacy is rooted mainly in social cognitive theory. This theory posits that people observe those around them and how they experience and react to situations; through this, people learn how to experience and react to situations themselves (Bandura 1994; Bandura 2000; Bandura et al. 2001; Caraway et al. 2003; Caprara et al. 2011; Salanova, Llorens, and Schaufeli 2011). Developing self-efficacy is a learning process of social cognitive theory: individuals observe others around them setting goals, persevering, quitting, failing, succeeding, and so on, and they adopt those patterns of thinking and behavior for themselves. For example, Bandura (1997) maintained that lower ability students, if placed in the same classes as higher ability students, will over time catch up with them academically because they use social cognitive theory to observe and emulate their peers, develop higher self-efficacy, and consequently do better in school. Social cognitive theory is especially relevant in adolescence, when youth are particularly sensitive to peer influence. As they observe their peers, adolescents learn from and imitate their behaviors and ways of thinking, which leads to forming their own self-efficacious beliefs that will influence how they live their lives for years.

Occasions to foster the development of self-efficacy, therefore, are particularly salient for positive youth development.

Formation of Self-Efficacy

According to Bandura (1994), building self-efficacy involves several processes. One of these is *goal-setting*, which includes setting and achieving goals. As individuals achieve goals, they succeed, which success builds self-efficacy and motivates the individual to set higher goals (Meece, Herman, and McCombs 2003; Morisano et al. 2010). Bandura's (1994) second process is *motivational*, which entails expecting certain outcomes and attributing failures to poor effort rather than poor ability. Expectations about outcomes provide compelling motivation to achieve the goal and realize the imagined experience. While those with low self-efficacy tend to ascribe failures to a lack of ability and give up, those with high self-efficacy more often attribute failures to deficient effort and increase their endeavors to attain their goals (Zimmerman 2000; Wise 2007; Tüysüz, Yıldıran, and Demirci 2010). Third, *affective processes* include mastery experiences and perception of ability to control stressful experiences (Bandura 1994). As individuals master skills, they gain more positive feelings about their own abilities, are more willing to tackle challenging pursuits, and are better able to handle difficult situations (Beghetto 2006; Wise 2007; Liem et al. 2008). When stressful situations arise, individuals with high self-efficacy deal constructively with stressors they cannot control and eliminate the ones they can. Some individuals even thrive on the increased adrenaline from stress, using it to help them achieve their goals. Lastly, higher self-efficacy leads people to consider a wider range of choices using *selection processes* (Bandura 2000; Zimmerman 2000; Bandura et al. 2001; Gushue et al. 2006). As an individual develops self-efficacy, she takes greater advantage of the wide range of possibilities available to her, exposing herself to more opportunities for building self-efficacy

through achieving success. Thus, self-efficacy builds upon itself piece by piece and opens up an individual's world to greater prospects that she may never have considered before developing her self-efficacy.

ACADEMIC SELF-EFFICACY

Contexts for Developing Self-Efficacy

Self-efficacy is established through diverse experiences and contexts as individuals use social cognitive theory and observe, learn from, and adopt the thought processes and behaviors of others. Peer relationships help children understand their abilities, while those most experienced become role models for others. School is a context which also facilitates self-efficacy, where children master cognitive skills and are influenced by peer and teacher interpretations of their efficacy. Helping students set goals, learn to persevere, and improve performance has been found to increase student academic self-efficacy, which is the focus of this study (Greene et al. 2004; Cordero et al. 2010).

"Academic self-efficacy" refers to self-efficacy about one's academic abilities. Students observe and learn from the performance of their peers in an academic setting, and they adopt academic thought and behavior patterns in the way posited by social cognitive theory. Academic self-efficacy (ASE) is developed through achieving success in school and leads to a number of positive factors, including greater academic performance, aspirations, involvement, enjoyment, and valuation of academic success (Caraway et al. 2003; Caprara et al. 2004; Bassi et al. 2006; Liem et al. 2008; Carroll et al. 2009; Caprara et al. 2011; Yusuf 2011). Each of these can lead to other academic outcomes, such as pursuing higher education, earning academic honors, and more. Much like having higher self-esteem, having higher ASE improves the academic experience an adolescent has at the time he develops it and also influences his academic

decisions and goals for the rest of his life. Forming high ASE while young has the potential to motivate an individual to take challenging courses in high school and college, pursue and obtain advanced degrees, help peers and students develop ASE through his example and encouragement, and support his own children in forming ASE. Thus, developing ASE can significantly improve adolescents' lives and the lives of those around them well into the future.

Accumulation of Academic Self-Efficacy

Academic self-efficacy is not formed through one experience but through many, and each self-efficacy building experience can boost academic self-efficacy. Caprara and colleagues (2011) discovered that higher ASE at Time 1 predicted higher academic performance at Time 2. Performance at Time 2 contributed to higher ASE at Time 3, which in turn predicted higher academic performance at Time 4, even when controlling for SES and prior academic achievement. Similarly, other scholars have found that self-efficacy increases over time through its relationship with activity engagement and various types of positive affect, such as enthusiasm, comfort, and satisfaction (Salanova et al. 2011). This process of self-efficacy and its factors building off of each other may be reflected across activities—for instance, self-efficacy gained in the context of extracurricular activities may lead to greater academic self-efficacy. Accordingly, research on building ASE through methods such as extracurricular activities may uncover ways to increase overall adolescent self-efficacy. Thus, building ASE through extracurricular activities will lead us one step closer to determining how best to enhance the quality of life for youth.

EXTRACURRICULAR ACTIVITIES

A key factor for academic self-efficacy is an environment that will expedite its development. One such environment is extracurricular activities (EAs), which provide

opportunities for adolescents to learn and master skills. If self-efficacy in EAs can lead to self-efficacy in other areas as indicated by Beghetto's study (2006), it stands to reason that self-efficacy developed through an adolescent's participation in extracurricular activities has the potential to increase his academic self-efficacy.

"Extracurricular activities" refers to organized skill- or interest-building activities in which an adolescent engages in regular participation besides his core academic classes, including music or dance lessons, sports, academic organizations, community organizations, clubs, religious groups, and the like. They may be organized through the school as in the school marching band or through other sources as with community sports teams. Unstructured activities such as painting, playing a musical instrument, or other similar activities can also be considered EAs if they are performed on a regular basis and provide the opportunity for success; however, the current study will focus solely on structured EAs due to limitations of the available data.

Benefits

Studies of EAs indicate that they have a number of positive effects on the lives of adolescents. Academically, participating in EAs is associated with higher academic self-concept, grades, educational expectations, and educational attainment (Cooper et al. 1999; Schreiber and Chambers 2002; Chambers and Schreiber 2004; Lipscomb 2007; Troutman and Dufur 2007; Blomfield and Barber 2009; Piro 2009; Southgate and Roscigno 2009; Wetter et al. 2009; Fredricks and Eccles 2010; Blomfield and Barber 2011). Higher educational expectations and grades reflect a higher perception of one's academic ability (higher ASE) and the manifestation of that belief through successful improvement in grades. Scholars have also found that involvement in EAs provides opportunity for development, growth, and positive adjustment for adolescents (Larson 2000; Hansen et al. 2003; Larson et al. 2006; Fredricks and Eccles 2010).

Friendships formed in EAs (Schaefer et al. 2011) increase the population which individuals may observe as emulate as postulated by social cognitive theory. Additionally, researchers have found that compared to no participation, participation in any type of EA was associated with higher social and academic self-concepts and general self-worth (Blomfield and Barber 2009; Blomfield and Barber 2011). Academic self-efficacy is a part of academic self-concept (Swann et al. 2007) and is related to self-worth, as believing in one's own ability to succeed improves self-worth. I argue that because ASE and EAs each have positive effects for adolescents, research on the relationship between them will prove valuable to our understanding of positive ways to influence the lives of adolescents.

EXTRACURRICULAR ACTIVITIES AND ACADEMIC SELF-EFFICACY

Extracurricular Activities as a Context for Building Academic Self-Efficacy

In the same way that school and peer relationships promote the development of ASE, EAs are an opportune setting for adolescents to foster ASE. EAs offer opportunities for children to form friendships and master new skills. They also provide a place for adolescents to use social cognitive theory and form self-efficacy through observing the successes and actions of their peers in the activities. Extracurricular activities provide an atmosphere where students can meet individuals from different backgrounds and learn from their different experiences, thus using social cognitive theory to learn how others form self-efficacy (Crain 1981; Quiroz, Gonzalez, and Frank 1996). In addition, the activities demand dedication and typically challenge adolescents to perform at increasingly higher levels. Participants set goals such as breaking a personal record for running a mile, and they must be committed to and motivated to fulfill those goals. Expectations about the outcome and persevering through failures provide strong motivation to accomplish one's extracurricular goals. An adolescent may face obstacles or

stressful experiences such as family issues or time-consuming school assignments, and he must learn to balance them in order to succeed. Instructors and coaches in EAs help by pushing him through smaller failures to become better so that eventually he has mastery experiences such as breaking that personal record. As he builds self-efficacy, the adolescent opens himself up to greater opportunities: perhaps breaking that personal record qualifies him for an athletic scholarship. Thus, he considers a greater selection of choices because of the higher self-efficacy he's gained through participation in EAs.

Furthermore, as youth develop greater confidence in their ability to succeed in EAs, their self-efficacy spreads into other arenas. Beghetto (2006) found that creative self-efficacy can lead to self-efficacy in school and academia, which suggests that EAs, many of which are creative in nature, have the potential to improve adolescents' ASE. As adolescents develop self-efficacious beliefs through success in EAs, those beliefs can transfer into the academic sphere as high ASE (Zaff et al. 2003). For example, one student might be struggling to pass algebra, but after a year of doing well in softball she develops confidence in herself that spills over into her math class, motivating her to do well and earn a good grade. Thus, EAs can increase ASE. Before verifying this, a correlation between the two must be established. This is my first hypothesis: H1) Participation in extracurricular activities is positively associated with academic self-efficacy.

A Diverse Extracurricular Activity Experience

There are many "types" or categories of extracurricular activities, all of which provide different opportunities for adolescents. Categories include but are not limited to sports participation, music and arts, academic extracurricular organizations, student government, other school clubs, and community groups. Each type of EA provides a specialized atmosphere for growth and learning, and fosters positive youth development in a unique way. I maintain that

having a diverse EA experience through participating in multiple types of activities will be associated with higher academic self-efficacy.

Previous research has uncovered multiple benefits of EAs that are related to self-efficacy. Scholars have found that sports participation has a positive effect on self-beliefs, emotional development, initiative, grades, educational expectations, and educational attainment (Snyder and Spreitzer 1977; Hansen et al. 2003; Larson et al. 2006; Lipscomb 2007; Troutman and Dufur 2007; Dodge and Lambert 2009; Zarrett et al. 2009). Involvement in music, dance, drama, or other creative arts is associated with increased quality of life, learning ability, academic skills, school performance, initiative, and confidence (Larson et al. 2006; Alter, Hays, and O'Hara 2009; Piro 2009; Southgate and Roscigno 2009; Wetter et al. 2009). Expectations about educational outcomes, improving academic performance, and learning to improve through competing are integral parts of ASE. Though much of the research on EAs focuses mainly on sports and the creative arts, clubs, student leadership, and volunteer work also provide valuable benefits. Adolescents who participate in extracurricular clubs experience significant growth in self-esteem (Kort-Butler and Hagewen 2011), which helps promote self-efficacy because a more positive view of oneself facilitates a more positive view of one's capabilities. Furthermore, according to Bundick (2011), positive youth development is associated with participation in student leadership and volunteer work. Student leadership helps promote self-efficacy as those in leadership positions are motivated to fulfill the expectations of those looking up to them, and as they succeed, they gain confidence in their own ability to lead others and independently accomplish goals. Similar self-efficacy building skills developed through the different experiences in each type of activity create a well-rounded education for forming self-efficacy, which skills for goal setting and succeeding can produce academic self-efficacy.

Given that different types of activities help form self-efficacy through different experiences, participation in more than one type of activity may lead to greater self-efficacy than participation in only one type. Indeed, researchers have found that adolescents who participate in multiple types of EAs demonstrate more positive self-concepts, self-worth, identities, self-esteem, personal development, and higher educational aspirations and attainment than those who participate in only one type of activity (Spady 1970; Hansen et al. 2003; Larson et al. 2006; Blomfield and Barber 2009; Linver, Roth, and Brooks-Gunn 2009; Kort-Butler and Hagewen 2011). As previously stated, each of these is related to self-efficacy because having a positive view of oneself includes having a positive view of one's abilities. Those who have limited or no participation in EAs may have undeveloped talents that, combined with effort, could help them become high achievers in other areas. Moreover, involvement in diverse areas of experience and education provides youth with the prospect of success in multiple fields of interest. Self-efficacy is a likely result of this diverse extracurricular education, as adolescents learn in multiple settings to set goals, don't give up, succeed in mastering skills (more so if they are naturally talented in the field), and increase opportunities for success. Adolescents involved in various types of EAs typically come to discover an area in which they are particularly skilled, and as they succeed in that area, they develop greater self-efficacy which strengthens their desire and motivation to succeed in other areas of their lives, such as in school. For this reason, the current study predicts the following: H2) Involvement in a variety of types of extracurricular activities will be more strongly related to higher academic self-efficacy than involvement in only one type of activity due to the distinctive self-efficacy building experience various activity types provide.

The Problem with Overscheduling

There is an additional element to extracurricular activities that has been largely neglected in academic research. Fredricks and Eccles (2010) found that while EAs generally lead to positive youth adjustment, at high levels of involvement the well-being of youth levels off or declines slightly. Similarly, substantial research on adolescent employment has found significant costs if the adolescent is working 20 or more hours per week or in some cases even 10-15 hours or more per week, including poorer grades, more absences from school, less time spent on homework, increased likelihood of dropping out of school, greater psychological distress, drug and alcohol use, and delinquency (Steinberg et al. 1982; Lillydahl 1990; Steinberg and Dornbusch 1991; Steinberg, Fegley, and Dornbusch 1993; Mael, Morath, and McLellan 1997; McNeal 1997; Schoenhals, Tienda, and Schneider 1998; Valois et al. 1999; Hansen and Jarvis 2000). Youth are sometimes overscheduled with difficult schoolwork, employment, extracurricular activities, and more, which then makes it difficult to succeed in all areas. Thus, students in high school who are committed to too many activities or who spend too many hours in activities are likely to see a negative effect on their academic self-efficacy, as they are less able to master skills when they have so many demands to fill. This leads me to my final hypothesis, which is in two parts: 3a) There is a curvilinear relationship between extracurricular activities and academic self-efficacy with diminishing returns for adolescents who are participating in a very high number of activities. 3b) There is a curvilinear relationship between extracurricular activities and academic self-efficacy with diminishing returns for adolescents who spend many hours in extracurricular activities.

In summary, research indicates that academic self-efficacy and extracurricular activities lead to positive youth development in the academic sphere and in other areas. Self-efficacy

building processes are inherent in EAs, making them an advantageous setting for the development of self-efficacy. As adolescents gain confidence in their extracurricular abilities, their self-efficacy spreads to other areas of their lives and facilitates the development of ASE. Thus, self-efficacy formed through EAs leads to greater ASE, particularly if youths participate in a variety of activity types and in a moderate (not high) number of activities and/or hours of activities. This study will help establish a foundation for research on the effect of EAs on academic self-efficacy by determining to what extent the constructs are linked together.

Hypothesis 1) Participation in extracurricular activities is positively associated with academic self-efficacy.

Hypothesis 2) Involvement in a variety of types of extracurricular activities will be more strongly related to higher academic self-efficacy than involvement in only one type of activity due to the distinctive self-efficacy building experience various activity types provide.

Hypothesis 3a) There is a curvilinear relationship between extracurricular activities and academic self-efficacy with diminishing returns for adolescents who are participating in a very high number of activities.

Hypothesis 3b) There is a curvilinear relationship between extracurricular activities and academic self-efficacy with diminishing returns for adolescents who spend many hours in extracurricular activities.

DATASET

In order to analyze the relationship between extracurricular activities and self-efficacy, I use data from the Education Longitudinal Study of 2002 (NCES 2002). This study (the ELS:2002) is a nationally representative study of approximately 15,000 young people who were

high school sophomores in the first year of data collection. The 750 schools in the sample were selected first, after which the student respondents were randomly selected within each school. It includes an oversampling of non-public schools versus public schools and Asian students versus White, Black, and Hispanic students in order to yield greater numbers of those groups for purposes of comparison. The present study utilized data from the base year of this study, collected in spring term 2002, when respondents were questioned regarding the students' achievement, attitudes, and experiences. I chose to analyze the ELS:2002 rather than another national study for its wide variety of measures regarding EA participation and ASE. While there were some measures in the first follow-up wave of the ELS:2002 that were not in the base year and would have been beneficial for this analysis, I preferred the base year because it ultimately contained the most applicable and greatest variety of questions. Using high school sophomores as my unit of study also provides solid evidence regarding the relationship between EAs and self-efficacy because sophomores are old enough to be exposed to and participate in a variety of EA types, yet they are young enough to be still developing their self-perceptions and self-efficacies through their observation of and interaction with others.

MEASURES

Academic Self-Efficacy

I utilize a number of observed variables to measure academic self-efficacy. Some of these were about general academic beliefs/behaviors and others specifically regarded math and English self-efficacy (other academic subject areas were not included in the ELS:2002). As perception of ability is the fundamental component of self-efficacy, I measure to what extent students believe in their ability to do an excellent job on assignments, do an excellent job on tests, and master course skills in their math and English courses. These subject-specific

questions were used by Fan and Williams (2010) in their study of ASE using the ELS:2002. For ASE beliefs about general learning, I consider how strongly they believe that they are capable of learning something really hard and that if they want to, they can learn something well. I also incorporate a question about how often they put forth their best efforts when studying so that I may analyze their behavior as an indicator of their self-efficacious motivational processes. Lastly, I include a measure of academic commitment, namely, to what extent students believe they can get no bad grades if they decide to. Each of the above was coded as "almost never" = 1, "sometimes" = 2, "often" = 3, and "almost always" = 4. These measures were patterned after previous models of ASE, which have included variables regarding capability to manage one's own learning, ability to master academic subjects, and ability to self-regulate learning (Zimmerman, Bandura, and Martinez-Pons 1992; Bandura et al. 1996; Bandura et al. 2001; Pastorelli et al. 2001; Meece et al. 2003; Caprara et al. 2004; Bassi et al. 2006; Klassen 2007; Vecchio et al. 2007; Liem et al. 2008; Carroll et al. 2009; Liu and Koirala 2009; Caprara et al. 2011; Tsai et al. 2011). An exception is that unlike several of the above, I did not include any measures of parental or teacher expectations due to the fact that I am focusing strictly on the individual's belief in her own academic abilities and potential, not the influence of the expectations of others. Additional variables were also considered, including the students' ability to understand difficult texts or material presented in the math or English courses; however, these did not fit well with the model and were subsequently rejected.

To determine whether or not the above observed variables were useful measures of the latent or unobserved variable ASE, I conducted a confirmatory factor analysis (CFA), which estimates how well the hypothesized model fits the data (see Schreiber et al. 2006; Marsh 2007). Each observed variable has unique factors, or measurement errors, which affect it. The effects of

these errors are often interrelated; for example, a student's report of her self-belief that she can do well on her math assignments is likely related to her report of her self-belief that she can do well on her math tests. The correlations of these error terms are specified in the CFA. The final model of academic self-efficacy was measured by the ten observed variables described above and had a strong model fit, with an RMSEA of .047 and a CFI of .991 (see Table 1 and Table 2 for more details).

Extracurricular Activities

My measurement of extracurricular activities is generally consistent with previous models (Mahoney and Carins 1997; McNeal 1997; Marsh and Kleitman 2002; Eccles et al. 2003; Hoffmann 2006; Fredricks and Eccles 2010). One difference is that I exclude hobbies because of the ambiguity of what a "hobby" is – as I have no control over what factors this ELS variable might include, I cannot conclude that it is an acceptable measure of EAs or that it will be related to ASE. Another difference in my model is that I exclude a number of other concepts due to limitations within the dataset, such as a lack of questions regarding religious activity attendance (such as weekly Bible study or attendance in church seminary) and non-school EAs.

I include a broad range of activity types and level of participation in EAs, all as reported by the students themselves. To test hypothesis #1, I generated a variable about whether or not the student participates in any EA on a regular basis ("no" =0, "yes" = 1) by combining the responses to questions asking about participation in various activities. These activities comprised of participating in various interscholastic sports, student government, school clubs, academic clubs or organizations, and arts or music. An answer in the affirmative to any of these questions indicated participation in an EA and was coded as 1 or "yes" for the new variable.

The ELS:2002 constitutes a wide range of extracurricular activity types or categories from which I generated the variable to test Hypothesis #2 concerning participation in a variety of types of extracurricular activities. One category of EAs in this study is sports participation, and it comprises questions regarding interscholastic sports, how often they take sports lessons, and how often they play non-school sports. More specifically, for interscholastic sports it asks about participation in baseball, softball, basketball, football, soccer, other, individual, and cheerleading or drill team. A second category is academic EAs, which involves participation in an academic club or an academic honor society. In the third group of music and arts, students report participation in school band or chorus, participation in a school play or musical, and how often they take music, art, or language classes. Fourth is involvement in student government, which provides students with the opportunity for leadership. Lastly, the fifth category includes participation in school organizations such as vocational clubs, school yearbook or newspaper, school service clubs, or school hobby clubs. Each of these categories or types of EAs may influence adolescents' development of ASE in different ways, which is why they are all pertinent for the present study. The new variable from which these were generated to test Hypothesis #2 measures participation in more than one type of activity, such as if a student is involved in both a sport and a school club (two activity types) or is perhaps involved a sport, the school musical, and student government (three activity types). Responses were coded as "no participation" = 0, "one activity type" = 1, "two activity types" = 2, "three activity types" = 3, and so on up to five activity types. The variable distribution had a mean of 1.6 activity types (weighted mean = 1.5).

For my third hypothesis regarding a curvilinear relationship with high levels of involvement, I integrate two variables that measure high levels of participation in EAs. To test Hypothesis 3a about the total number of activities, I formed a continuous variable accounting for

the total number of all activities participated in for each respondent (maximum = 20) with a mean of 3.1 (weighted mean = 2.8). This was different from the variable created for Hypothesis #2 because while that variable considers only participation in different activity types, this variable measures total participation in any and all activities as separate activities, such as a total of five activities if the student is involved in three sports and two school clubs. As a means of examining Hypothesis 3b or the amount of time invested in EAs, I use a continuous variable provided by the ELS:2002 that asks the students how many hours in a typical week they spend on school-sponsored EAs, ranging from 0 to 21 or more hours with a mean of 4.8 hours (weighted mean = 4.6 hours). This ELS variable does limit the potential results as it groups together all those who participate in 21 or more hours per week, which likely includes any adolescent who is involved in more than one EA if one of those EAs is competitive (as many EAs are), like a sport. If this variable was truly continuous and distinguished between those who are involved in 21 hours versus those involved in 41 hours per week, the results would likely be different. However, this was the best variable available in the ELS:2002 to measure hours of involvement, and the limitations of its implications will be considered in the discussion of the results.[1] To determine whether there is a curvilinear relationship for each of these variables as hypothesized for the current study, I included in the analyses the original variables and a squared version of the variables for both hypotheses. These allowed me to adequately gauge whether there is a point at which high levels of participation becomes negatively associated with adolescents' academic self-efficacy.

Background Characteristics and Additional Control Variables

I control for a number of background characteristics that previous researchers have considered in relation to both participation in extracurricular activities and academic self-

efficacy (Marsh 1992; McNeal 1998; Brown and Evans 2002; Marsh and Kleitman 2002; Huebner and Mancini 2003; Meece et al. 2003; Bohnert, Martin, and Garber 2007; Klassen 2007; Ohmer 2007). These consist of the child's *sex* (dichotomous; "female" = 1), *race* (dummy variables; Black, Hispanic, Asian or Pacific Islander, American Indian or Alaskan Native, or mixed race, with White as the reference category), *parental education* (ordinal categories ranging from "did not finish high school" = 1 to "completed PhD, MD, or other advanced degree" = 8; treated as continuous), *income* (ordinal categories ranging from "none" = 0 to "$200,001 or more" = 12; treated as continuous), *school type* (dichotomous; "public" = 1, "private" = 0), *urbanicity* (dummy variables; Suburban or Rural, with Urban as the reference category), and *geographic region* (dummy variables; Midwest, South, or West, with Northeast as the reference category). I also include two measures of previous academic performance that may affect the students' ASE, specifically the students' *standardized test composite scores* (the average of math and reading and ranging from 20.91 to 81.04) and *has repeated at least one grade* (coded as "none" = 0, "one or more" = 1). Past academic performance has been found to be correlated with later ASE for adolescents in other studies (Vancouver, Thompson, and Williams 2001; Caprara et al. 2011). Additionally, having repeated at least one grade is a sign of dealing with substantial academic struggles, which may lead to lower ASE for some individuals.[2]

Lastly, in order to account for how the adolescents spend their time when not in school or EAs, I control for four variables that depict alternate activities adolescents may engage in on a regular basis. These include the number of hours they work each week (maximum 41 = "41 or more"), how often they participate in community service (ranging from "rarely or never" = 0 to "every day or almost every day" = 3), the number of hours per week they work on homework outside of school (maximum 26 = "26 or more"), and the number of hours per weekday they

spend watching TV/DVDs or playing video/computer games (0 to 12). Note that the maximum number of hours adolescents spend in various activities for each of these variables differs from the maximum number of hours allotted to the variable about hours of participation in EAs; this inconsistency is simply how these variables are measured in the ELS:2002. Each of these pastimes may contribute to or hinder the development of academic self-efficacy, and therefore they are included as independent variables in the model.

Table 3 portrays descriptive statistics for the independent variables to be included in the structural equation models. In order to ensure that the data are nationally representative, these statistics are weighted using the ELS:2002 variable *bystuwt*. Note that 83% of students in the sample participate regularly in EAs, with a weighted average of 2.79 activities (1.52 activity types) and 4.59 hours per week spent on extracurricular activities.

METHODS

To examine the relationship between participation in extracurricular activities and academic self-efficacy of adolescents, I conducted structural equation models. Before the full model analyses, I conducted confirmatory factor analyses as described above to determine the variables with which to measure ASE. I then performed a structural equation model for each hypothesis. Each model was designed to test each hypothesis and included all the control variables listed earlier (see example model in Figure 1). Maximum likelihood estimation was used to specify missing values. To account for the oversampling of Asian students and students in non-public schools, I also estimated these regression models with frequency weights using a variable provided by the ELS for such purposes (*bystuwt*); however, as the weighted regression coefficients were very similar to or the same as those unweighted, the unweighted coefficients are listed in the results tables.

RESULTS

As shown in Table 4, each structural equation model had a strong model fit with an RMSEA of .028 (H1 and H2) or .027 (H3a and H3b) and a CFI of .966 (all four models). Model 1 shows that participation in an extracurricular activity was significantly and positively associated with academic self-efficacy for adolescents ($p < .001$), as hypothesized. There is indeed a positive relationship between EA participation and ASE for adolescents. Similarly, Model 2 reveals that participation in more than one type of EA as predicted by hypothesis 2 was positively related to ASE ($p < .001$). Being involved in multiple types of activities rather than exclusively in those within one domain is associated with greater ASE.

Also presented in Table 4 are the results for the hypotheses about a curvilinear relationship. Model 3 containing Hypothesis 3a and its squared term, which measured the total number of all activities participated in for each respondent, produced a positive association between the number of activities and academic self-efficacy up to a point, after which the association was negative (both H3a and the squared term were significant at the .001 level). Finally, there was also a significant curvilinear relationship in Model 4 between the number of hours per week spent on EAs and ASE as predicted by Hypothesis 3b ($p < .001$). For both indicators of high involvement, greater involvement was significantly related to ASE up to a point, after which it leveled off and became negative. As with adolescent employment, these results establish that there can indeed be "too much of a good thing." These associations are displayed as graphs (Figures 2 and 3) which were formed using the predicted values of academic self-efficacy based on the structural equation model for each hypothesis, and they demonstrate the level of ASE an adolescent is most likely to have based on his level of participation in EAs. However, though there was a statistically significant negative association after a point, the

coefficient for the squared term of H3a or the total number of activities was small and not very substantial. This relationship, depicted in Figure 2, shows that participation in about ten or more EAs is negatively associated with ASE while participation in ten or fewer, especially fewer than five or six, is positively related to ASE. The even smaller coefficient for the squared term for Hypothesis 3b or the number of hours per week spent on EAs is evidence of a similar even less pronounced trend in the data, depicted in Figure 3. Figure 3 reveals that spending up to about twelve hours per week in EAs is positively related to ASE, which positive relationship dwindles and begins to decline after that. Note that Figure 2 with the total number of EAs has a more distinct rise and fall relationship with ASE, while Figure 3 on the hours spent per week in EAs shows more of an increase and then a leveling out, with perhaps a slight decline. It appears that participating in many hours of EAs, or at least between 12 and 21 or more hours, has a less detrimental effect on ASE than a high number of total activities, due to the fact that spending more time in an activity provides for a greater likelihood of mastering skills and building self-efficacy. Furthermore, there were significantly fewer students who participated in high numbers of EAs, which if the distribution was more balanced may have revealed a different pattern. Moreover, the way the variable about the number of hours in EAs was measured likely affects the pattern in this graph as well, as the maximum number of hours being "21 or more" combines those involved in 21 hours and those involved in as much as 41 hours per week.[3]

Additionally, a number of control variables were significant in predicting academic self-efficacy. Being black or hispanic as compared to white was consistently positively related to ASE ($p < .001$), which is consistent with previous findings and arguments that black and hispanic individuals have more positive views of their own abilities than their respective comparison groups (Lay and Wakstein 1985; Graham 1994). Southern students similarly had

higher ASE than those from the northeastern states across all of the models ($p < .001$), which may be a result of the high proportion of black individuals in the South. Interestingly, being from a suburban neighborhood as opposed to an urban neighborhood was negatively related to ASE ($p < .01$); this may be due to the smaller proportion of black and hispanic students as compared to white students in suburban areas in my dataset, which have higher ASE as stated above. As expected, having repeated a grade was negatively associated with ASE ($p < .01$) and higher math/reading test scores were positively associated with ASE ($p < .001$) for all four models. These results confirm that it was appropriate to include them in these models of academic self-efficacy, as they measure failures and successes in the academic sphere. Finally, the number of hours engaging in various activities predicted ASE in different ways. Increasing hours spent at work and watching TV/DVDs or playing video/computer games were negatively associated with ASE in every model, most likely due to the corresponding decrease in the number of hours available to spend doing homework and otherwise academically engaging oneself. Community service, which was also positively correlated with ASE, may be connected to self-efficacy in a way similar to EAs. The positive association between time spent doing homework and ASE follows the pattern of self-efficacy building: increasing effort and time in the activity typically increases success, which in turn increases self-efficacy in the subject area.

DISCUSSION

Hypothesis 1: Participation

As predicted, being involved in extracurricular activities is positively associated with academic self-efficacy for adolescents. While this finding does not imply causation, it clearly demonstrates that the two concepts are connected. It is possible that students who have higher ASE are more likely to enroll in EAs, but it is theoretically more likely that the majority of

adolescents develop self-efficacy through involvement in EAs, which spreads over into their academic self-concepts and leads to higher ASE. These findings are consistent with Beghetto's 2006 study in which he found that students with higher creative self-efficacy also had higher academic self-efficacy. As a context ripe with opportunities for succeeding and seeing others succeed, EAs provide an excellent atmosphere for youth to master skills and observe others doing the same through the pattern of social cognitive theory (Bandura 1994; Bandura 2000; Bandura et al. 2001; Caraway et al. 2003; Caprara et al. 2011; Salanova et al. 2011). In so doing, extracurricular activities build self-efficacy as they allow participants to develop skills and confidence that bolster their perceptions of their own abilities. Previous research on extracurricular activities has found a substantial connection between EAs and academic outcomes as well as positive self-concepts, both of which are connected to ASE, and the positive relationship between them that was revealed by the present analysis indicates that their combined contributions have the power to magnify these valuable benefits (Cooper et al. 1999; Larson 2000; Schreiber and Chambers 2002; Caraway et al. 2003; Hansen et al. 2003; Caprara et al. 2004; Chambers and Schreiber 2004; Bassi et al. 2006; Larson et al. 2006; Lipscomb 2007; Swann et al. 2007; Troutman and Dufur 2007; Liem et al. 2008; Blomfield and Barber 2009; Carroll et al. 2009; Piro 2009; Southgate and Roscigno 2009; Wetter et al. 2009; Fredricks and Eccles 2010; Blomfield and Barber 2011; Caprara et al. 2011; Schaefer et al. 2011; Yusuf 2011). Future research analyzing the two constructs longitudinally will be able to reveal more about the nature of the relationship, such as if and how it is causal and how we might encourage participation in EAs and the development of academic self-efficacy.

Hypothesis 2: Diversity of Participation

The significant positive relationship between the diversity measure of EAs and academic self-efficacy, predicted by Hypothesis 2, indicates the benefits of having a more well-rounded educational experience. Each of the types of activities included in the current study offers unique experiences for building self-efficacy: sports help strengthen self-beliefs, emotional development, and academic performance; music activities improve quality of life, academic ability, and confidence; school clubs boost self-esteem; academic organizations heighten academic ability; and student leadership leads to positive youth development (Snyder and Spreitzer 1977; Hansen et al. 2003; Larson et al. 2006; Lipscomb 2007; Troutman and Dufur 2007; Alter et al. 2009; Dodge and Lambert 2009; Piro 2009; Southgate and Roscigno 2009; Wetter et al. 2009; Zarrett et al. 2009; Bundick 2011; Kort-Butler and Hagewen 2011). Exposure to diverse extracurricular experiences means exposure to increased opportunities for developing self-efficacy. This positive finding that participation in a variety of types of EAs is correlated with higher ASE is supported by previous research, which connects a diverse EA education to more positive self-concepts, self-worth, self-esteem, personal development, and higher educational aspirations and achievement (Spady 1970; Hansen et al. 2003; Larson et al. 2006; Blomfield and Barber 2009; Linver et al. 2009; Kort-Butler and Hagewen 2011). Encouraging youth to broaden their EA education and be involved in different types of activities will help them foster unique kinds of efficacy and efficacy-building skills, facilitating their formation of academic self-efficacy in the process.

Hypotheses 3a and 3b: Number of Activities and Number of Hours

As discussed above, Models 3 and 4 show a curvilinear relationship with high levels of extracurricular activity involvement, similar to Fredricks and Eccles' 2010 finding that at high

levels of EA involvement, the well-being of youth levels off or declines slightly. This is also in accordance with earlier research on adolescent employment, revealing that a moderate amount of involvement—limited to less than ten activities (preferably as few as five or six) or twelve hours per week—may be best in order to maintain a positive relationship with ASE. Limiting the number of activities is plausible to implement, as it allows students to be involved in a variety of EAs, but not so many that they cannot also focus on their schoolwork and other activities. However, limiting the hours per week to 12 may not be entirely practical; competitive activities, especially athletics and music, require time dedicated to practice, and if a student is involved in multiple activities he almost certainly will be participating in EAs for greater than 12 hours per week. This 12 hour maximum point shown in the current analysis may be a result of the variable distribution stopping at 21 or more hours. Furthermore, upon closer look it appears that the slight decline visible in Figure 3 is unsubstantial. Thus, while the results in Figure 2 suggest a maximum number of activities in which students ought to participate in order to not experience negative returns for ASE, the results in Figure 3 may indicate something else entirely. Clearly there is an increase in ASE as EA hours increase up to approximately 12 hours per week, but after that it appears the relationship levels out rather than decreases. In other words, students can expect a positive relationship between EAs and ASE up to 12 hours of participation, with a fairly steady maintenance of ASE up to 21 or more hours. Given these results, it may be better to recommend that students participate in no more than ten activities at once, but that they spend more time in each activity.

As previously mentioned, the variable for Hypothesis 3b unfortunately does not consider the potentially substantial difference between students participating in 21 hours or 41 hours, and this leveling out of the relationship that was apparent from the present analysis may only hold up

to 21 hours. As with past research on adolescent employment, it would be better for future researchers to analyze this relationship with a variable that considers participation up to 40 hours or more. Employment research generally found that the negative returns for employment on outcomes of academic or general well-being are manifest if adolescents work more than 20 hours per week, which was the top of the range for the hours of EA participation variable used to test Hypothesis 3b in the current study (Steinberg et al. 1982; Lillydahl 1990; Steinberg and Dornbusch 1991; Steinberg et al. 1993; Mael et al. 1997; McNeal 1997; Schoenhals et al. 1998; Valois et al. 1999; Hansen and Jarvis 2000). Prospective research in this subject area may test this further to determine whether this curvilinear relationship as well as the point at which the positive association levels out is consistent with other datasets. By establishing that breaking point, so to speak, academic researchers will be able to recommend a maximum number of EAs and a maximum amount of time adolescents should invest in them in order to maintain the positive relationship between EA involvement and ASE and therefore enjoy a healthier adolescent experience.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

As with every study, there are a number of limitations to this research. Most prominent perhaps is the lack of longitudinal data analysis. While establishing causality in the relationship between extracurricular activities and academic self-efficacy remains a goal, it was necessary to first establish their correlative relationship. Future research may analyze this relationship further to determine if, how, and to what extent a causal relationship exists between the two constructs. In connection to the problem of establishing causality is the limitation that those adolescents with higher ASE may be more likely to participate in EAs rather than the latter helping foster self-efficacy. Nonetheless, some longitudinal research has considered personal traits in relation to

various outcomes and found that they are to some degree the result of involvement in EAs, which makes the argument that EAs can lead to the development of ASE more plausible (Marsh 1992; Eccles and Barber 1999).

Additionally, this study is limited by a lack of questions regarding peer influence and relationships. I have maintained that part of the reason extracurricular activities help adolescents develop academic self-efficacy is through their observance and emulation of others as in social cognitive theory. However, the ELS:2002 does not have relevant data regarding the influence of peers and coaches or instructors by which one might establish that this is occurring. Theoretically it is likely that the positive relationship found in Models 1 and 2 is due in part to learning from peers within the structure of EAs about how to develop academic self-efficacy, but these data cannot determine that this is the case.

As mentioned above, another limitation is that the variable used for Hypothesis 3b to determine the hours per week spent in EAs asked only about school-sponsored activities. This is a problem not only for the ELS:2002 but for many datasets, as most of those that ask questions regarding EAs do not account for involvement in activities such as private music or dance lessons or community sports, neither for the number of hours in which they participate nor whether they participate in them at all. If future surveys and questionnaires were to include questions regarding EA participation in the private sector, research could greatly benefit from the added number of participants and the potentially different relationships that may come from their participation. The ELS:2002 does not allow the present study to determine this, but forthcoming studies may be able to do so with the proper data available to them.

There are many directions in which this research may lead future research. First, research ought to identify the causal relationship between extracurricular activities and academic self-

efficacy for adolescents. Additionally, it may perhaps be even more beneficial for future research to consider EA participation at one time, academic self-efficacy at a later time, and then another outcome such as academic achievement at a third, even later time period. As found by Caprara and colleagues (2011), academic self-efficacy gained at one point yields greater returns at a later point; thus, longitudinal research tying ASE and EAs together is likely to find a similar pattern of building ASE and its positive outcomes over time (see also Shults et al. 2003; Salanova et al. 2011). With the positive effect ASE has on academic performance, aspirations, involvement, and enjoyment, we may be able to determine whether participation in EAs can enhance these benefits.

Regarding the deficiency of data on non-school EAs, researchers ought also to take into consideration a comparison between school-sponsored EAs and non-school EAs. It would be fascinating to discover what of these findings concerning academic self-efficacy and other academic findings stand when analyzing school-sponsored and non-school activities separately. There may be no difference in how or by whom the activities are organized as concerns the relationship between EAs and ASE. Or, perhaps the positive association found in this study between EAs and ASE is more due to greater involvement in school activities than the development of self-efficacy as I have conjectured, and those involved in non-school activities see no relationship between participation in EAs and their ASE. Research on academic self-efficacy could greatly benefit from understand this additional facet of EA participation, and it would also complement research in the field of EAs.

In addition, researchers ought to analyze the potentially different effects that various extracurricular activities have on academic self-efficacy. It is quite possible that football affects ASE in a different way than choir or math club or even another sport like lacrosse. Troutman

and Dufur (2007) found that high school females involved in sports were more likely to graduate from college, but this may not have been the case if they had been involved in other kinds of EAs. As mentioned above, different types of EAs help students develop self-efficacy in different ways, and it may be that being involved in one specific extracurricular activity has a greater influence on an adolescents' academic self-efficacy than another extracurricular activity does.

Furthermore, there may be different relationships found for boys versus girls or for different racial groups. In the present study there was some indication of a negative relationship between EA involvement and academic self-efficacy for females as compared to males, and future studies ought to investigate this. Such results may be indicative of the types of EAs female and male adolescents participate in, or the implications may be that females and males in similar EA involvement have different levels of ASE. Black and hispanic youth had consistently higher ASE than white youth in these models as in previous research, and research exploring the many factors that may predict this disparity would add greatly to our understanding of EAs, ASE, and how each of them affects the lives of youth from different demographic backgrounds (Lay and Wakstein 1985; Graham 1994). Moreover, as black and hispanic youth have higher ASE, encouraging adolescents to be involved in extracurricular activities in which they can form friendships with youth from different backgrounds may help their higher ASE to strengthen the ASE of individuals from other ethnic backgrounds (see Crain 1981; Quiroz et al. 1996).

Additional benefits may be manifest in youth of low socioeconomic status, in that self-efficacy produced through participation in extracurricular activities may have a positive effect on school participation. Some studies reveal that the effect of EAs on positive youth development is stronger for those from low SES schools (Marsh 1992; Mahoney and Cairns 1997; Marsh and Kleitman 2002; Blomfield and Barber 2011). These findings demonstrate that EAs can make a

profound difference in the lives of adolescents who are under benefitted. In order to develop self-efficacy, adolescents must be provided with opportunities and environments that facilitate it, and EAs serve as excellent environments for fostering self-efficacy. Students who have higher self-efficacy to begin with are typically those who are from higher SES backgrounds because they receive positive feedback for their higher socioeconomic status and they have those resources that encourage success. Lower SES students receive more negative feedback for their lower socioeconomic status and lack as many opportunities for self-efficacy building experiences, which may lead them to make adverse life choices such as dropping out of school. If, however, EAs can provide these students with an atmosphere conducive to the development of academic self-efficacy through helping them succeed where they are not able to in other areas, their benefits make EAs worthy of academic study.

Most importantly, future research will help reveal ways to promote a healthy degree of adolescent involvement in EAs so that youth may experience the full benefits of EAs and academic self-efficacy. Extracurricular activities may prove to be an efficient, effective way of encouraging the development of self-efficacy in all areas, and particularly in school.

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ENDNOTES

[1] Unfortunately this variable lacks the inclusion of extracurricular activities that are not sponsored by the school, which, if the time spent on non-school extracurricular activities had been included, might make a meaningful difference in the results of the model.

[2] Having had at least one sibling drop out of high school before graduating was also considered as theoretically it may indicate risk of having lower academic self-efficacy, which is developed through observing the behaviors of others (particularly those close to them). However, this variable proved to be nonsignificant for any of the structural equation models in predicting academic efficacy. As it also decreased the model fit slightly, this variable was in the end removed from the analysis.

[3] It is possible that some of the strength of the coefficients in models 2 through 4 are a factor of participation versus non-participation rather than the extent of involvement in EAs. I conducted two additional models, Models 5 and 6, that include hypotheses 2, 3a, and 3b to consider their combined effects (see Table 5). Logistic regression analyses confirmed that H2, H3a, and H3b were highly significant predictors of extracurricular activity participation ($p < .001$); therefore, that variable was excluded from the combined models. As shown by Model 5, the squared terms for variables H3a and H3b are nonsignificant and were thus excluded for the final model, Model 6. The findings shown in Table 5 are intended to shed greater understanding of the first four models, which are the focus of the present study. When considering the different levels of involvement in extracurricular activities altogether, it appears that the number of activities (H3a)

does not significantly matter in relation to academic self-efficacy while diversity of types (H2) and the number of hours spent (H3b) both remain positively and significantly correlated with ASE. Graphs of the predicted values of ASE based on Models 5 and 6 looked much the same as the graphs in models 3 and 4, shown in Figures 2 and 3. One might interpret this to mean that it in terms of ASE, it matters more to be involved in a variety of types of EAs and to be spending more hours per week in fewer EAs. An example of this would be participating in the marching band and on the basketball team, which would likely entail a few practice hours each day plus weekly games and competitions. In this way the involvement in those activities is more intense, rather than light participation in many EAs (for example, if several require only once-a-month meetings for involvement). Theoretically, the concept of spending more hours in fewer activities supports the argument of EAs helping adolescents develop ASE. If youth participate in many EAs but spend only a small amount of time in each one, they will lose out on numerous opportunities for learning new skills and succeeding, both of which require substantial time and effort. On the other hand, spending more time on a few diverse activities allows adolescents to invest enough time to develop talents, increase capability, and succeed in mastering skills, thus increasing self-efficacy and enhancing their development of academic self-efficacy. This pattern of participation is consistent with the recommendations listed above based on the results for Models 3 and 4. It may be worthwhile for future researchers to consider the interaction between diversity of extracurricular activities and hours spent in activities to better understand their relationship. Further testing is necessary to make any conclusive claims regarding the interaction of these concepts.

Table 1. Confirmatory Factor Analysis Model: Predictors of Academic Self-Efficacy

Variable Label	Variable Name	Standardized Coefficients
Student can learn something well if he wants to.	*learnwell*	.863
Student can learn something really hard.	*learnhard*	.732
Student puts forth best effort when studying.	*studyeffort*	.682
Student can get no bad grades if he decides to.	*nobadgrades*	.750
Student can do an excellent job on his math assignments.	*mathassign*	.637
Student can do an excellent job on his math tests.	*mathtest*	.517
Student can master the skills he learns in his math class.	*mathmaster*	.652
Student can do an excellent job on his English assignments.	*engassign*	.639
Student can do an excellent job on his English tests.	*engtest*	.619
Student can master the skills he learns in his English class.	*engmaster*	.627
Model Fit Statistic: RMSEA		.047
Model Fit Statistic: CFI		.991

Note: All coefficients were significant at the $p < .001$ level.

Table 2. Standardized Correlated Error Terms for Confirmatory Factor Analysis Model: Predictors of Academic Self-Efficacy

	learnwell	learnhard	studyeffort	nobadgrades	mathassign	mathtest	mathmaster	engassign	engtest	engmaster
learnwell		-.094	.058				-.176			
learnhard	-.094		-.144							
studyeffort	.058	-.144		-.175						
nobadgrades			-.175							
mathassign						.587	.675			
mathtest					.587		.556			
mathmaster	-.176				.675	.556				
engassign									.677	.584
engtest								.677		.628
engmaster								.584	.628	

Note: All coefficients were significant at the $p < .001$ level.

Table 3. Descriptive Statistics of Variables in Base Year of ELS:2002 (N = 15,244)

Independent Variables	Percent	Mean	St. Dev.	Range
Gender: Female	49.64			0-1
Race: American Indian/Alaskan Native	0.96			0-1
Race: Asian/Pacific Islander	4.18			0-1
Race: Black	14.40			0-1
Race: Hispanic	15.90			0-1
Race: Mixed	4.34			0-1
Race: White	60.22			0-1
Parental Education		4.36	2.05	1-8
Income Categories		7.96	2.38	0-12
School Type: Public	92.38			0-1
Urbanicity: Urban	30.15			0-1
Urbanicity: Suburban	50.28			0-1
Urbanicity: Rural	19.56			0-1
Region: Northeast	18.53			0-1
Region: Midwest	24.16			0-1
Region: South	34.31			0-1
Region: West	23.00			0-1
Academic Risk: Repeated at least one grade	12.61			0-1
Standardized Composite Test Score (Average of Math/Reading)		50.02	10.00	20.91-81.04
Time: Hours worked per week		9.28	11.81	0-41
Time: Community Service (How often)		0.42	0.73	0-3
Time: Hours/week spent on homework outside of school		5.71	5.76	0-26
Time: Hours/weekday spent using TV/DVDs or video/computer games		4.18	2.89	0-12
H1: Participation in extracurricular activities	83.02			0-1
H2: Number of activity types		1.52	1.09	0-5
H3a: Total number of extracurricular activities		2.79	2.52	0-20
H3b: Hours per week spent on extracurricular activities		4.59	5.73	0-21

Table 4. Structural Equation Models of Adolescent Extracurricular Activity Participation and Academic Self-Efficacy, Standardized Coefficients in Parentheses (N = 15,244)

Independent Variables	Model 1: H1 and ASE	Model 2: H2 and ASE	Model 3: H3a and ASE	Model 4: H3b and ASE
H1: Involvement in Extracurricular Activities	.181*** (.088)	-----	-----	-----
H2: Multiple Types of Extracurricular Activities	-----	.094*** (.143)	-----	-----
H3a: Number of Extracurricular Activities	-----	-----	.066*** (.237)	-----
H3a (squared)	-----	-----	-.003*** (-.130)	-----
H3b: Hours/Week in Extracurricular Activities	-----	-----	-----	.024*** (.183)
H3b (squared)	-----	-----	-----	-.001*** (-.115)
Female	-.018 (-.012)	-.042** (-.029)	-.023 (-.016)	-.020 (-.014)
Race: White (reference category)	-----	-----	-----	-----
Race: Black	.259*** (.120)	.256*** (.119)	.256*** (.118)	.267*** (.124)
Race: Hispanic	.146*** (.070)	.146*** (.071)	.151*** (.073)	.149*** (.072)
Race: Asian/Pacific Islander	.035 (.014)	.026 (.011)	.038 (.015)	.047 (.019)
Race: American Indian/Alaskan Native	.031 (.004)	.041 (.005)	.037 (.005)	.038 (.005)
Race: Mixed race	-.013 (-.004)	-.020 (-.006)	-.018 (-.005)	-.008 (-.002)
Parental education	.004 (.011)	.001 (.003)	.001 (.003)	.003 (.010)
Income (categories)	.008* (.025)	.007* (.023)	.007 (.022)	.007* (.023)

(continued)

Table 4. (continued)

Independent Variables	Model 1: H1 and ASE	Model 2: H2 and ASE	Model 3: H3a and ASE	Model 4: H3b and ASE
Public School	.027 (.015)	.033 (.019)	.051** (.028)	.026 (.015)
Urbanicity: Urban (reference category)	-----	-----	-----	-----
Urbanicity: Suburban	-.044** (-.030)	-.043** (-.030)	-.044** (-.030)	-.046** (-.031)
Urbanicity: Rural	-.030 (-.016)	-.043* (-.023)	-.045* (-.024)	-.029 (-.015)
Region: Northeast (reference category)	-----	-----	-----	-----
Region: Midwest	.002 (.001)	.005 (.003)	.003 (.002)	-.003 (-.002)
Region: South	.071*** (.047)	.067*** (.044)	.075*** (.050)	.073*** (.048)
Region: West	.025 (.013)	.024 (.013)	.025 (.014)	.022 (.012)
Repeated grade	-.070** (-.031)	-.070** (-.031)	-.069** (-.031)	-.068** (-.030)
Math/Reading test score	.024*** (.328)	.023*** (.314)	.024*** (.325)	.024*** (.326)
Time: Hours worked each week (logged)	-.013* (-.025)	-.014** (-.027)	-.014** (-.027)	-.012* (-.024)
Time: Community service	.075*** (.076)	.050*** (.051)	.060*** (.061)	.077*** (.079)
Time: Hours spent on homework (logged)	.112*** (.129)	.104*** (.120)	.107*** (.123)	.105*** (.121)
Time: Hours spent watching TV/DVDs or playing video/ computer games (logged)	-.052*** (-.046)	-.045*** (-.039)	-.045*** (-.039)	-.051*** (-.044)
Model Fit Statistic: RMSEA	.028	.028	.027	.027
Model Fit Statistic: CFI	.966	.966	.966	.966

* $p < .05$, ** $p < .01$, *** $p < .0001$.

Table 5. Structural Equation Models of Adolescent Extracurricular Participation and Academic Self-Efficacy, Standardized Coefficients in Parentheses – Combined Models (N = 15,244)

Independent Variables	Model 5: H2, H3a, and H3b and Academic Self-Efficacy	Model 6: H2, H3a, and H3b and Academic Self-Efficacy (without H3 squared terms)
H1: Involvement in Extracurricular Activities	-----	-----
H2: Multiple Types of Extracurricular Activities	.074*** (.112)	.080*** (.121)
H3a: Number of Extracurricular Activities	.016 (.058)	.005 (.017)
H3a (squared)	-.001 (-.040)	-----
H3b: Hours/Week in Extracurricular Activities	.011** (.083)	.005*** (.037)
H3b (squared)	-.0004 (-.049)	-----
Female	-.035* (-.024)	-.035* (-.024)
Race: White (reference category)	-----	-----
Race: Black	.258*** (.120)	.258*** (.119)
Race: Hispanic	.150*** (.072)	.149*** (.072)
Race: Asian/Pacific Islander	.037 (.015)	.036 (.014)
Race: American Indian/Alaskan Native	.044 (.006)	.046 (.006)
Race: Mixed race	-.018 (-.005)	-.018 (-.005)
Parental education	.0002 (.001)	.0004 (.001)
Income (categories)	.006 (.020)	.006 (.021)
Public School	.041* (.023)	.038* (.022)

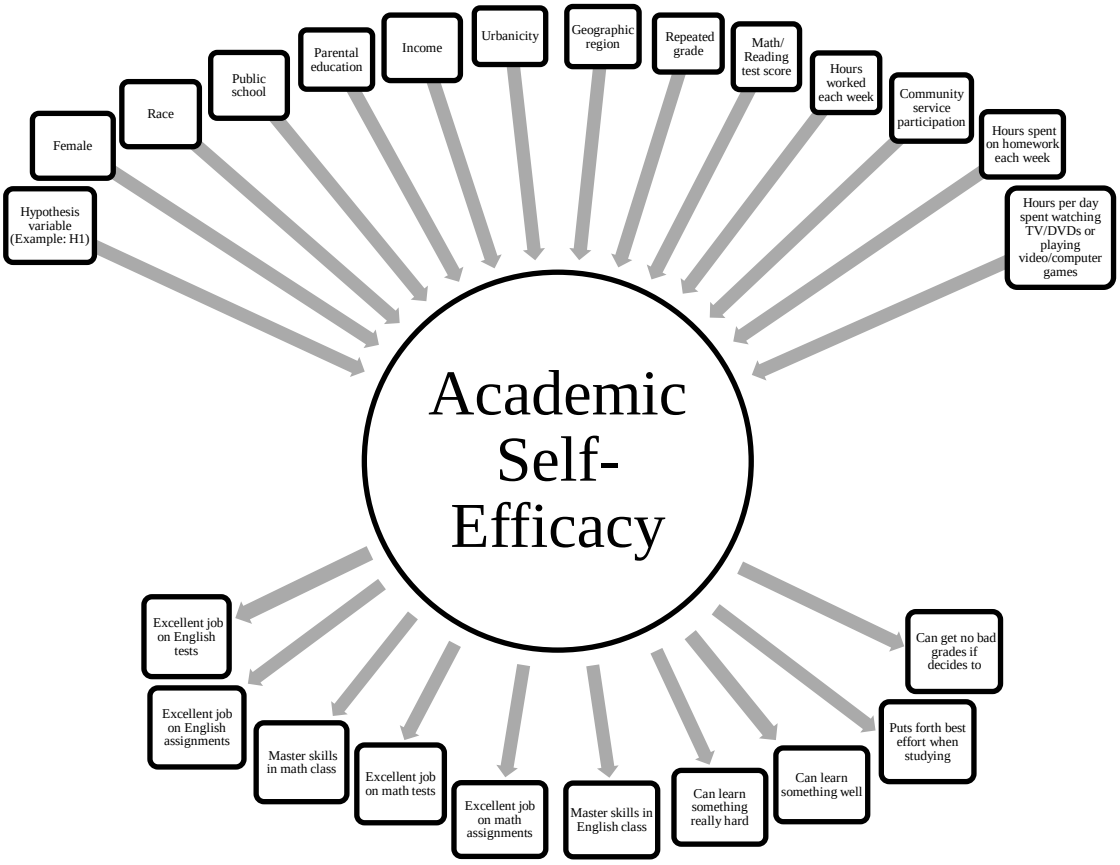
(continued)

Table 5. (continued)

Independent Variables	Model 5: H2, H3a, and H3b and Academic Self-Efficacy	Model 6: H2, H3a, and H3b and Academic Self-Efficacy (without H3 squared terms)
Urbanicity: Urban (reference category)	-----	-----
Urbanicity: Suburban	-.046** (-.031)	-.045** (-.031)
Urbanicity: Rural	-.047* (-.025)	-.046* (-.024)
Region: Northeast (reference category)	-----	-----
Region: Midwest	.001 (.001)	.002 (.001)
Region: South	.069*** (.045)	.069*** (.045)
Region: West	.025 (.014)	.024 (.013)
Repeated grade	-.066* (-.029)	-.067* (-.030)
Math/Reading test score	.023*** (.311)	.023*** (.013)
Time: Hours worked each week (logged)	-.014** (-.027)	-.015** (-.028)
Time: Community service	.050*** (.051)	.049*** (.050)
Time: Hours spent on homework (logged)	.099*** (.114)	.100*** (.115)
Time: Hours spent watching TV/DVDs or playing video/computer games (logged)	-.043*** (-.038)	-.044*** (-.038)
Model Fit Statistic: RMSEA	.026	.027
Model Fit Statistic: CFI	.966	.966

* $p < .05$, ** $p < .01$, *** $p < .0001$.

Figure 1. Visual Depiction of the Structural Equation Models



Note: For correlated error terms, see Table 2.

Figure 2. Predicted Values of Academic Self-Efficacy by Number of Extracurricular Activities

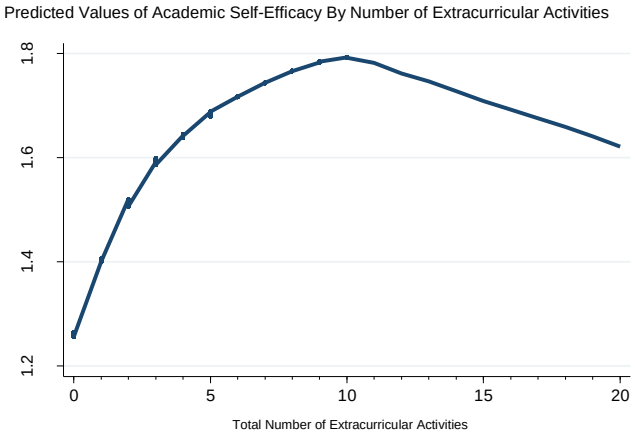


Figure 3. Predicted Values of Academic Self-Efficacy by Hours Spent in Extracurricular Activities