

**SELF CONCEPT AS A MEDIATOR OF EFFECT OF
EXTRACURRICULAR ACTIVITIES ON ACADEMIC
ENGAGEMENT IN MIDDLE SCHOOL STUDENTS**

A Senior Scholars Thesis

by

RACHEL HARPER-TARANTOLO

Submitted to the Office of Undergraduate Research
Texas A&M University
in partial fulfillment of the requirements for the designation as

UNDERGRADUATE RESEARCH SCHOLAR

April 2009

Major: Psychology

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Approved by:

Research Advisor:
Associate Dean for Undergraduate Research:

Jan Hughes
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ABSTRACT

Self Concept as a Mediator of Effect of Extracurricular Activities on Academic Engagement in Middle School Students.
(April 2009)

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The following study examined the relationship between participation in extracurricular activities and academic outcomes, such as achievement and behavioral engagement and self-concept, in an at-risk group of middle school students. The researchers hypothesized that if a relationship existed between extracurricular participation and academic outcomes, then self-competence beliefs would mediate this relationship and that these relationships would remain significant after controlling for the previous years' academic outcomes and self-concept. Consistent with the hypothesis, there was a positive relationship between extracurricular participation and achievement. However, this relationship was no longer significant after controlling for the previous years' achievement. Inconsistent with the hypothesis, the relationship between extracurricular participation and classroom engagement was not significant. As expected, the positive relationship between extracurricular participation and self-concept was significant and remained significant after controlling for the previous years' self-concept. The

implications of these findings and avenues for further research are discussed.

DEDICATION

To all my family and David, for their unconditional encouragement, support and love.

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NOMENCLATURE

B/CS

Bryan/College Station

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CHAPTER I

INTRODUCTION

Children face many challenges to become educated and contributing members of society. These challenges can include poverty, neighborhood violence and peers who engage in anti-social activities. How can these students become resilient and change their educational and civic outlook for the better? One commonly held solution is that extracurricular activities may confer many benefits besides adorning high school resumes. A recent longitudinal study with high school student participants indicates that involvement in extracurricular activities predicts academic and psychological adjustment, educational status and to a limited extent civic engagement (Fredricks & Eccles, 2006). These findings reinforce findings from a large number of studies conducted on high school students that find extracurricular involvement enhances positive developmental outcomes. For example, Mahoney, Cairns and Farmer (2003) found that consistent participation in extracurricular activities from early to late adolescence is positively linked with educational status in young adulthood and, a reciprocal relationship between the continued development of interpersonal competence and extracurricular activities. In addition, extracurricular activities represent positive and structured settings for interacting with peers. Cooper, Valentine, Nye and Lindsay (1999) found that that

This thesis follows the style of the *Journal of Educational Psychology*.

amount of time spent with peers in unsupervised settings was associated with poor academic performance (or deviant behavior).

Almost all research on extracurricular involvement has been conducted with high school students or late junior high. Less is known about the effect of extracurricular participation in middle school, although we know that extracurricular involvement in middle school also has benefits (Fredricks & Eccles, 2006; Mahoney, Cairns & Farmer, 2003).

Recent research conducted with middle school students indicated positive developmental outcomes, such as positive academic adjustment, were found for participants in school clubs (Fredricks & Eccles, 2008). These outcomes continued from the information collected in 8th grade through the measurements taken at the 11th grade (Fredricks & Eccles, 2008). More importantly, the number of prosocial peers increased for early adolescents with low socioeconomic status (Fredricks & Eccles, 2008). If prosocial peers indeed contribute to positive academic outcomes by providing support, then this finding provides further encouragement for the hypothesis that extracurricular activities lead to positive developmental outcomes by providing an environment in which children can engage in activities with prosocial peers. Sports especially are predictive of academic achievement in poor communities with low educational expectations (Guest & Schneider, 2003).

When studies documented the relationship between extracurricular activities and positive developmental outcomes, this galvanized more researchers to begin investigating the reason behind the relationship. It is important to understand what accounts for the benefits of extracurricular participation in middle school. Similar to previous findings with older students, extracurricular activities may promote middle school students engagement in the classroom. Or school engagement may enhance their sense of academic competence. Cole et. al (2001) proposed that these self-competency beliefs were domain specific and that they developed much earlier than adolescence, although early adolescence was assumed to be a key period for the establishment of these beliefs. Their study encompassed data collected from two cohorts of students, one beginning in 3rd grade and the other in 6th grade. The results showed a dip between 6th and 7th grade in the self-competency beliefs in academic, behavior, social and appearance domain (Cole et. al, 2001). Perceived competence in sports, however, appeared impervious to this dip and showed a steady climb concurrent with age (Cole et.al, 2001). This contributes to the idea that success in an athletic activity leads to continued involvement in that athletic activity. Self-competency beliefs may be important because at this time of middle school transition their self-competence may decrease possibly leading to a decrease in academic achievement and engagement.

Another theory for the relationship between extracurricular activities and positive developmental outcomes is Positive Youth Development Theory. PYD focuses on the promotion of competence, confidence, character, connection, and caring as contributing

to positive development. These values have the highest potency when in the context of beneficial relationships occurring with people within their microsystem (Lerner et.al, 2005). Hansen, Larson and Dworkin (2003) posited that the reason that youth activities result in positive outcomes is that extracurricular activities provide a fertile ground of learning environments that encompass socially learned skills not necessarily emphasized in the classroom. However, extracurricular involvement does not occur in a vacuum and not all extracurricular activities correlate with equal benefits for all children. Research conducted by Dearing, Kreider, Simpkins, Weiss (2006) indicated that parents and the attributes of the parents, such as their level of involvement in the child's life and their highest attained level of education, has an effect on how and if children will participate in extracurricular activities. In addition, the length of time that a child or adolescent spends consistently participating in an extracurricular activity could determine the amount of benefits they retain from participating in the extracurricular activity (Mahoney, Cairns & Farmer, 2003). Finally, the context in which the extracurricular activity occurs also has an effect. Guest and Schneider (2003) found that participation in extracurricular activities including the fine arts and student government were associated with higher academic achievement and a desire to achieve higher levels of education. Participation in athletic activities were associated with high academic performance and high aspirations of education, however these outcomes appear to be more dependent on the student's establishment of an athletic identity rather than participation in athletic activity (Guest & Schneider, 2003).

What is clear is that middle school is an at-risk age; it could be possible that extracurricular activities may protect these students from effects detrimental to their academic and social success. The effects for students with low competence and other factors associated with being at risk are more significant in comparison to students with relatively few at-risk factors (Mahoney, Cairns & Farmer, 2003). This could occur due to a built in ceiling effect for the low-risk students, they can only improve a certain amount whereas high-risk students can gain more benefits relative to their current situation.

There are several gaps in the research conducted previously regarding extracurricular activities, which this study endeavors to close. Many studies code extracurricular involvement dichotomously using a simple “yes” or “no” to indicate extracurricular involvement. The present study used a structured interview to determine the amount of time that middle school students spent in each extracurricular category. In addition, the present study specifically collected data from students in the 6th and 7th grade, an area that has not received much attention in studies regarding the benefits of extracurricular activities. The present study hypothesizes that, controlling for time 6 teacher-rated engagement, child perceived competence, and achievement in reading and math, the number of hours of extracurricular activities at time 7 will predict their academic self efficacy at time 7 (Harter, 1988), their time 7 teacher-reported behavioral engagement, and time 7 achievement in reading and math. Furthermore we test the hypothesis that academic self efficacy mediates the relation between activities and engagement.

CHAPTER II

METHODS

Participants

The participants are involved in an extensive, on-going longitudinal study that began in the fall of the 2000-2001 school year. This longitudinal study is examining the impact of grade retention on academic achievement. Those recruited to participate in the study scored below the median score, for their district, on a state approved measure of literacy administered in either May of kindergarten or September of 1st grade and had not been previously retained in first grade. (Hughes & Kwok, 2006) There are 568 total participants still involved in the study six years later. There are two cohorts for this study, one beginning in first grade and the other beginning in first grade of the following year. The data collected for the purposes of this particular study came from information collected from Cohort 1 participants. Cohort 1 began with 449 students of whom 391 (53.2% male) were still active at year 6 and 7 of the study, when many were in 6th & 7th grade. However, not all subjects had complete data relevant to study variables. The percent of complete data ranged from 207 students for Teacher Rated Engagement at Time 7 to 263 for Woodcock Johnson III at Time 6. The sample is ethnically diverse consisting of 38.4% Hispanic, 32.2% Caucasian, 23.3% African American, 4.3% Asian/Pacific Islander and 1.8% Other. Many of the participants were considered to be economically disadvantaged (65%), based on the qualification for discounted/free school lunch.

Procedures

Participants in this longitudinal study are tested annually. Data from year 6 and year 7 of the study are used in this particular study. Specifically Teacher-Rated Behavior Engagement, an individually administered nationally standardized measure of reading and math achievement, and student perceived academic competency were measured in years 6 and 7. Student report of hours spent in extracurricular activities was obtained only at Time 7. Data on perceived academic competency and hours spent in extracurricular activities were obtained in individual interviews conducted by research staff at the students' school in a confidential setting during the school day. The test of achievement was also administered to students in individual sessions at school.

Measures

Behavioral engagement

The Wellborn Teacher Rated Engagement questionnaire (Skinner et al., 1998) was used to assess students' engagement at school. The teachers of the students filled out the 18 item questionnaire, of which ten items assess behavioral engagement. Example items include; "Tries hard to do well in school", "concentrates on doing work", and "participates in class discussion". Teachers were asked to indicate the extent to which each statement was true of their student on a 1 (Not true at all) to 4 (Very true) scale.

Reading and math achievement

The Woodcock-Johnson III (Woodcock, McGrew, & Mather, 2001) was used to test achievement in reading and math. This diagnostic test assesses mathematical and reading ability through a series of tests. Children more proficient in Spanish than English, based on a test of language proficiency, were administered the Bateria III (Woodcock, Muñoz, McGrew, & Mather, 2005), a Spanish-language version of achievement that yields scores equivalent to those of the Woodcock-Johnson III.

Perceived academic competence

The Self Perception Profile for Children and Adolescents (Harter, 1988) was used to assess self-concept beliefs. The SPPA is a multidimensional self-report measure designed to assess perceived competence or adequacy of adolescents in eight domains. Only the scholastic competence scale will be used in this study. The SPPA is scored on a four-point scale, with higher indicating stronger self-adequacy perceptions.

Hours spent in extracurricular activities

Extracurricular involvement was assessed through individual interviews. In these interviews, students are asked to indicate whether they currently participate in each of six categories of extracurricular activities. For each activity the youth indicates participating in, the interviewer asks the youth to indicate how many days a week they participate in how many hours they participate each time. A total number of hours/week is calculated for each of the six categories of extracurricular activities. Extracurricular

activities are defined as sponsored by the school. Participants' responses were classified into one of the six following categories:

Sports/Athletics

Performance Arts (band, drama chorus)

Academic clubs (chess, Spanish, academic UIL, FFA, NHS)

Government (student council, class council)

Service (tutoring, key club, environmental awareness)

Tutoring

Students rarely reported participation in some extracurricular activities; therefore, only the total number of hours was used in this study.

Data analysis

Descriptive information (e.g., means and standard deviation, kurtosis, and skewness) on all study variables will be reported. We will also investigate gender and ethnic/racial differences on study variables using t-tests. Research hypotheses will be investigated with three hierarchical multiple regression analyses (one for each of the three outcomes). In step 1, time 6 performance on the outcome is entered. In step 2, student reported hours in extracurricular activities is entered. We expect that the change in R^2 in step 2 will be significant for each equation. That is, we expect that hours in extracurricular activities will account for variance in students' performance on the outcome in year 7, above the students' performance on that same outcome in Year 6. Finally, we will use regression analyses to test whether the effect of hours on

achievement and engagement is mediated by the effect of hours on perceived academic competence. The hypothesized mediation relationship will be tested following Baron & Kenny (1986).

CHAPTER III

RESULTS

The predicted model shown in Figure 1 illustrates the hypothesis of this paper. We predicted that the number of hours of extracurricular activities would predict academic outcomes, specifically achievement and behavioral engagement and that this relationship was mediated by academic competence beliefs.

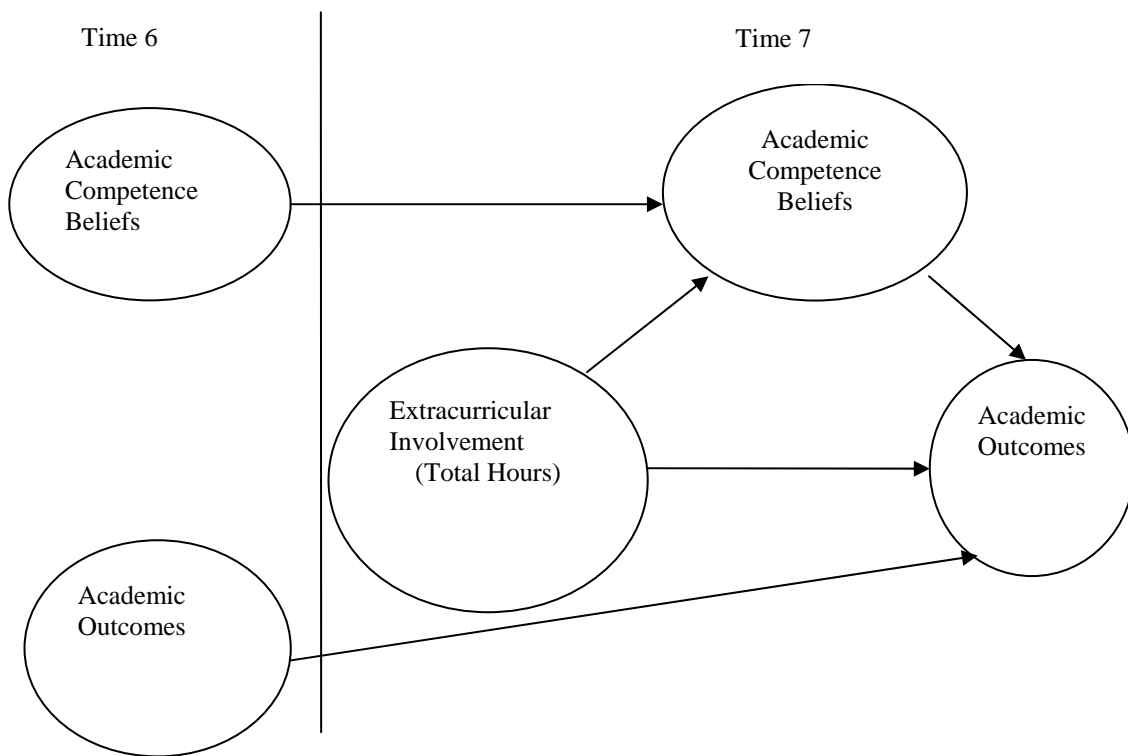


Figure 1: Predicted Model

Data were screened to identify outliers. Three cases of extreme data for the number of hours reported spent in extracurricular activities were found. These data were recoded as 24.75 hours to ensure a more even distribution. The decision to recode outlier data as 24.75 was made because this was the highest value of the three cases that was within three standard deviations of the mean.

Descriptive statistics

Descriptive statistics for the sample are described in Table 1. The mean WJ scores for reading and math at Time 6 are equivalent to age standard scores of 94.7 in Reading and 98.4 in Math, respectively. The Self Competence Beliefs and Teacher Rated Behavioral Engagement are mean item scores. The mean total number of hours spent in extracurricular activities was approximately four hours per week. After the recoding of the outlier scores, the values of skewness and kurtosis for the variables were within acceptable limits.

Table 1 Descriptive Statistics for Study Variables

	Mean	Standard Deviation	Skewness	Kurtosis
Broad WJ Reading Score (T6)	506.33	23.397	-.441	3.030
Broad WJ Math Score (T6)	510.45	11.793	-.923	2.458
Self Competence Beliefs- Scholastic Competence (T6)	2.8661	.69176	-.210	-.505
Teacher Rated Engagement (T6)	2.7296	.66458	.091	-1.048
Broad WJ Reading Score (T7)	513.11	22.791	-.569	1.992
Broad WJ Math Score (T7)	514.82	12.758	-.691	1.990
Self Competence Beliefs- Scholastic Competence (T7)	2.8794	.69928	1.741	3.514
Teacher Rated Engagement (T7)	2.7615	.67545	-.114	-.910
Reported Hours spent in Extracurricular Involvement (T7)	3.9011	5.00447	-.318	-.349

Correlations

The correlational data for the study are shown in Table 2. Number of hours in extracurricular activities showed statistically significant, but small correlations with WJ math and reading scores at Time 6 and Time 7, as well as with Adolescent Perceived Competence. As expected, adolescent scholastic competence beliefs were significantly correlated with teacher rated engagement as well as with WJ math and reading scores. These correlations were representative of both Time 6 and Time 7. However, inconsistent with the hypothesis, academic engagement did not show significant correlation with number of hours in extracurricular activities. Academic self competence was correlated with outcome variables, as expected.

Table 2 Correlations of Study Variables

	WJ Broad Reading Score (T6)	WJ Broad Math Score (T6)	Adolescence Perceived Competence-Scholastic Competence (T6)	Teacher Rated Wellborn Behavioral Engagement (T6)	Teacher Rated Wellborn Behavioral Engagement (T7)	WJ Broad Reading Score (T7)	WJ Broad Math Score (T7)	Hours Spent in Extracurricular Activities (T7)
WJ Broad Reading Score T6								
WJ Broad Math Score T6	.703**							
Adolescence Perceived Competence-Scholastic Competence (T6)	.318**	.359**						
Teacher-Rated Wellborn Behavioral Engagement (T6)	.327**	.395**	.322**					
Teacher-Rated Wellborn Behavioral Engagement (T7)	.245**	.251**	.180*	.537**				

Table 2 continued

WJ Broad Reading Score (T7)	.930**	.689**	.349**	.333**	.221**			
WJ Broad Math Score (T7)	.188**	.882**	.389**	.412**	.254**	.734**		
Hours in Extracurricular Activities (T7)		.197**	.135*	.046	.091	.148*	.203**	
Adolescence Perceived Competence-Scholastic Competence (T7)	.188**	.285**	.505**	.270**	.292**	.233**	.351**	.172**

Hierarchical multiple regression analysis

Linear regression analysis

A linear multiple regression analysis was performed to assess the effect of extracurricular activity hours on the four outcomes assessed at time 7. The results of this analysis are reported in Table 3. In each case, Time 6 performance on the outcome was included in the equation. These analyses confirmed that both academic competence beliefs and behavioral engagement are stable from year to year. However, hours in extracurricular activities did effect Time 7 competence beliefs and this result was significant above the correlation with Time 6 academic competence beliefs. Number of extracurricular hours accounted for an additional 1.3% of the variance in Time 7 competence beliefs, above Time 6 competence beliefs. Total hours spent in extracurricular activities did not contribute above the baseline level of the other three outcome variables; behavioral engagement and WJ reading & math scores. Given these results, tests of mediation were not appropriate.

Table 3 Results of Regression Analyses

Time 7				
	Competence Beliefs	WJ Reading Scores	WJ Math Scores	Teacher Rated Engagement
Outcomes Time 6	.505	.930	.882	.552
Predictor Time 6	.489**	.927	.873**	.551**
Total Hours in Extracurricular Activities	.116**	.017	.048	.006

CHAPTER IV

SUMMARY AND CONCLUSIONS

The zero order correlations between number of hours in extracurricular activities and outcomes were consistent with the view that hours spent in extracurricular activities may predict positive outcomes. Furthermore, competence beliefs were, as expected, correlated with reading, math and engagement. However, given the strong cross-year stability for reading and math outcomes, number of hours did not predict changes in outcomes from one year to the next. This could mean that number of hours and achievement are both influenced by common variables that were not included in this study, such as family socioeconomic status or child initiative. The failure to find a unique effect of number of hours on teacher rated engagement may be due to the fact that different teachers rated engagement each year. Thus, the measure may not be the same measure at each year due to source effects. Thus, it provides a less adequate measure of change.

We did find that number of hours uniquely predicted student competence beliefs at Time 7, above Time 6. This finding is consistent with the view that extracurricular participation promotes student self-concept. Given the extensive evidence that a student's academic competence beliefs predict their motivation and future achievement, it is possible that over time number of hours does effect achievement. However, we had insufficient time for such effects to be manifested. This possibility is particularly likely

because studies that focus on the extracurricular involvement of high school students have found a positive relationship between extracurricular involvement and academic adjustment and higher educational attainment in adulthood (Fredricks & Eccles, 2006; Guest & Schneider, 2003).

There are several possibilities for lack of unique effect of number of hours on outcomes. One possible reason is that the number of hours spent in extracurricular activities reported by the participants was not very high, with the mean only being approximately four hours a week. Also, many of the participants reported not spending any time in extracurricular activities. Even though extracurricular involvement may be beneficial to students for many reasons, this low level of involvement may be insufficient to fully reap all the benefits of these activities. The consideration of this possibility also leads to concern over the reason why so few hours are reported as spent in extracurricular activities. One reason could be that access to extracurricular programs is not as widespread or as feasible as previously thought. Lower socioeconomic status students at higher risk of not obtaining access to these programs. The fact that 65% of our sample was eligible for free or reduced lunch may explain the relatively low involvement in extracurricular activities. Another reason for lack of effect of extracurricular involvement on the outcomes could be that this study measured extracurricular involvement as involvement in school sponsored extracurricular activities. Therefore, some students may be participating in non-school affiliated, structured, extracurricular activities such as the YMCA, Boys and Girls Club or club sports teams.

Encouragingly, the total hours spent in extracurricular activities did explain a small amount of the variance in academic competence beliefs (.12), even when the previous years' academic competence beliefs were taken into account. This provides support for a positive, albeit small, effect of extracurricular activities on academic competence beliefs. This positive relationship also lends support to the value of after-school programs and their importance extends beyond physical and social health. This study specifically looked at academic self-competence beliefs, and these beliefs were enhanced by extracurricular involvement. This study also demonstrated a significant relationship between academic self-competence beliefs and academic achievement and behavioral engagement. Thus, instead of impacting academic outcome variables, extracurricular involvement contributes to a factor that does influence these outcome variables directly. The extent and exact nature of these complex relationships need to be explored in further studies.

Notably, this study is the first to collect data on extracurricular involvement from participants as young as 6th grade and focus on the extracurricular involvement of middle school students.

As with all studies, further longitudinal research involving more than two years of data may show long-term effects or stronger findings at later time periods. This is especially promising because many research studies examining the effects of extracurricular involvement on developmental outcomes in students have found strong correlations for

high school students (Fredricks & Eccles, 2006; Guest & Schneider, 2003, Mahoney, Cairns & Farmer, 2003).

This study supports and highlights the need for greater youth participation in extracurricular activities. These activities provide a safe alternative environment that emphasizes teamwork and individual responsibility.

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